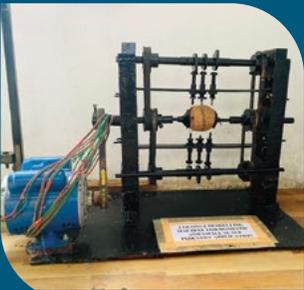




Annual Report 2022-23



ANNUAL REPORT 2022-23



NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA

BIJNI COMPLEX, LAITUMKHRAH, SHILLONG 793003



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The Vision:

A Centre of Excellence vibrant with academic activities and bubbling with youthful creative energy, making significant contribution to the World of Knowledge and Technology and to the Development of the State, the Region and the Nation.



The Mission:

- To impart quality education in the fields of Engineering, Science and Technology at Undergraduate as well as Postgraduate levels with special attention to encourage innovation and creativity in these fields.
- To engage in creation of knowledge and development of technologies through effective research programs.



The Guiding Principles:

- Every entity deserves respect; responsiveness, fairness and transparency are keys to it.
- Role of an academic institution is to enable unhindered exchange of knowledge.
- True education promotes the spirit of enquiry.
- Nurturing of talent and promotion of creativity must for achieving excellence.
- Learning is a lifelong process.
- Examination and evaluation processes are tools to enable better learning, not the ends.
- Every effort should be made to take the benefit of science and technology to the poor and underprivileged.
- Rural development is must for balanced development of the nation.
- Protection of the environment must get priority.



The Code of Ethics:

The Institute follows the IEEE code of ethics for research:

- To accept responsibility in making engineering decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment.
- To avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist.
- To be honest and realistic in stating claims or estimates based on available data.
- To reject bribery in all of its forms.
- To improve understanding of technology, its appropriate application, and potential consequences.
- To maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations.
- To seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others.
- To treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin.
- To avoid injuring others, their property, reputation, or employment by false or malicious action.
- To assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

The Institute:

Permanent Campus Location: Sohra, East Khasi Hills District, Meghalaya 793108

Present Location: Bijni Complex, Laitumkrah, Shillong 793003, Meghalaya

Website: <http://nitm.ac.in/>



The Authorities:

Visitor: Shri Ram Nath Kovind, The Hon'ble President of India (upto 24.07.2022)

Smt. Droupadi Murmu, The Hon'ble President of India (w.e.f. 25.07.2022 onwards)

Board of Governors:

- Shri Sajjan Bhajanka, Chairman
- Prof. B. B. Biswal, Director, NIT Meghalaya, Member (upto 31.01.2023)
- Prof. G. Panda, Director i/c, NIT Meghalaya, Member (w.e.f. 01.02.2023 onwards)
- Addl. Secretary (TE)/ Jt. Secretary (TE), MHRD, Member
- Financial Adviser, MHRD, Member
- Shri W. Roy, MD, Meghalaya Power Carriers (India) Pvt. Ltd, Member
- Shri MedricksonTariang, Retired Chief Engineer, PWD (Roads), Meghalaya,
- Prof. H.C. Das, Professor, Dept. of Mechanical Engineering, NIT Meghalaya, Member
- Dr. P. N. Chatterjee, Associate Professor, Dept. of Chemistry, NIT Meghalaya, Member (upto 02.07.2022)
- Dr. G. K. Dutta, Associate Professor, Dept. of Chemistry, NIT Meghalaya, Member (w.e.f. 26.09.2022 onwards)
- Director, IIT Guwahati, Member
- Shri B. N. Choudhury, Registrar, NIT Meghalaya, Secretary (upto 07.01.2023)
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya, Secretary (w.e.f. 08.01.2023 onwards)

Senate:

- Prof. B. B. Biswal, Director, NIT Meghalaya, Chairman (upto 31.01.2023)
- Prof. G. Panda, Director i/c, NIT Meghalaya, Chairman (w.e.f. 01.02.2023 onwards)
- Prof. N. C. Shivaprakash, retired Professor, IISc Bangalore, Member.
- Prof. N. Tripathy, Professor, IIM Shillong, Member
- Prof. Mahabir Panda, Professor, NIT Rourkela, Member (w.e.f. 03.12.2021 onwards)
- Prof. G. Panda, Professor, NIT Meghalaya, Member
- Prof. A. Bhattacharjee, Professor, NIT Meghalaya, Member
- Prof. H. C. Das, Professor, NIT Meghalaya, Member
- Shri B. N. Choudhury, Registrar, NIT Meghalaya, Member Secretary (upto 07.01.2023)
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya, Member Secretary (w.e.f. 08.01.2023 onwards)
- Prof. H.C. Das, Professor, Dept. of Mechanical Engineering, NIT Meghalaya, Member
- Shri B. N. Choudhury, Registrar, NIT Meghalaya, Member Secretary (upto 07.01.2023)
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya, Member Secretary (w.e.f. 08.01.2023 onwards)

Finance Committee:

- Shri Sajjan Bhajanka, Chairman
- Director, IIT Guwahati. Member
- Prof. B. B. Biswal, Director, NIT Meghalaya, Member (upto 31.01.2023)
- Prof. G. Panda, Director i/c, NIT Meghalaya, Member (w.e.f. 01.02.2023 onwards)
- Jt. Secretary (TE), MHRD or his nominee, Member
- Finance Adviser, MHRD or his nominee, Member
- Shri W. Roy, MD, Meghalaya Power Carriers (India) Pvt. Ltd, Member

Building & Works Committee:

- Prof. B. B. Biswal, Director, NIT Meghalaya, Chairman (upto 31.01.2023)
- Prof. G. Panda, Director i/c, NIT Meghalaya, Chairman (w.e.f. 01.02.2023 onwards)
- Smt. Veena Dunga, Deputy Secretary (NITs), Ministry of Education, New Delhi, Member
- Shri. Anil Kumar, Director (Finance), Ministry of Education, New Delhi, Member
- Shri. S. Pyngrope, Retd. Secretary to the Govt. of Meghalaya, PWD (R&B), Govt. of Meghalaya, Member
- Shri T. R. Pdah, Retd. Chief Engineer, MePDCL, Shillong, Member
- Shri K. K. Mawa, Superintending Engineer, PWD (Buildings), Govt. of Meghalaya, Member (upto 09.01.2022)
- Shri D. Langstang, Superintending Engineer, PWD (Buildings), PWD (Buildings), Govt. of Meghalaya, Member (w.e.f. 10.01.2022 onwards)
- Dean (Planning & Development), NIT Meghalaya, Member
- Dr. Paresh Nath Chatterjee, Associate Professor, Dept. of Chemistry, NIT Meghalaya, Member (upto 02.07.2022)
- Shri B. N. Choudhury, Registrar, NIT Meghalaya, Member Secretary (upto 07.01.2023)
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya, Member Secretary (w.e.f. 08.01.2023 onwards)

Administration:

Director	
	Prof. B. B. Biswal (upto 31.01.2023) Prof. G. Panda (w.e.f. 01.02.2023 onwards)
Deans:	
Dean (Academic Affairs)	Prof. G. Panda (upto 30.06.2022) Dr. A. Banerjee (w.e.f. 01.07.2022 onwards)
Dean (Research& Consultancy)	Dr. G. K. Dutta
Dean (Student Welfare)	Prof. H. C. Das
Dean (Planning & Development)	Dr. C. Marthong
Dean (Faculty Welfare)	Prof. A. Bhattacharjee
Professors Incharge:	
Computer Centre	Dr. S. S. Yadav, EC
Centre of International Relations	Dr. M. Saha, MA
Centre for Career Development	Dr. R. S. Das, ME
Centre for Technology Enabled Learning	Dr. P. K. Rathore, EC
Centre for Robotics & Mechatronics	Dr. B. K. Sarkar, ME
Centre for Innovation Incubation & Entrepreneurship	Dr. Ch. V. Rama Rao, EC (upto 28.07.2022) Prof. Gayadhar Panda, EE (w.e.f. 12.08.2022 onwards)
Academic Affairs – Postgraduates & Research	Dr. (Mrs) S. Thokchom, CS (upto 03.11.2022) Dr. B. K. Balabantaray, CS (w.e.f. 04.11.2022 onwards)
Academic Affairs – Undergraduates	Dr. R. Roy, EE
Heads of Departments:	
Computer Science & Engineering (CS)	Dr. Yogita (upto 07.08.202) Dr. Surmila Thokchom (w.e.f. 08.08.2022 onwards)
Electronics and Communication Engineering (EC)	Dr. P. Rangababu (upto 30.06.2022) Dr. Ch. V. Rama Rao (w.e.f. 01.07.2022 upto 28.07.2022) Dr. Prabir Kumar Saha (w.e.f. 29.07.2022 onwards)
Electrical Engineering (EE)	Dr. S. Debbarma
Mechanical Engineering (ME)	Dr. R. N. Mahapatra (upto 30.06.2022) Dr. K. Debnath (w.e.f. 01.07.2022 onwards)
Civil Engineering (CE)	Dr. H. M. Kalita
Physics (PH)	Dr. (Mrs) A. Nath (upto 30.06.2022) Dr. K. Senthilkumar (w.e.f. 01.07.2022 onwards)
Chemistry (CY)	Dr. N. K. Nath
Mathematics (MA)	Dr. B. Kumbhakar
Humanities and Social Sciences (HSS)	Dr. P. S. Mangang
Students Activity Centre (SAC):	
President	Dr. A. K. Paul, CY
Vice President (Cultural)	Dr. B. K. Debnath, ME
Vice President (Technical)	Dr. D. Adak, CE (upto 30.06.2022) Dr. B. K. Balabantaray, CS (w.e.f. 01.07.2022 onwards)

Vice President (Sports & Games)	Dr. Ksh. M. Singh, EE
Faculty i/c of Robotics Club	Dr. Tanmoy Bose, ME Dr. Pradeep Kumar Gautam, CE
Faculty i/c of Coding Club	Dr. Deepak Kumar, CS Dr. (Mrs) Salam S. Devi, EC
Faculty i/c of Indoor Sports Club	Dr. Adarsha Kumar Jena, MA Dr. Ganesh Ch. Dhal, CE
Faculty i/c of Outdoor Sports Club	Dr. Timir Karmakar, MA Dr. Piyush P. Singh, EE
Faculty i/c of Dance & Drama Club	Dr. Shravan Kumar Bandari, EC
Faculty i/c of Music Club	Dr. (Mrs) Smrutirekha Sahoo, CE
Faculty i/c of Literary Club	Dr. Alekha Ch. Nayak, PH
Faculty i/c of Photography & Fine Arts Club	Dr. D. Podder, CE
Faculty i/c of EBSB Club	Dr. A. P. Singh, CS
Hostel administration:	
Chief Warden	Dr. A. S. Roy, CY
Wardens:	
Polo Boys Hostel	Dr. S. Moulik, CS (upto 30.06..2022) Dr. T. Karmakar, MA (w.e.f 01.07.2022 onwards)
Kench's Trace Boys Hostel	Dr. B. Balabantaray, CS(upto 30.06..2022) Dr. Deepak Kumar, CS (w.e.f 01.07.2022 onwards)
Umpling Boys Hostel	Dr. A. C. Nayak, PH
Lapalang I Boys Hostel	Dr. P. K. Gautam, CE
Lapalang II Boys Hostel	Dr. S. K. Bandari, EC
Lapalang III Boys Hostel	Dr. M. Rahang, ME
Lapalang IV Boys Hostel	Dr. P. K. Saha, EC
Lapalang V Boys Hostel	Dr. D. Podder, CE
Lower New Colony Boys Hostel	Dr. A. K. Jena, MA
Nongthymmai Girls Hostel	Dr. (Mrs) S. S. Devi, EC
Lapalang Girls Hostel	Dr. (Mrs) S. Sahoo, CE (upto 30.06.2022) Dr. (Mrs.) P. Devi, EC (w.e.f. 01.07.2022 onwards)
Motinagar Girls Hostel	Dr. (Mrs.) N. Kotoky, CE (w.e.f. 01.07.2022 onwards)
Registrar's Office:	
Registrar	Shri B. N. Choudhury (upto 07.01.2023) Dr. R. N. Mahapatra (w.e.f. 08.01.2023 onwards)
Asst. Registrar (Establishment)	Shri B. Blahwar
Asst. Registrar (Academic Affairs)	Smti. A. Rai
Asst. Registrar (Finance & Accounts)	Shri H. Yadav (in-charge upto 27.09.2022) Shri B. Das (w.e.f. 28.09.2022 onwards)
Asst. Registrar (Director's Office)	Shri H. Yadav (upto 31.01. 2023)
Engineering Section:	
Executive Engineer	Shri R. L. Kharpran
Library:	
Asst. Librarian	Dr. R. Kharbihkiew

THE DIRECTOR'S REPORT

The National Institute of Technology Meghalaya is currently operating from its temporary campus at Bijni Complex, Laitumkrah, Shillong. The Institute has completed twelve years since its establishment in the year 2010. During the year 2022-23, the Institute has made many significant strides.

I) Academic Section:

The functioning of Academic Section is headed by Dean (Academic Affairs) and assisted by Professors-in Charge (PIC-UG & PIC-PG&R), Assistant Registrar (Academic Affairs), Superintendent, and Junior Assistants. The Section performs

all the functions related to Academics of the Institute. It also provides administrative support to the Senate, which is the highest academic body of the Institute.

People under Academic Section

Prof. Gayadhar Panda, Dean (Academic Affairs) till 30.06.2022	Mr. Alok Prakash Tripathi, Superintendent (Academic Affairs) till 11.8.2022
Assoc. Prof. Atanu Banerjee, Dean (Academic Affairs) w.e.f. 01.07.2022	Mr. Damut Janai Shakhar, Superintendent (Academic Affairs) w.e.f. 12.8.2022
Dr. S. Thockchom, PIC (AA, PG&R) till 03.11.2022	Mr. Manfred E. Kurbah, Junior Assistant
Dr. Bunil Kumar Balabantaray, PIC (AA, PG&R) w.e.f. 04.11.2022	Mr. Banshailang Myrthong, Junior Assistant
Dr. Rakesh Roy, PIC (AA, UG)	Mr. Julius Iawphniaw, Junior Assitant
Mrs. Ambika Rai, Assistant Registrar (Academic Affairs)	Mr. Bankerlang Lyngdoh, Junior Assistant
Ms. Pragya Yadav, Superintendent (Academic Affairs)	

II) Programmes offered by the Institute:

1) Under Graduate Programme:

The Institute offers B.Tech (Bachelors of Technology) Programme in the following five disciplines:

- Civil Engineering (CE)
- Computer Science and Engineering (CSE)
- Electronics and Communication Engineering (ECE)
- Electrical Engineering (EE)
- Mechanical Engineering (ME)

2) Post Graduate Programmes:

The Institute offers Master of Technology (M.Tech) and Master of Science (M.Sc) as PG Programmes in the following disciplines:

a) *Master of Technology (M.Tech) Programme (Regular/ Sponsored Full Time & Part Time)*

- Civil Engineering (Structural Engineering) [CE]
- Computer Science and Engineering [CSE]
- Electronics and Communication Engineering (VLSI & Embedded system) [ECE]
- Electrical Engineering (Power and Energy Systems) [EE]
- Mechanical Engineering (Fluids and Thermal Engineering) [ME]

b) *Master of Science (M.Sc.) Programme:*

- Physics (PH)
- Chemistry (CY)

- Mathematics (MA)

3) Doctor of Philosophy (Ph.D) Programme:

This is offered with an objective to undertake quality researches for innovations and new technological developments. The Institute is currently offering Ph.D Programme in the following disciplines under both Full Time and Sponsored (Part-Time) Categories.

- Engineering
- Basic Sciences
- Humanities & Social Sciences (HSS)

4) Post-Doctoral Fellowship Scheme:

The Post-Doctoral Fellowship Programme aims to identify and motivate young researchers and provide them support for research in frontier areas of science and engineering. The Institute is currently offering Institute Post-doctoral Fellows (IPDFs) and Sponsored Post-doctoral Fellows (SPDFs) under the following disciplines.

- Engineering
- Basic Sciences
- Humanities & Social Sciences (HSS)

III) Admissions to the various Programmes during 2022-23

- Admission to the Bachelor of Technology Programme (B.Tech) was conducted on the basis of valid JEE Main scores and through the joint seat allocations made by Joint Seat allocation Authority (JoSSA)/ CSAB.
 - Admission to the Master of Technology (M. Tech) Programme in the Institute was conducted on the basis of valid GATE scores and through the counseling conducted by the Centralized Counseling for M. Tech. / M. Arch. / M. Plan (CCMT). However, vacant seats after CCMT counseling were offered for admission to Sponsored (Full Time / Part Time) and GATE qualified candidates through Institute entrance examination.
 - Admission to Master of Science (M.Sc.) Programme was conducted on the basis of valid JAM scores and through Centralized Counselling CCMN. However, vacant seats after CCMN counseling were offered for admission through Institute entrance examination.
 - Admission to the Ph.D Programme was conducted based on the written examination, viva-voce or presentations. The advertisement for the same was published during April 2022 for Autumn 2022 session and in November 2022 for Spring 2023 session.
- Admissions to various Programmes during the year were successfully conducted.

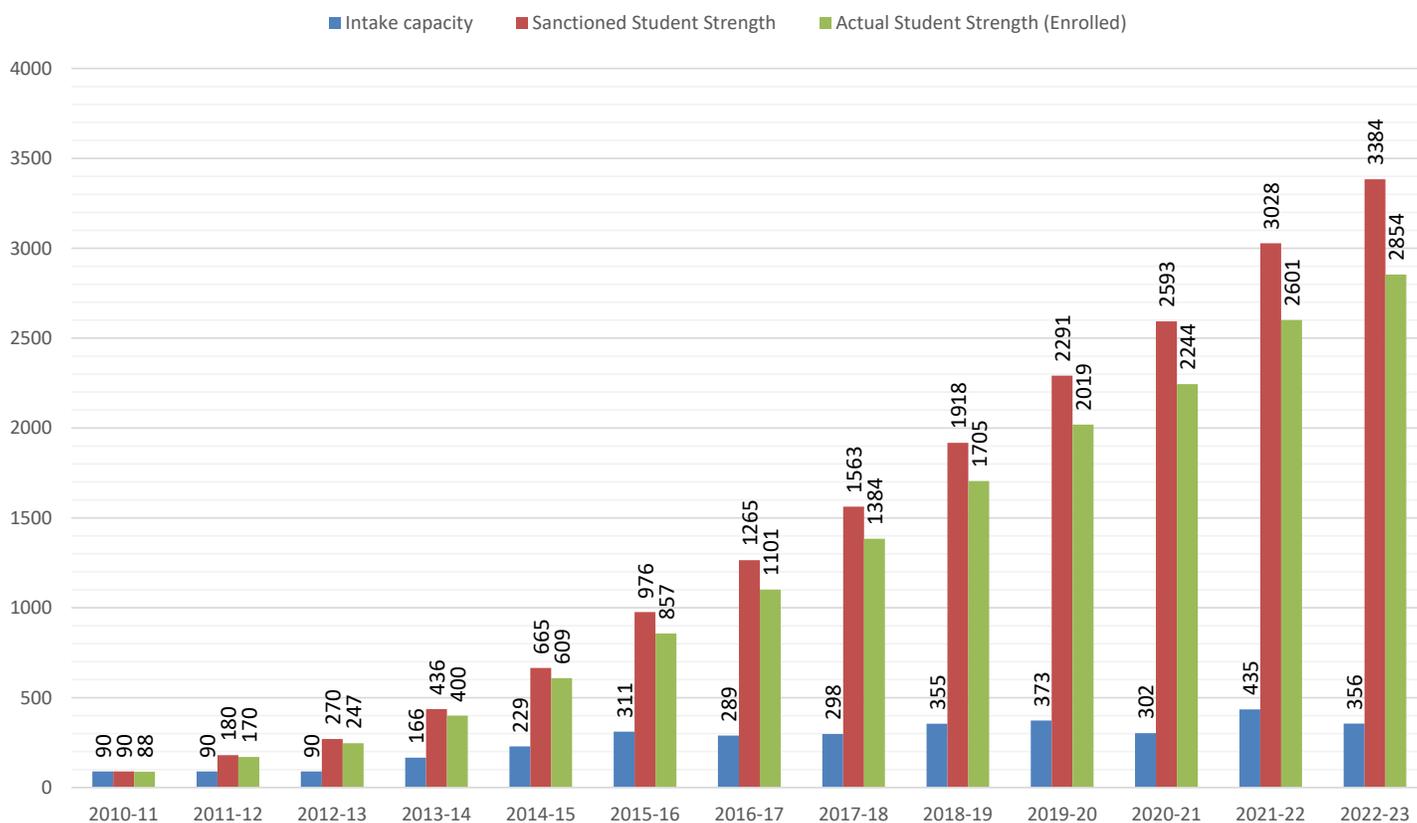


IV) Student's Data upto 2022-23

Admitted in 2022-23

Programme	Discipline	Intake Capacity	Male	Female	SC	ST	OBC	Total
B.Tech	CE	33	21	10	3	15	5	31
	CS	33	27	6	4	12	3	33
	EC	33	28	7	2	13	5	35
	EE	33	24	9	3	14	7	33
	ME	33	25	6	3	13	4	31
	Sub Total	165	125	38	15	67	24	163
M.Tech	CE	20	2	3	0	3	0	5
	CSE	20	4	1	1	2	2	5
	ECE	20	1	0	0	0	0	1
	EE	20	1	0	0	0	1	1
	ME	20	0	0	0	0	0	0
	Sub Total	100	8	4	1	5	3	12
M.Sc.	PH	16	10	4	1	4	4	14
	CY	16	5	6	2	2	2	11
	MA	16	4	6	2	4	0	10
	Sub Total	48	19	16	5	10	6	35
Ph.D.	CE	NA	0	0	0	0	0	0
	CSE	NA	2	2	0	2	0	4
	ECE	NA	2	3	0	2	2	5
	EE	NA	2	2	1	1	0	4
	ME	NA	3	3	0	1	2	6
	PH	NA	5	3	1	0	3	8
	CY	NA	5	2	2	2	0	7
	MA	NA	5	2	0	2	0	7
	HSS	NA	0	2	0	0	1	2
	Sub Total	NA	24	19	4	10	8	43
Total			176	77	25	92	41	253

Student Strength



A total of 253 students were admitted during the Academic Year 2022-23, including the Ph. D scholars

V) Major Events

1) Ninth Convocation:

The Ninth Convocation of the Institute was held on 19th September, 2022. Shri. Satya Pal Malik, Hon'ble Governor of Meghalaya graced the occasion as the Chief Guest. Shri Sajjan Bhajanka, Chairman, Board of Governors of the

Institute, was the Chairman of the Convocation. The **ninth** batch of B. Tech, **seventh** batch of M. Tech, **sixth** batch of M.Sc and Ph.D scholars of the Institute graduated in June, 2022. The students who graduated under the different programmes are presented below: -

Sl. No.	Name of the programme	Number of the students graduated
1	B.Tech	158
2	M.Tech	39
3	M.Sc	23
4	Ph.D	15
Total		235

Most of the qualified students were placed in reputed companies through campus placement



9th Convocation: Dated 19/09/2022 in pictures



2) Research Conclave:

Research Conclave is a gathering of researchers, scholars, and experts in various fields to discuss and share their research findings, ideas, and experiences. The purpose of a research conclave is to promote collaboration and knowledge sharing, and to provide a platform for researchers to connect with one another and learn from their peers.

The 4th Research Conclave of NIT Meghalaya was held during 28th Feb – 1st March 2023.

The event included keynote speeches, Oral presentation, Poster Presentation and Research demonstration on various topics.

The Research Conclave would have provided an important opportunity for researchers to exchange knowledge and ideas in their respective fields, and to establish new collaborations and partnerships. For the 86 participants from NITM as well as different reputed institutions who attended, it would have been an excellent opportunity to expand their knowledge, build relationships, and contribute to the advancement of their field.

List of Awardees

Sl No	Type of Presentation	Track	Branch	Position	Name of Awardee
1	Poster	T1	CIV & MECH	1st	Gorrepotu Surya Rao
2	Poster	T1	CIV & MECH	2nd	Bhargab Madhab Barua
3	Poster	T1	CIV & MECH	3rd	Chiranjibi Champatiray
4	Poster	T2	EC, EEE, CS	1st	Gaurav Bhargava
5	Poster	T2	EC, EEE, CS	2nd	Moirangthem Rabindra Singh
6	Poster	T2	EC, EEE, CS	3rd	Ikkurthi Bhanu Prasad
7	Poster	T3	BSH	1st	Jayshree Barman
8	Poster	T3	BSH	2nd	Arindom Phukan
9	Poster	T3	BSH	3rd	Mahabul Haque
10	Oral	T1	BSH	1st	Pratibha Sharma
11	Oral	T1	BSH	2nd	Poonam Gupta
12	Oral	T1	BSH	3rd	Ankita Bhowmick
13	Oral	T2	Engineering	1st	Srikant Kumar Beura
14	Oral	T2	Engineering	2nd	Abhishek Chauhan
15	Oral	T2	Engineering	3rd	Ikkurthi Bhanu Prasad
16	Research Demo				Poonam Gupta
17	Best Researcher Award				Arindom Phukan
18	Early Researcher Award				Sonali Samal
19	Poster (M.Sc)				Abhay Dhiman
20	Best Researcher Award (B.Tech)				Swastik Jena



4th Research Conclave: Dated 28/2/2023 & 01/3/2023 in pictures



4th Research Conclave: Dated 28/2/2023 & 01/3/2023 in pictures

VI) Notable Achievements of the Institute:

1. NIT Meghalaya has been placed at 60th in the NIRF rankings for 2022.
2. NIT Meghalaya has been ranked 16th among the top 25 Govt. engineering colleges by Outlook ICARE ranking 2022.
3. NIT Meghalaya ranking by India Today is 25 out of 32 colleges in India in 2022.
4. NIT Meghalaya ranking by Indian Institutional Ranking Framework (IIRF) is 72 out of 192 colleges in India in 2022.
5. The Mechanical Engineering and the Electrical & Electronics Engineering Programmes of the Institute has been accredited by NBA for the Academic Years 2021-2022 to 2022-2024, i.e., up to 30-06-2024

VII) Notable Achievements of the Students:

1.) Academic Awards

Sl.no	Name	Roll no	Achievements
1	Vasudeva Rao Perla	B19ME010	GRE - Score - 330
2	Prerana Bakli	S21CY009	TOEFL – Score – 105/120

2) Academic Recognition from Outside the Institute

Sl.no	Name	Roll no	Achievements
1	Palak Gupta	B20EC029	Received a national fellowship under Summer Research Fellowship Program 2022 to pursue a research internship at the Indian Institute of Science.
2	Pardhu Mattupalli	B20CS020	Outstanding performance in Aerospace research intern in Brahmastra Aerospace system.

3) Externally Sponsored Project

Sl.no	Name	Roll no	Achievements
1	Shivam Pandit	B19CS013	Design and Development of Intelligent Algorithms for Analysis and Detection of Obscene Content and Forgery in images available on Social Media Platform - R&D Project under the Cyber Crime Prevention against Women and Children (CCPWC) Scheme, Bureau of Police Research and Development, New Delhi

4) Any Research Recognition from Outside the Institute (Best Paper/Poster Award)

Sl.no	Name	Roll no	Achievements
1	Manik Das	P18MA003	Best paper presentation award in ICMMAAC-22, 04-06 August 2022, Organized By Department of Mathematics, JECRC University, Jaipur, India
2	Richard Badonbok Lyngkhoi	P21CE005	Best Paper Award ICCMS Dec 2022
3	Jayshree Barman	P18CH005	Best Paper presentation in EIHE-2023 (B.A.R.C)
4	Pragyan Jyoti Hazarika	P18CH003	For Best Poster Award CESC 2023
5	Ankita Agarwal	P19CH005	Best Poster Award, ETCS-2023
6	Kakali Baruah	P20CH002	Best Poster, ISMC 2022
7	Sanchia Mae Kharphanbuh	P20PH001	“Best Poster Presentation Award” at the 30th National Conference on Condensed Matter Physics, Condensed Matter Dats-2022 held in National Institute of Technology Nagaland

VIII) Initiatives implemented under NEP 2020:

i. **Inter Disciplinary Project:** Interdisciplinary projects are offered to the students.

ii. **Long Term UG Internship:**

Six months of internship is allowed to the UG students during their 7th or 8th Semester, if the internship is superior in nature and is in continuation or relevant with the research undertaken by the student.

iii. **Major/Minor Degree (w.e.f. 2021 UG Batch):**

Major Degree will be awarded after completion of the undergraduate programme to students who successfully complete the programme within the minimum stipulated period. Eligible students with a CGPA of 8.5 and above will be declared to have passed the degree in first class with honors.

A student will be allowed to register for a minor degree in a particular specialization offered by another department from 3rd semester onwards provided he/she has a CGPA of 7.5 and above at the end of 2nd semester.

IX) Financial Assistance to the Students

The Institute provides full exemption of tuition fees to all the students belonging to SC, ST & PH categories. As per MoE guidelines, from 2016 onwards, *full tuition fee remittance* is also provided to students whose annual family income is less than *one lakh* and *2/3rd fee remittance* is provided to the students with annual family income of one lakh upto *five lakhs*.

All the eligible Ph.D/M.Tech/M.Sc/UG students are receiving either Institute scholarships as per norms or from various funding agencies and scholarship sources. McM Scholarship is also awarded to the M.Sc. students with annual family income of upto Rs. 5,000/- per annum and with consistent academic CGPA of 8.5 and above.

The Outstanding Research Fellowship Scheme (ORFS) provides an opportunity for the scholars to carry out extensive research in a particular domain and also motivates them for completing the Ph.D work in time and with substantial research publications. In 2022-23, two (2) Ph.D scholars were selected under this scheme. The fellowship amount offered is Rs. 50,000/- per month

The Institute Post-Doctoral Fellows (IPDF) admitted to the Postdoctoral Programme of NIT Meghalaya through the procedures adopted by Institute is offered a fellowship of Rs. 55,000/- per month.



Students' Placement

Placement activities are an integral part of National Institute of Technology Meghalaya and the activities were carried out during the year by the Centre for Career Development. The Centre has all the state-of-the-art facilities to facilitate the campus hiring activities of the companies. The objective of the Centre is to make each and every student of NIT Meghalaya a success story and to impart legendary leadership qualities to all the students. It not only ensures that the graduation outcome

of the student is a fruitful and upright one, but also helps that the students to develop into a complete human being with the perfect combination of professional and business ethics while still maintaining the values within themselves. Just like the previous years, the placement of the students was taken up with high priority. The details of the recruiting organizations along with their job offers and packages are given below:

For B.Tech

Sl. No.	Name	No. of Offers	Package Offered (₹ in lakh per annum)
1	Autodesk	1	30
2	Aviz (offcampus)	3	18
3	BEL	4	12
4	BPCL	1	18.95
5	Brane Enterprises	2	13
6	Broadridge	2	10
7	Cairn Oil & Gas	4	12
8	C-Dot	4	19
9	Deloitte	9	7.6
10	Denso	6	5.5
11	Edgeverve	16	8
12	E-Ring	1	11
13	EXL Analytics	3	7.5
14	GAP(PPO)	3	10
15	GE Digital	1	17.37
16	HCL	2	8.5
17	Hitachi	1	6
18	IBM	1	12
19	Increff	1	17.9
20	Infoedge	1	14.5
21	KEC	10	6
22	L&T	9	6.5
23	Mavenir Systems	2	17.3
24	Napier Healthcare	1	10
25	Nokia	6	8.5
26	Oracle	2	8.8
27	Paisabazaar	4	15
28	Pie Infocomm	1	6
29	Reliance Jio Infocomm	11	7.5
30	Salesforce	1	8.25
31	Schlumberger	1	6
32	Talentrecruit	3	9

Sl. No.	Name	No. of Offers	Package Offered (₹ in lakh per annum)
33	Tata Power	1	6.6
34	Tata Projects	5	6
35	Thoughtspot	1	32
36	Truminds	1	11
37	Vedanta	12	11.45
38	Suzuki	1	6.2
39	IGL	5	11
40	Air India	2	5.65
41	Alstom(Off Campus)	1	6.8
42	My Captain	1	5
43	Pocket FM(off campus)	1	
44	Pursuit Software Development limited	2	5.5
45	Mahindra & Mahindra	4	8

Highest Package

32

(₹ in lakh per annum)

Lowest Package

5

(₹ in lakh per annum)

Average Package

10.40

(₹ in lakh per annum)

For M.Tech

Sl. No.	Name	No. of Offers	Package Offered (₹ in lakh per annum)
1	Aakash Byju's	2	7.25
2	Allen Institute	7	5
3	C-DOT	1	19
4	Federal Bank	1	9.83
5	HCL Tech	1	9.5
6	JACOBS India	2	6
7	KEC International	3	7.5
8	MIET	4	4.2 & 4.8
9	Parul University	2	7.2
10	Pie Infocomm	1	6
11	Planet Spark	1	6.5
12	Tata Projects	3	6

Highest Package

19

(₹ in lakh per annum)

Lowest Package

4.2

(₹ in lakh per annum)

Average Package

7.47

(₹ in lakh per annum)

Students Activities



CULTURAL SECTION

LITERARY CLUB

Event 1

1. **Name of the Event:** Model United Nations
2. **Organizing Section:** MUN Committee & Literary Club
3. **Date of Event:** 1st April to 2nd April
4. **Venue of the Event:** CR 8, CR11 CR10 & CTEL, National Institute of Technology Meghalaya (Offline Mode)
5. **No. of Participants:** 70
6. **Brief outcome of the event:**

The Model United Nations (MUN) conducted by the MUN Committee and Literary Club at NIT Meghalaya on the 1st and 2nd of April was an excellent platform for students to showcase their debating skills and knowledge of global issues. The event witnessed enthusiastic participation from students across different streams and years.

The MUN comprised various committees such as UNHRC, UNSC, AIPPM, and IPC. Each committee was assigned a topic relevant to the committee's jurisdiction, and students were expected to represent different countries and debate on the subject. The discussions were intense and insightful, with students presenting well-researched arguments and facts to support their positions.

The UNHRC committee discussed the issue of human rights violations in Israel and Palestine, focusing on the protection of civilians and the role of international organisations in resolving the crisis. The UNSC committee discussed the protection of civilians in armed conflicts, emphasising the need for peacekeeping missions and humanitarian aid. The AIPPM committee focused on the 42nd constitutional amendment, discussing its implications and impact on Indian democracy.

The participants displayed great enthusiasm and commitment to representing their countries and debating on the issues at hand. The judges were impressed with the quality of the arguments presented and the level of research done by the participants. The event helped hone the participants' debating skills and increased their awareness of global issues and the need for cooperation and collaboration in addressing them.

Overall, the Model United Nations conducted by the MUN Committee and Literary Club at NIT Meghalaya was a great success, providing students an excellent platform to discuss and debate pressing global issues. The event helped to build leadership skills and fostered a spirit of teamwork among the participants. The committee topics chosen were relevant and thought-provoking, making the event an enriching experience for all involved.

Event 2

1. **Name of the Event: Speech Competition**
2. **Occasion:** Republic Day 2023
3. **Organizing Section:** Literary Club
4. **Date of Event:** 25/01/2023(Wednesday)
5. **Venue of the Event:** National Institute of Technology Meghalaya (Online Mode)
6. **No. of Participants:** 8
7. **Details of Experts (if any):**

Dr Rubi Charkraborty (Judge)

Dr Ramyani Chakrabarty (Judge)

8. Brief outcome of the event:

On the occasion of Republic Day 2023, the Literary Club organized an online Speech Competition with the theme “Showcasing evolution and progress across different sectors”. The event aimed to provide a platform for participants to showcase their public speaking skills and share their insights on the evolution and progress of various sectors.

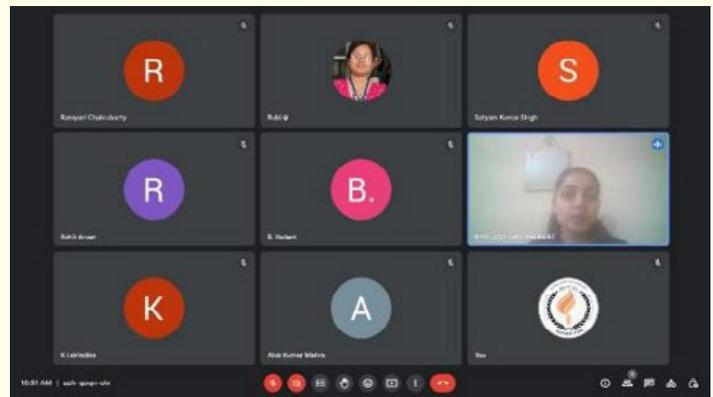
The event was conducted in online mode, which allowed participants to join from anywhere, eliminating the need for physical attendance. The participants were required to prepare a speech of around 5-7 minutes and present it in front of a panel of judges. The competition was open to all members of the Literary Club.

The speeches delivered by the participants were insightful and informative, highlighting the evolution and progress across various sectors such as healthcare, technology, education, and agriculture. The participants also shared their perspectives on the challenges faced by these sectors and how they can be overcome.

The judges evaluated the participants based on their content, delivery, and overall presentation. The winners were awarded prizes and certificates of appreciation.

Overall, the Speech Competition organized by the Literary Club was a successful event that provided a platform for participants to showcase their public speaking skills and share their insights on the evolution and progress across different sectors. The online mode of the event made it accessible to a larger audience and eliminated the need for physical attendance.

8. Selective Relevant images:



Event 3

1. **Name of the Event:** Debate Competition
2. **Occasion:** Valentine's Day, 2023
3. **Organizing Section:** Literary Club
4. **Date of Event:** 14/02/2023(Tuesday)
5. **Venue of the Event:** Mini Auditorium National Institute of Technology Meghalaya (Offline Mode)
6. **No. of Participants:** 8
7. **Details of Experts (if any):**
 Dr Rubi Chakrabarty (Judge)
 Dr Salam Shuleenda Devi (Judge)

8. Brief outcome of the event:

The Literary Club of NIT Meghalaya, under the Student Activity Centre (SAC), organised a Debate competition on the topic "*Is Valentine's Day a waste of time and money?*" on the occasion of Valentine's Day 2023 on 14th February. The event was held in Mini Auditorium. Eight participants took part in the event.



Event 4

1. Name of the Event: Essay Writing **Competition**
2. **Occasion:** Vigilance Awareness Week 2022
3. **Organizing Section:** Literary Club
4. **Date of Event:** 02/10/2022(Monday)
5. Venue of the Event: CTEL, National Institute of Technology Meghalaya (Offline Mode)
6. **No. of Participants:** 12
7. **Details of Experts (if any):** Ms Ankita Bhowmick(Judge)

8. Brief outcome of the event:

The Literary Club of NIT Meghalaya, under the Student Activity Centre (SAC) organized an essay competition on the topic”**Corruption Free India**” in observance of Vigilance Awareness Week 2022 on 2nd November 2022. The event was held in CTEL Ten participants took part in the event.

The event aimed to engage the participants to know more about the importance of A Corruption Free Nation. Ms Ankita Bhowmick NIT Meghalaya, was the event’s judge.



Event 5

- Name of the Event:** Intra-Institute Speech Competition
- Occasion:** 153rd Gandhi Jayanti
- Organizing Section:** Literary Club, EBSB Club
- Date of Event:** 02/10/2022 (Sunday)
- Venue of the Event:** National Institute of Technology Meghalaya (Online Mode)
- No. of Participants:** 7, **Total no. of attendees:** 17
- Details of Experts (if any):**
Mr. Sambit Majumder (Judge)
- Brief outcome of the event:**

The Literary Club of NIT Meghalaya under the Student Activity Centre (SAC) has organized, an Intra- Institute

Speech Competition on the topic “**Swachh Bharat Mission: A survey of the Successes and Challenges so far**” on the occasion of the 153rd Gandhi Jayanti (02 October 2022). The event was held online on the Google Meet platform.

Seven participants were shortlisted for the Final Round after the Preliminary Round.

A surprise element for the audience was also kept to make the event more interactive.

The event aimed to engage the participants as well as the audience to know more about the Swachh Bharat Mission, its Successes, challenges etc. Mr.Sambit Majumder, Trainee Teacher, ME Department, NIT Meghalaya, was the event’s judge.



Event Poster



Participants delivering their speech



Winners of the Talk-Masters (An Annual Intra-Institute Speech Competition) 2022

Event 6

1. **Name of the Event:** National Unity Day Exhibition
2. **Occasion:** National Unity Day
3. **Organizing Section:** Literary Club, EBSB Club
4. **Date of Event:** 31/10/2022(Monday)
5. **Venue of the Event:** Mini-Auditorium, National Institute of Technology Meghalaya (Offline Mode)
6. **No. of Participants:** 10, **Total no. of attendees:** 20
7. **Details of Experts (if any):** Dr. Salam Shuleenda Devi(Judge), Dr. Tribedi Bora(Judge)
8. **Brief outcome of the event:**

The Literary Club of NIT Meghalaya, jointly with the EBSB Club under the Student Activity Centre (SAC) had organized

an exhibition on his life, on the theme “*Life of Sardar Vallabhbhai Patel*” on the occasion of National Unity Day(31st October 2022). The event was held in the Mini-Auditorium of the institution.

The participants were supposed to showcase their exhibit slides and present them to the judges with a short speech on the Life of Sardar Vallabhbhai Patel. The three winners for the exhibition were chosen based on their presentation, the content of the slides and various other parameters.

The aim of this exhibition was to celebrate National Unity Day,i.e., Sardar Vallabhbhai Patel’s birthday and his life achievements. The judges for this exhibition were Dr. Salam Shuleenda Devi, Assistant Professor of the ECE Department and Dr Tribedi Bora, Assistant Professor of the Physics Department.



Event 7

1. **Name of the Event:** Open MIC
2. **Occasion:** Shishir, 2023
3. **Organizing Section:** Literary Club
4. **Date of Event:** 02/04/2023(Sunday)
5. **Venue of the Event:** Lecture Hall National Institute of Technology Meghalaya (Offline Mode)
6. **No. of Participants:** 9
7. **Details of Experts (if any):** Dr. Soumen Moulik (Judge) & Dr. Smrutirekha Sahoo(Judge)
8. **Brief outcome of the event:**

The Open Mic event was organized by the Literary Club of the National Institute of Technology Meghalaya on 02/04/2023(Sunday) in the Lecture Hall of the institute in offline mode. The event was organized under Shishir'23. There were a total of 9 participants who took part in the event

and showcased their talents in various forms, such as poetry, storytelling, singing, and stand-up comedy.

The event was judged by two experts, Dr Soumen Moulik and Dr Smrutirekha Sahoo, who provided valuable feedback to the participants and helped identify the winners of the event. The judges were impressed by the quality of performances and the level of creativity displayed by the participants.

The event proved to be a huge success, providing a platform for the students to showcase their talents and express themselves in a supportive environment. The audience also greatly enjoyed the event and appreciated the efforts of the organizers in putting together such a wonderful program.

Overall, the Open Mic event was a great success and helped to promote the culture of creative expression among the students of the National Institute of Technology Meghalaya. It was a testament to the talent and potential of the students and highlighted the importance of such events in fostering a vibrant and dynamic community of learners.

Event 8

1. **Name of the Event:** Pledge
2. **Organizing Section:** Literary Club
3. **Date of Event:** 26/11/2022
4. **Venue of the Event:** National Institute of Technology Meghalaya
5. **Total no.of attendees:** 80
6. **Details of Experts (if any):**

Dr Amit Kumar Paul

7. Brief outcome of the event:

The purpose of the pledge was to commemorate the importance of the Constitution and to raise awareness about the fundamental rights and duties of Indian citizens. The event was well-organized, and the tentative schedule, awards, and budgetary estimates were provided beforehand for reference. The Literary Club at NIT Meghalaya successfully organized the pledge on Constitution Day and helped raise awareness about the significance of the Constitution in Indian society.

Event 9

Shishir 2K23

Annual Cultural Fest of NIT Meghalaya

Event Name : Shishir

Event Description : Ninth Cultural Fest

Date : 1st-3rd April 2K23

Shishir 2K23, the Ninth Annual Cultural Event of NIT Meghalaya, celebrated our students' diverse cultures and traditions. It offered an opportunity to showcase their talents in various activities such as dancing, music, drama, and other Indian Cultural programs.

Shishir 2K23 was held from 1st-3rd April 2023 and featured a wide range of activities and performances, including music, dance, drama, poetry, and much more.

Students of other NITs, NIFT Shillong, colleges and universities from all around the Nation were invited to participate in Shishir, the cultural fest of NIT Meghalaya.

Day 1:

Inauguration		Few Lines of the Speech
Welcome Speech	A welcome Speech was given for the Chief Guests and Honorable Guests .	Good afternoon everyone, and welcome to Shishir , the ninth cultural fest of the NIT Meghalaya. It is our pleasure to introduce our chief guest, Smti Matsiewdor War Nongbri, IAS , who has graciously accepted our invitation to join us today. We welcome honorable Guests to the Ninth Cultural Fest of NIT Meghalaya.
Special Performance	An Exceptional performance was given for the NITM Student Choir	
Felicitation of Dignitaries	We felicitated our honorable dignitaries with a warm welcoming speech.	
Lightning of Lamp	The Chief Guest and Honorable Guests appreciated and welcomed the goddess of wisdom for her blessings for Shishir by kindling the lamp.	
Speech by President, SAC	The speech was given by the President, SAC - Dr. Amit Kumar Paul .	Ladies and gentlemen, distinguished guests, and cherished members of the NIT Meghalaya community, I stand before you today with immense pleasure to inaugurate our vibrant cultural fest. This celebration of diversity, talent, and creativity showcases the spirit that unites us. Let us embrace this opportunity to foster cultural exchange, build lasting friendships, and create cherished memories that will stay with us forever. Enjoy the festivities and let the magic of culture inspire and connect us all. Thank you.
Speech By Dean, SW	The speech was given by Dean, SW - Prof. Harish Chandra Das .	Dear students, faculty members, and esteemed guests, as the Dean of Student Welfare , I am delighted to welcome you all to the grand inauguration of our annual cultural fest. This event serves as a platform for our talented students to showcase their skills, creativity, and passion. Let us come together, celebrate diversity, and embrace the richness of different cultures. May this fest ignite a spark within us, fostering unity, harmony, and lifelong memories. Enjoy the festivities, and let the cultural extravaganza begin! Thank you.

Inauguration		Few Lines of the Speech
Speech by Chief Guest	The speech was given by the Chief Guest Smti Matsiewdor War Nongbri, IAS , who is currently serving as Secretary to the Government of Meghalaya.	Respected dignitaries, esteemed faculty, talented students, and honored guests, it is my privilege to be here as the Chief Guest at this remarkable cultural fest. This event reflects the vibrant essence of our society, nurturing talent, and promoting cultural exchange. I commend the efforts of NIT Meghalaya for fostering an environment that celebrates diversity and creativity. Let us embrace this opportunity to immerse ourselves in the rich tapestry of art, music, and dance, and create memories that will inspire us in our journey ahead. Thank you, and may this fest be a resounding success!
Speech by Director	The speech was given by the Director, NITM .	Distinguished guests, faculty members, and talented students, it gives me great pleasure to inaugurate the much-awaited cultural fest of NIT Meghalaya . This festival serves as a testament to the immense talent and creativity that thrive within our institution. I encourage you all to actively participate, appreciate, and enjoy the diverse cultural offerings that our students have prepared. Let us come together, celebrate our collective spirit, and create unforgettable memories. Thank you, and let the cultural extravaganza begin!
Vote of Thanks by Vice President, Cultural	The fest was concluded with a wonderful vote of thanks by the Vice President of Cultural, Dr. Biplab Kumar Debnath .	Respected dignitaries, esteemed guests, and dear friends, on behalf of the entire cultural committee, I extend my heartfelt gratitude for gracing us with your presence at this spectacular cultural fest. We are grateful for your support and encouragement, which has made this event possible. Our dedicated team has put in relentless efforts to bring you a mesmerizing showcase of talent, and we hope you enjoy every moment of this celebration. Thank you, and let the cultural extravaganza unfold!
Declaration of Fest Open	The fest was declared open by the Director, NITM .	



After declaring the fest as open , the following events were conducted in Shishir 2K23 :

Event 10

Name of the Event : Model United Nations (MUN)

Organizing Section : Literary Club

Head of Event : -

Coordinator of Event : -

Co - coordinator of theEvent : -

Date : 1st April 2K23 -2nd April 2K23

Venue : CR8, CR10, CR11, CTEL

No of Participants : 68(50 (Outside of NIT Meghalaya))

About the Event :

The Literary Club of NIT Meghalaya, under the Student Activity Centre (SAC), organized the Model United Nations event. The event took place in CTEL, CR8, CR10, and CR11.

Model United Nations or MUN was the replica of the United Nations which aimed at taking International and National Matters into hand and involving young people in understanding, discussing, and providing solutions for such global issues giving

them the platform to be vocal for the future. The students outside of NIT Meghalaya also participated in this event. It was a two day event.

NITM simulated four committees, which were as follows :

1. ALL INDIA POLITICAL PARTIES MEET [AIPPM] Agenda: " Reviewing the long Contested 42nd Amendment of the Constitution of India."
2. UNITED NATIONS SECURITY COUNCIL [UNSC] Agenda: " Protection of Civilians in Armed Conflicts."
3. UNITED NATIONS HUMAN RIGHTS COUNCIL [UNHRC] Agenda: " Discussing the Human Rights Violation in Israel and Palestine."
4. INTERNATIONAL PRESS [IP]
 - (a) Journalism.
 - (b) Photography.

The committees addressed agendas regarding the global issue and national past, present, and future concerns.



Event 11

1. **Name of the Event :** Buzz Wire(Fun Event)
2. **Head of Event :** Tarun , Pramod
3. **Coordinator of Event :** Abhishek Kumar
4. **Co - coordinator of theEvent :** -
5. **Date :** 1st April 2K23 -3rd April 2K23
6. **Venue :** Stalls
7. **No of Participants :** NIT Meghalaya + Outside of NIT Meghalaya

8. About the Event :

It was a fun event conducted for the students of NIT Meghalaya. In this event, the participants moved the wire wand loop(metal loop) along the copper wire “maze” without touching it. Whenever the loop touched the wire, abuzzing sound was heard. The event aimed to be as quick and efficient as possible while using as few touches as possible. Only one winner was chosen based on the above conditions.



Event 12

1. **Name of the Event :** Candle (Fun Event)
2. **Head of Event :** Ankit Kumar, Aviral
3. **Coordinator of Event :** Jaya Kumari
4. **Co - coordinator of theEvent :** -
5. **Date :** 1st April 2K23 -3rd April 2K23
6. **Venue :** Stalls

7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya

8. **About the Event :**

It was a fun event conducted for the students of NIT Meghalaya. In this event, the participants were given the task of lighting up all the candles with a single matchstick. The prizes were notebooks, pens, and other stationary items.



Event 13

1. **Name of the Event :** Dart (Fun Event)
2. **Head of Event :** Bhawana, Sikandar
3. **Coordinator of Event :** -
4. **Co - coordinator of theEvent :** -
5. **Date :** 1st April 2K23 -3rd April 2K23
6. **Venue :** Stalls

7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya

8. **About the Event :**

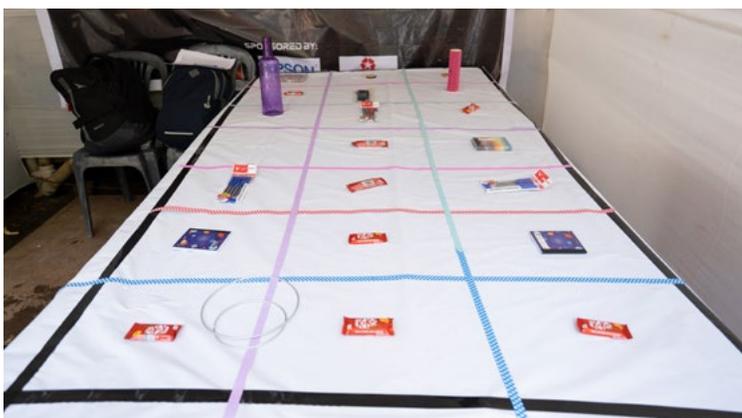
It was a fun event conducted for the students of NIT Meghalaya. In this event, the players were given the task of shooting all six darts in the middlemost red portion of the circular target fixed to the wall. The prizes were notebooks, pens, and other stationary items.



Event 14

1. **Name of the Event :** Ring (Fun Event)
2. **Head of Event :** Anchal, Banti
3. **Coordinator of Event :** Ravi Verma
4. **Co - coordinator of theEvent :** -
5. **Date :** 1st April 2K23 -3rd April 2K23
6. **Venue :** Stalls
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

It was a fun event conducted for the students of NIT Meghalaya. In this event, the players were given the task of aiming at the target and throwing two rings on the prizes from a certain distance. The prizes were notebooks, pens, bottles, and other stationary items.



Event 15

1. **Name of the Event :** SPIC Macay
 2. **Date :** 1st April 2K23
 3. **Venue :** Pandal
 4. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
 5. **About the Event :**
- SPIC MACAY was a voluntary youth movement which promoted intangible aspects of Indian cultural heritage by promoting

Indian classical music, classical dance, folk music, yoga, meditation, crafts and other aspects of Indian culture; it is a movement with chapters in over 300 towns all over the world. A renowned dancer was invited to showcase the beauty of India culture.



Event 16

- Name of the Event :** Jam Session (Day 1)
- Date and Timings :** 1st April 2K23 from 6 pm to 8 pm
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya



5. About the Event :

Artist Jitupan Bora gave an exciting performance for 2 hours where he played different India and International Song. He also sang songs in Local Language Garo and Khasi, Assamese and tried Bengali songs.



Day 2

Event 1

- Name of the Event :** Symphony
- Organizing Section :** Music Club
- Date :** 2nd April 2K23
- Venue :** Pandal

- No of Participants:** 50 (NIT Meghalaya + Outside of NIT Meghalaya)
- About the Event :**

Symphony was a music club event in which solo and group performances were open to all students.

7. Winners:

Symphony Winners				
Vocal				
Position	Name	Roll No	College_Name	
1st	Ashish Paul	C2200720	Shillong commerce college	
	Vicky Hajong	B19CS002	NIT, Meghalaya	
2nd	Antothijah Bhoi	B19CS004	NIT, Meghalaya	
3rd	Alvin Garnel Langslich	B22CS014	NIT, Meghalaya	
Instrumental				
Position	Name	Roll No	College_Name	
1st	Donkumar Nongrum	B22me031	NIT, Meghalaya.	
Group				
Position	Group_Name	Leader_Name	Roll No	College_Name
1st	The VAP's	Antothijah Bhoi	B19CS004	NIT, Meghalaya.
2nd	RYNDIA SONIK	Daoo Garod	B21EE003	NIT, Meghalaya.
3rd	7th harmonics	Andrew Rani	B19EE008	NIT, Meghalaya.



Event 2

- Name of the Event : Food Fare** (Departmental Event)
- Date :** 2nd April 2K23
- Venue :** Mini Auditorium
- No of Participants:** NIT Meghalaya
- About the Event :**

It's an event that was organized under the EK BHARAT SHRESHTHA BHARAT programme initiated by the Govt. of India. The event focused mainly on three states Uttar

Pradesh, Arunachal Pradesh and Meghalaya. The contestants presented a variety of cuisine. It was a departmental event.

6. Winners:

Team Name	Leader Name
1. Sugar Rush	Suman Dowerah-NITM
2. Kitchen Nightmares	Shivam Pandit-NITM
3. Oh! Fish	Palash Boruah-NITM
4. Garo Food Stall	Chesram R Marak-NITM



Event 3

- Name of the Event : Arm Wrestling** (Departmental Event)
- Head of Event :** Alok, Sandeep
- Date :** 2nd April 2K23
- Venue :** Near Administrative Block
- No of Participants:** NIT Meghalaya
- About the Event :**

Arm wrestling was a Shishir event in which two opponents faced each other with their bent elbows placed on a table

and hands firmly gripped, who then attempted to force the opponent's hand down to the table top. This aim of the event was to demonstrate the stronger person between two or more people.

7. Winners:

Category	Name	Position	Roll no
Men below 65kg	Annudhyan	First	NEHU
	Anderson Rapsang	Second	SAS Assistant
	Dr. Khelsoril Wanba	Third	Assistant Professor
Men 65 to 85kg	Manish Sharma	First	P22ME014
	Phanrong Youngkuk	Second	T22CS005
	Suman Kumar Dala	Third	P22EE002
Men above 85kg	Nangsan Pyikhal Wamieh	First	B21CS009
	Priyanka Roy	Second	P22FF007
	Shraerudra Pratik	Third	P22CS009
Men Left Hand	Narendra Kumar	First	B21CE017
	Sushanta Nath	Second	P21FF007
	Ansur Chakma	Third	B20CE032
Women Below 55kg	Manisha Kumari	First	P22MF020
	Vesundhara Singh	Second	B21CE035
	Deinipya Alvira Lynshing	Third	B21EC028
Women Above 55kg	Tyanshen Lemlar	First	P22MF014
	Iphiginia Jyrwa	Second	B19EE004
	Suman Dowerah	Third	P19MA001



Event 4

1. **Name of the Event :** Dumb Charades (Departmental Event)
2. **Head of Event :** Ayushi, Shivani
3. **Coordinator of Event :** Azarath Vali
4. **Co - coordinator of theEvent :** P Dhanunjay Naidu
5. **Date :** 2nd April 2K23
6. **Venue :** Lecture Hall
7. **No of Participants:** NIT Meghalaya
8. **About the Event :**

This was a departmental event .It was an offline event in which one of the team members enacted the words of a chosen movie, and the other team members guessed it.The Guess time was 2 minutes, after which no points were given to the team.

Each team had 4 members from the same department. Departmental points were given and certificates were distributed to the respective winners. Trophies were distributed to the winners.

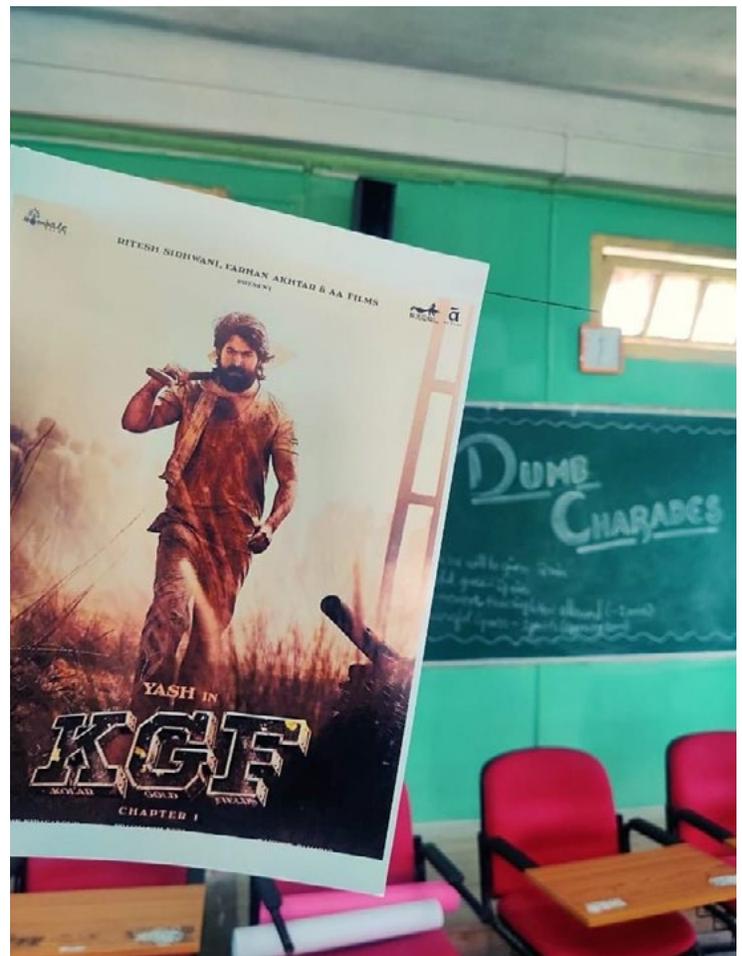
1st position - 500 points

2nd position - 300 points

3rd position - 100 points

9. Winners:

Manas Sharma	1st
Arohi Kashyap	2nd
Anubhav Dixit	3rd



Event 5

- Name of the Event : Snakes and Ladders** (Departmental Event)
- Head of Event :** Akash Patel, Monika
- Coordinator of Event :** Willy
- Co - coordinator of the Event :** Shreya Podder
- Date :** 2nd April 2023
- Venue :** Drawing Hall
- No of Participants:** NIT Meghalaya
- About the Event :**

It was an offline event where the participants physically played the conventional snakes and ladders game. The participants rolled the giant dice and moved across the snake and ladder board. The dice is given to those who answer the riddle correct else the change will be followed according to opportunity provided to them. The one reaching the final square (winning point) first was declared the winner. Trophies were distributed to the winners.

9. Winners:

Lalith	1st
Binesh Das	2nd
Sachin Kumar	3rd



Event 6

- Name of the Event : Shimmer**
- Head of Event :** Vineet, Ashwin
- Coordinator of Event :** Olivia
- Date :** 24th March 2023 (Round 1), 28th March 2023 (Round 2), 29th March (Round 3), 2nd April 2023 (Round 4)
- Venue :** CR5 (Round 2), Pandal (Round 4)
- No of Participants:** 1st Year B.Tech of NIT Meghalaya
- About the Event :**
- Brief Outcome of the Event :**

It was an event which gave an opportunity to students to prove themselves better in any genre of competition than others. This event was open only to the 1st year (B.Tech) students of NIT Meghalaya.

- This event consisted of 4 rounds.
 - Round 1:** This was a written round where participants answered the questions.
 - Round 2:** This round was a Group Discussion round where the participants were given a topic for discussion on the spot.
 - Round 3:** This round was a Personal Interview.
 - Round 4:** The finalists were shortlisted for the 4th round. In this round, the contestants demonstrated their chosen talent to the organizers.

- Judging Parameters
 - ◆ In round 1, participants were judged based on their written answers.
 - ◆ In round 2, participants were judged based on their communication skills, attitude, way of presenting views, listening power.
 - ◆ In round 3, participants were judged based on their critical thinking, personality, communication skills and other skills.
 - ◆ In round 4, participants were judged on their chosen skill.

The winners of the final round were crowned with Mr. and Ms. Shimmer titles and certificates were distributed.

9. Winners:

MR Shimmer is Satyam Kumar MS Shimmer is Hriti Chakraborty



Event 7

1. **Name of the Event :** Open Mic
2. **Organizing Section :** Literary Club
3. **Date :** 2nd April 2K23
4. **Venue :** Lecture Hall
5. **No of Participants:** NIT Meghalaya
6. **About the Event :**

Open Mic was a Literary Club event. It was an event where participants expressed their views/ideas or anything that was in their minds that they wanted to share with the audience. The participants expressed their thoughts in prose, poem, storytelling, stand-up comedy, jokes, quotes, Etc. The event provided the students with exposure and confidence to Public speaking and helped them socialize more while sharing their views.

7. **Winners:**

1ST - ABHAY VERMA
 2ND - CHIRONJEEB
 3RD - SAMIKSHA DEB



Event 8

1. **Name of the Event :** Treasure Hunt (Departmental Event)
2. **Head of Event :** Prashasti, Ganesh
3. **Coordinator of Event :** Keneth
4. **Co - coordinator of theEvent :** Gunjan
5. **Date :** 27th March 2023 (Round 1), 30th March 2023 (Round 2), 2nd April 2023 (Round 3)
6. **Venue :** Lecture Hall
7. **No of Participants:** NIT Meghalaya
8. **About the Event :**

Treasure Hunt was a departmental event where players searched for hidden objects by following a trail of clues. It included paper scavenger hunt, nature scavenger hunt, photography, scavenger hunt etc. This event consisted of total of three rounds:

1. Intelligence testing
2. Scavenger hunt
3. Ultimate scavenger hunt

9. **Team size :**

B.Tech 1st year- 5 members B.Tech 2nd year- 4 members
 B.Tech 3rd and 4th year - 3 members Ph.d, M.Sc and M.Tech-
 3 members

Trophies and Certificates were given to the Top 3 Winners.

9. **Winners:**

1st Bipasha Saikia 2nd . Saurav Paul 3rd. Kunal Singh



Event 9

1. **Name of the Event :** Step Up
2. **Organizing Section :** Dance and Drama Club
3. **Head of Event :** Rithika,Vishal Kumar
4. **Coordinator of Event :** Sameer
5. **Date :** 2nd- 3rd April 2K23
6. **Venue :** Pandal
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

Step UP Dance was an INTER INSTITUTE DANCE COMPETITION where teams from other institutes across the country took part. In the event, participants showcased their dancing skills and competed against one another. For these events, auditions were conducted. Step Up was an event conducted by Dance and Drama Club. It was an Inter- NIT event and students from different colleges and countries were given the opportunities to participate and showcase their dancing skills.

Teams formed consisted of a minimum of 3 for group performance, and 2 for duet.

Rules for Step Up :

Time limit was :

SOLO – 5 min (max of 10 sec will be given as the relaxation time)

DUET AND GROUP- 8 min

Marks was deducted in case the performance exceeds the mentioned limits. Also if the performance time exceeded by 20 sec, it directly led to disqualification.

The Judging criteria followed was :

- Choreography- 35%
- Justification with given emotion - 20%
- Attitude- 20%
- Stage Utilization- 15%
- Crowd Response- 10%

9. Winners:

STEP-UP (Category-SOLO)		
Position	Name	College Name
1st	Trishna Rajbongshi	NITM
2nd	Kshitij Gupta	NIFT
3rd	Chikasin Isaiah N Sangma	NITM
STEP-UP (Category-DUET/GROUP)		
Position	Team Name	College Name
1st	Team NIFT	NIFT
2nd	The Bois Group	St. Anthony's College
3rd	Monster Group	NITM



Event 10

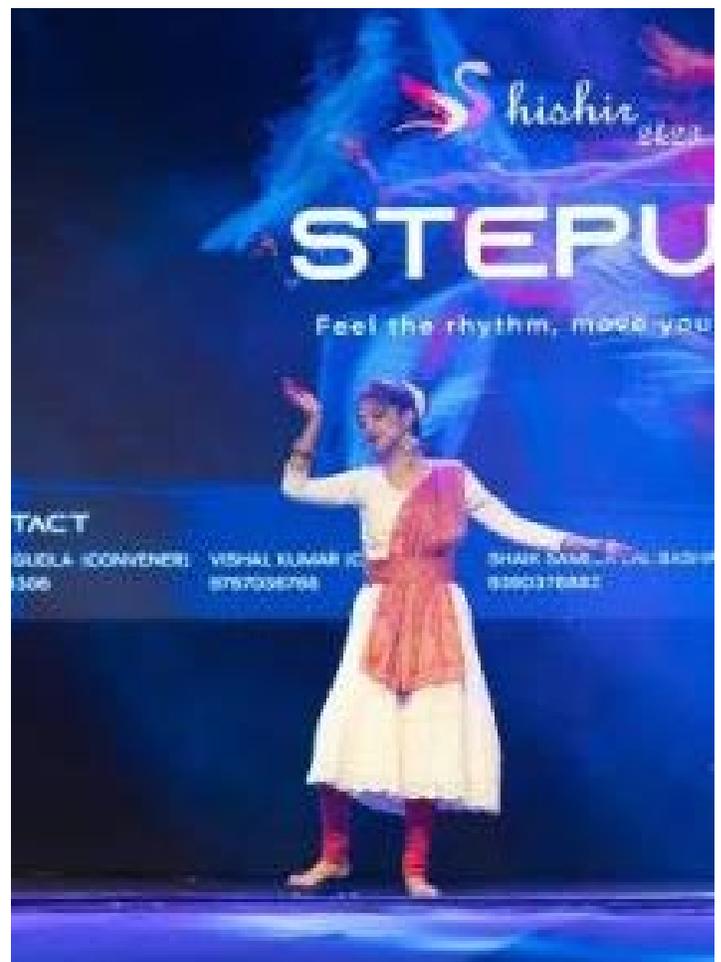
- Name of the Event :** Traditional Dance
- Organizing Section :** Dance and Drama Club
- Head of Event :** Rithika,Vishal Kumar
- Coordinator of Event :** Sameer
- Date :** 2nd- 3rd April 2K23
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

Traditional Dance was an INTER INSTITUTE Traditional DANCE COMPETITION where teams from other institutes across the country took part. In the event, participants showcased their dancing skills and competed against one

another. For these events, auditions were conducted for selection purposes.

9. Winners:

Traditional Dance Competition (Category-SOLO)		
Position	Name	College Name
1st	Trishna Rajbongshi	NITM
2nd	Kshitij Gupta	NIFT
3rd	Chikasin Isaiah N Sangma	NITM
Traditional Dance Competition (Category-DUET/GROUP)		
Position	Team Name	College Name
1st	Team NIFT	NIFT
2nd	The Bois Group	St. Anthoy's College
3rd	Monster Group	NITM



Event 11

- Name of the Event :** Jam Session (Day 2)
- Date and Timings :** 2nd April 2K23 from 6 pm to 8 pm
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya

5. About the Event :

Sabali Band have come to NIT Meghalaya and showed the great performance they are enjoying a lot with crowd and the band is overall amazing.



Day 3 :

Event 1

- Name of the Event :** Musical Chairs (Departmental Event)
- Organizing Section :** Dance and Drama Club
- Head of Event :** Riti, Nikhil
- Coordinator of Event :** Shashank
- Date :** 3rd April 2K23
- Venue :** Mini- Auditorium
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

It was a departmental event. Heads of the event played the music, and players or participants had to walk around the perimeter of the chair circle. When the music stopped, everyone had to sit on the chair. The participant who could not sit on any chair after the music stopped was eliminated. The chair number was reduced one by one after each round. The event continued until only three people were left. Trophies were distributed to the winners.

9. Winners:

1st. Bhawana Maurya 2nd. Anjali Kashyap 3rd. Ashutosh Rai



Event 2

1. **Name of the Event : PC Gaming/Mobile Gaming** (Departmental Event)
2. **Head of Event :** Rohit Patidar, Shashank, Pintu, Vicky
3. **Coordinator of Event :** Akash Singh, Kumar Gaurav
4. **Co - coordinator of theEvent :** Harsh Parashar
5. **Date :** 3rd April 2K23
6. **Venue :** Pandal
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

Three Gaming Events were conducted and were divided into Mobile and PC gaming categories :

1. Free Fire
2. Mini Militia
3. Stumble Guys

The game was played according to the rules mentioned in the rulebook.

9. Winners:

Free Fire Winners :

- 1ST - CO E-SPORTS - NITM
- 2ND - KILLER BOYZ - NITM
- 3RD - THE THUNDER - NITM

Mini Militia Winners :

- 1ST - SATYAJEET RAI - NITM
- 2ND - PHANNONG YOUNGKUK -NITM
- 3RD - BISHAL THAKUR - NEHU

Stumble Guys Winners :

- 1ST - KYNTUBHAH BAMON - NITM
- 2ND - ALVIN LANGSTIEH - NITM
- 3RD - VINEET MALEWAR - NITM



Event 3

- Name of the Event :** Panache
- Head of Event :** Shaim,Sweety
- Coordinator of Event :** Piyush sharma,Pratibha
- Co - coordinator of theEvent :** Joyanka Bai Passah,Sonam
- Date :** 3rd April 2K23
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

Panache was an event that portrayed the diversity of India as students of our Institute showcased areas of different states of India. In this event, students were given exposure and confidence to walk the Ramp with outfits that represented the diversity of Indian culture. The contestants were selected based on auditions and were judged on stage. The judges selected the top scorers based on their performance on the Ramp, and they will be further eligible for the questionnaire. The winners were declared as Mr. Panache and Ms Panache.

9. Winners:

Winners were declared on the basis of categories,special awards were also given and finally Ms.Panache and Mr.Panache were also declared on the basis of the points and questionnaire round.

Category wise Awards :

Bollywood	Girl	Sweety Merry Jyrwa Nongsiej
Formal	Girl	Supriya Neogi
	Boy	Shivam Pandit
Ethnic	Girl	Supriya Neogi
	Boy	Satyam Kumar Singh
Traditional	Girl	Iphiginia Jyrwa
	Boy	Tobelovely Lyngdoh Marshilong
Casual	Girl	Elaine Rich Iarisa Thangkhiew
	Boy	Richmondwell L Kalwing
Cosplay	Girl	Elaine Rich Iarisa Thangkhiew
	Boy	Vicky Hajong
Ballroom	Girl	Kabesa S Marak
	Boy	Binesh Das

Special Awards :

Category	Winners
Mr Smile	Anshu Das
Miss Smile	Iphiginia Jyrwa
Mr Rampwalk	Ashutosh Rai
Miss Catwalk	L. Komune
Mr Popular	Sojib Dutta
Miss Popular	Protiksha Hajong

Mr . Panache and Ms. Panache :

Mr Panache	Shivam Pandit
Miss Panache	Elveena Essa Nongkhlaw



Event 4

1. **Name of the Event :** Jam Session (Day 3)
2. **Date and Timings :** 3rd April 2K23 from 6 pm to 8 pm
3. **Venue :** Pandal
4. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya

5. About the Event :

This is the last day and it is a DJ night with Ravator. He played different remix hindi english song and also at last to cheer the NIT Meghalaya played a beautiful rimix song of Khasi Language and ending with Bhojpuri Songs.



Day 3

Closing Ceremony		Few Lines of the Speech
Speech by President,SAC	The speech was given by the President,SAC - Dr. Amit Kumar Paul.	Ladies and gentlemen, distinguished guests, and cherished members of the NIT Meghalaya community, as the President of the Student Activity Council, it fills me with immense pride and joy to stand before you at the conclusion of this unforgettable cultural fest. The sheer talent, dedication, and spirit showcased by our students have left an indelible mark on our hearts. I express my deepest gratitude to the organizing committee, faculty members, and volunteers for their tireless efforts in making this fest a grand success. Let the spirit of creativity and unity continue to flourish within us, inspiring us to reach new heights. Thank you all for being a part of this incredible journey
Speech By Dean,SW	The speech was given by Dean, SW - Prof. HarishChandra Das.	Dear students, faculty members, and esteemed guests, as the Dean of Student Welfare , I stand before you with immense pride and satisfaction as we come to the end of this spectacular cultural fest. The immense talent, passion, and dedication displayed by our students have been truly awe-inspiring. I extend my heartfelt appreciation to the organizing committee, volunteers, and all those who contributed to the success of this fest. May the memories created here continue to inspire and fuel our pursuit of excellence. Thank you all for making this fest a resounding success.

Closing Ceremony		Few Lines of the Speech
Speech by Chief Guest	The speech was given by the Chief Guest Smti Matsiewdor War Nongbri, IAS , who is currently serving as Secretary to the Government of Meghalaya.	Respected dignitaries, esteemed faculty, talented students, and esteemed guests, it is an honor to be standing before you as the Chief Guest at the culmination of this remarkable cultural fest. The exceptional talent, creativity, and cultural diversity displayed here have left an indelible impression on all of us. I commend NIT Meghalaya for organizing such a magnificent event and providing a platform for nurturing talent. Let the spirit of culture and art continue to thrive and inspire us in our future endeavors. Thank you all for a truly memorable experience.
Speech by Director	The speech was given by the Director, NITM .	Ladies and gentlemen, distinguished guests, and talented participants, as we come to the end of this exhilarating cultural fest, I stand before you with immense pride and gratitude. Your breathtaking performances, vibrant displays of art, and unwavering enthusiasm have truly showcased the essence of our institution. I extend my heartfelt thanks to the organizing committee, faculty members, and all those who contributed to the success of this event. Let the spirit of creativity and unity ignited here continue to inspire us in all our future endeavors. Thank you, and congratulations to everyone involved in making this fest an unforgettable experience.
Distribution of prizes to the Winners of various Events	Prizes were distributed accordingly.	
Closing Speech by Director	The speech was given by the Director, NITM .	Dear attendees, esteemed guests, and talented participants, as we come to the end of this captivating cultural fest, I stand here with a heart filled with gratitude and pride. Your incredible performances, infectious energy, and unwavering passion have made this event truly memorable. I would like to express my deepest appreciation to the organizing committee, faculty members, and volunteers who dedicated their time and efforts to make this fest a resounding success. Let the spirit of culture and creativity continue to inspire and unite us. Thank you all for being a part of this remarkable celebration.
Vote of Thanks by Vice President, - Cultural	The fest was concluded with a wonderful vote of thanks by the Vice President of Cultural, Dr. Biplab Kumar Debnath .	Ladies and gentlemen, esteemed guests, and beloved participants, as we draw the curtains on this mesmerizing cultural fest, I stand here to express our heartfelt gratitude. Your presence and participation have made this event a resounding success. We are grateful for your support, enthusiasm, and the unforgettable memories we have created together. Special thanks to our dedicated team, faculty members, and volunteers who worked tirelessly behind the scenes. Thank you for being a part of this remarkable journey, and we hope to see you again next year for an even grander celebration.



Departmental Winner ME



Departmental Runner Up CE & EE



Some Memorable Picture



Some Memorable Picture



COGNITIA 2022

The Technical Fest of NIT Meghalaya

Event Name : COGNITIA

Date : 5th - 7th November 2022

Introduction :

Cognitia is the Annual Technical Fest NIT Meghalaya. It gives a platform to young brains to showcase their innovative ideas and compete with their peers. The main objective of the program is to promote innovative thinking and practical skills through real life technological projects.

Cognitia 2022 was held from 5th to 7th november and featured a wide range of activities and events which includes Robotics, Coding, Gaming, Departmental, Photography and Literary Club events.

Students of other NITs, NEHU and universities from all around the Nation were invited to participate in Co,the cultural fest of NIT Meghalaya.



Fig. Dr Lajja Ram Bishnoi Chief Guest

Day 1 :

Inauguration		Few Lines of the Speech
Welcome Speech	A welcome Speech was given for the Chief Guests and Honorable Guests .	Welcome to Cognitia ,the ninth cultural fest of the NIT Meghalaya . It is our pleasure to introduce our chief guest Dr. Lajja Ram Bishno ,who has graciously accepted our invitation to join us today. We welcome honorable Guests to the Ninth Technical Fest of NIT Meghalaya.
Lightning of Lamp	The Chief Guest and Honorable Guests appreciated and welcomed the goddess of wisdom for her blessings for Shishir by kindling the lamp.	
Speech by President,SAC	The speech was given by the President,SAC - Dr. Amit Kumar Paul .	Cognitia 2022 is organised after 2 years. COVID 19 have restricted us but not the knowledge. Participant are the future of Cognita 2022 and let fruitful outcome will come.
Speech By Dean,SW	The speech was given by Dean, SW - Prof. Harish Chandra Das .	Cognitia 2022 contain total of 35 events which is organised by the different clubs.
Speech by Chief Guest	The speech was given by the Chief Guest .	Thrilled about remarkable Cognita 2022 technical event, surrounded by brilliant minds and groundbreaking innovations and given best wishes to the participation.
Speech by Director	The speech was given by the Director,NITM .	Cognita is a platform where researchers, engineers, entrepreneurs, and enthusiasts can come together to exchange ideas, share their latest discoveries, and inspire one another
Vote of Thanks by Vice President,Technical	The fest was concluded with a wonderful vote of thanks by the Vice President of Technical, Dr. Bunil Kumar Balabantaray .	Cognitia 2022 is a great event for exchanging of knowledge different small bot are made to make this event successful. Best wishes to all.
Declaration of Fest Open	The fest was declared open by the Director,NITM .	

After declaring the fest as open , the following events were conducted in Cognitia 2022 :

Coding Events :

Event 1

- Name of the Event :** Hackmantra
- Organizing Section:** Coding Club
- Coordinator of Event :** Anubhav Dixit, Pranav , Meenakshi
- Co - coordinator of theEvent :** Divyasree, Akshat, Kalpesh
- Date :** 5th November 2022
- Venue :** Lecture Hall
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

Students had to develop an Interactive UI and deploy applications which solved the problems faced by people across India in their day to day life or any emergency situation faced by the people.

JUDGING PARAMETERS

- End To End Functionality
- Interactive UI and deployed application
- Innovation: Based on the originality and creativity of the solution.
- Approach: The outline given by the participants to execute the solution to the problem statement (flow-diagram).
- Presentation: The video solution should describe all the technicalities.

- Clean Code: How arranged your directory structure is and how easy to understand your code is.

9. Winners :

1st.THE BOYS

Samuel Khongthaw
Rishabh Rawat
Harsh Parasha

2nd.AAROHAN_KNV

Keshav Krishna
Nikhil Kumar
Vasundhara Singh

3rd.TECHNOPHILERS

Nasaram Hemanth Budi
Manoj Kumar
aramatta Poorna



Event 2

- Name of the Event :** CAT (Code Against Time)
- Organizing Section :** Coding Club
- Coordinator of Event :** Dorababu, Akhilesh Kumar
- Co - coordinator of the Event :** Amal, Karthik
- Date :** 5th - 6th November 2022
- Venue :** New CC(Round 1 & Round 2)
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

It was a coding round in which the students were given limited time for quiz (Round 1) and coding round (Round 2) which consisted of competitive programming questions.

9. Winners :

1st. Akshayan M (B21CS032)

2nd. Shubhavi Kukreja (B21CS018)

3rd. Roshan Kumar Sah (B21CS021)



Robotics Events :

Event 1

1. **Name of the Event :** Roborumble
2. **Organizing Section:** Robotics Club
3. **Coordinator of Event :** Majjari Ganesh, Ritik Lote
4. **Co - coordinator of theEvent :** Embhahlang Biam ,Mayo Kaping ,Dara Sai Kuamr
5. **Date :** 5th - 6th November 2022
6. **Venue :** Pandal
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

It was an event conducted for the students of NIT Meghalaya and students of other NITs and Universities. In this event, teams fight with their bots in the arena with the winning bots declared as the winner. The winning teams were awarded certificates and cash prizes.

9. Winners :

1st.OP DUO

1. Shubham Ray
2. Kumar Gaurav

2nd.EAGLETECH

1. Abhishek Kumar
2. Pratibha kumari

3rd.LBC

- Narendra Kumar
Himanshu kashyap
Sojib Datta,
Manish Bishnoi
Shreya Poddar
Shubhodeep Sinha



Event 2

1. **Name of the Event :** Goal Against Time (GAT)
2. **Organizing Section :** Robotics Club
3. **Coordinator of Event :** Ayushi Vats, Harshit Sagar
4. **Co - coordinator of theEvent :** Akash Singh, Kemte Koch, Nadegouni Sandeep
5. **Date :** 5th & 7th November 2022
6. **Venue :** Pandal
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

It was an event conducted for the students of NIT Meghalaya and students of other NITs and Universities. In this event, teams had to design a wireless bot controlled by phone or

remote and the teams aiming maximum goals and having the maximum accuracy in minimum time were declared as the winner. The winning teams were awarded certificates and cash prizes.

9. Winners :

1ST.WIRED

Ameya Patil, Harsh Parashar ,Nirupan Jagnekar, Gaurav Polai, Koninika Tarafdar, Sonam Bharti

2ND.VECTOR

Surakattula Sri vadan, M Sandeep Kumar Gupta, Sridharshini B, Pulivarthi Olivia, El reka, Balijireddi Harshavardhan Naidu, Mammila Jahnvi Sai

3RD.HAJMOLA

Akash Singh, Kemte Koch, Piyush Sharma, Manoj Sehota



Event 3

- Name of the Event :** Maze Runner
- Organizing Section :** Robotics Club
- Coordinator of Event :** Ritik Lote, Taramatta Poorna Pramod
- Co - coordinator of the Event :** Gopal Hajong ,M Sandeep Kumar Gupta, Lapynhunshisha Lyngdoh Mawlong
- Date :** 5th & 6th November 2022
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

It was an event conducted for the students of NIT Meghalaya and students of other NITs and Universities. In this event, teams had to design a bot with specified dimensions which

can be self driven which specially comprises ultrasonic sensors to detect the presence and absence of maze wall and keep the bot on track to solve the maze. The bot that will reach the finish point of the maze in shortest possible time with maximum points will be declared the winner. The winners were awarded certificates and cash prizes.

9. Winners :

1ST. ENIGMAS

Pardhu Mattupalli Anal proboho roy

2ND. FANTASTIC 6

L Ronald Kilio, Mayo kaping, Rahul Shukla, Amal Shibu, Kyle Ignatius K Sangma

3RD. TACTIC TITANS

Karanam karthik, Sheik Azarath, Vali Siddana, Raviteja Karimi, tarun teja, Lakhinana sri Kashyap, Samakoti Charan, Teja Reddy



Event 4

- Name of the Event :** Pick and Place
- Organizing Section :** Robotics Club
- Coordinator of Event :** Vineet Malewar, Vishal Kumar
- Co- Cordinator of theEvent :** Gopal Rai, Sammitre Kyndiah, Palak Gupta
- Date :** 5th & 7th November 2022
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

It was an event conducted for the students of NIT Meghalaya and students of other NITs and Universities. In this event, teams had to design a bot with specified dimensions which can be self driven which specially comprises of ultrasonic sensors to detect the presence and absence of maze wall

9. Winners :

1st.A.I.M.

Diyasha Mahanta, Payal Singh, Jatin Mishra, Mutyala Kalyani, Tanglaysia N sangma

2nd.ROBUSTA

Akramul Islam, Parvej Alam, Anjani Kumar, Protiksha Hajong, Refi Vashti Islari, Harshit Dhage

3rd.TEAM WIRED

Ameya Patil, Harsh Parashar, Nirupan Jagnekar, Gaurav Polai, Koninika Tarafdar, Sonam Bharti



Event 5

- Name of the Event :** Robodiction
- Organizing Section :** Robotics Club
- Coordinator of Event :** Amish Anand, Satvik Singh
- Co - coordinator of theEvent :** Amit Kumar, Randheer Raman, Shaik Lal Sameer Basha ,Samyakh Meshram
- Date :** 5th & 6th November 2022
- Venue :** Mini - Auditorium
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

In the technical event, a robot, wired or wireless, was designed by the students with specified dimensions. The task assigned to the students was to make the robot operable manually and enable it to travel through all turns of the track. The objective was for the robots to complete the specified tasks in the least amount of time. The team with the maximum points was declared the winner. The winning team was awarded with trophies and cash prizes.

9. Winners :

1ST.EAGLE TECH

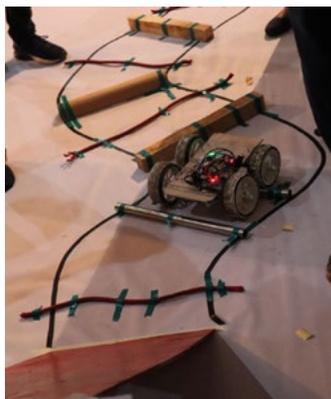
Abhishek kumar

2ND.MEGAOPTIMUS

Gopal hajong, Anthony sangma

3RD.WIRED

Ameya patil, Nirupan kishor ,jagnekar Gourav Polai, Harsh parashar, koninika, sonam



Literary Events :

- Name of the Event :** Tech Quiz
- Organizing Section :** Literary Club
- Head of Event :** Achintya Chaudhary, Gaurav Polai
- Date :** 5th November 2022
- Venue :** CR5
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

This was an Inter Institute quiz competition based on the theme of "Technology and Innovations". It had two qualifying rounds: Alpha and Beta. The winning teams were awarded certificates and cash prizes.

8. Winners :

1st. Roshan Kumar

2nd. Ameya Patil

3rd. Pardu



Departmental Events :

Event 1

- Name of the Event :** Element of Surprise (Departmental Event)
- Organizing Section :** CSE Department
- Coordinator of Event :** Antothijah Bhoi, Bhawana Maurya
- Co - coordinator of the Event :** Sheik Azarath Vali
- Date :** 5th November 2022
- Venue :** NIT Meghalaya Campus
- No of Participants:** NIT Meghalaya
- About the Event :**

This was a CSE departmental event. The event consisted of 3(three)-Rounds:-

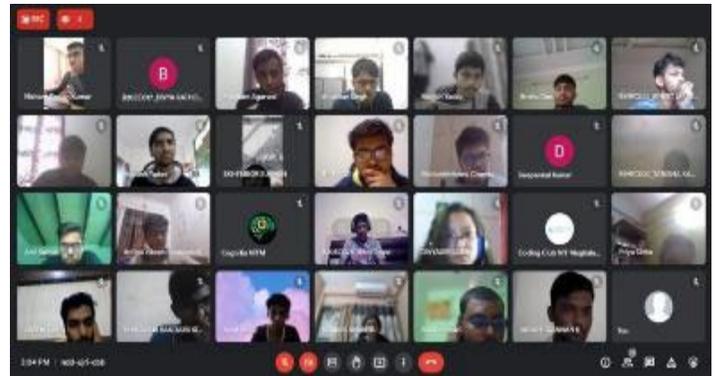
- Round One: Beat the time challenge.
- Round Two: Beat your opponent's challenge.
- Round Three: Puzzle solving.

9. Winners :

1st. Unique Coders: Shreya Poddar, Akshayan M

2nd.Hustlers: Yash Raj Gupta, Achintya Chaudhary

3rd. Beatles: Raj Kedia, Somya Sonakshi



Event 2

- Name of the Event :** Mega Quiz (Departmental Event)
- Organizing Section :** CSE Department
- Coordinator of Event :** Antothijah Bhoi, Bhawana Maurya
- Co - coordinator of the Event :** Sheik Azarath Vali
- Date :** 5th November 2022
- Venue :** CR5
- No of Participants:** NIT Meghalaya
- About the Event :**

It is a group event involving two members. The quiz consisted of four different topics: GK, RIDDLES, BASICDSA, and APTITUDE. The first two topics were in oral mode, and for the last two topics, questions were given in written form as MCQs on paper.

9. Winners :

1st. Brahmos: Siddana Ravi, J Ajay Reddy

2nd. John from Polo: Rahul Shukla, Samuel Khongthaw

3rd. Bhagwan Bharose: Samarth Verma, Aditya Vikram Somvanshi



Event 5

- Name of the Event :** Tech Pravah (Departmental Event)
- Organizing Section :** ECE Department
- Coordinator of Event :** Jasthi Monika, Anjali Kashyap
- Co - coordinator of theEvent :** Rupa Kumari
- Date :** 5th November 2022
- Venue :** Computing Lab
- No of Participants:** NIT Meghalaya
- About the Event :**

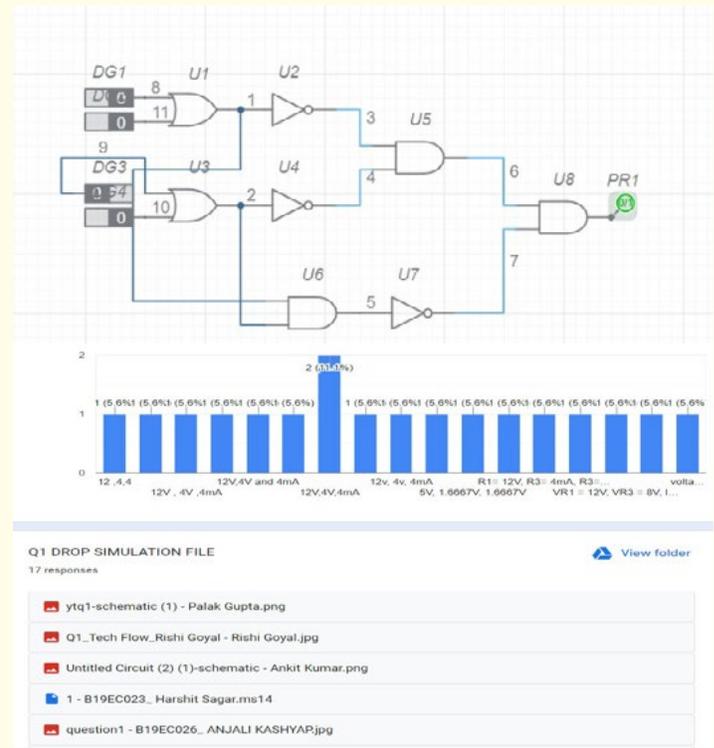
In Tech Pravah students were given the task to complete the circuit flow. It was based on circuit completion; error detection; circuit solving and circuit formation. Students were given problems to solve in the required time.

- Winners :**

1st. Somya Sonakshi

2nd. Swejal Rahate

3rd. Refi Vashti Islari



Event 6

- Name of the Event :** Electrisc (Departmental Event)
- Organizing Section :** ECE Department
- Coordinator of Event :** Jasthi Monika, Anjali Kashyap
- Co - coordinator of theEvent :** Rupa Kumari
- Date :** 5th November 2022
- Venue :** CR7
- No of Participants:** NIT Meghalaya
- About the Event :**

It was a fun-filled technical event. It was a snake and ladder game where participants were given a chance to roll the dice whenever they got the correct answer. This event was based on the topics of basic electronics, network analysis, signals and systems, electronic devices, analog and digital circuits, control systems, and electromagnetic.

- Winners :**

1st. Gannu Abhijith Sai

2nd. Avinash Renukunta

3rd. Raj Kedia



Event 7

- Name of the Event :** CiviQ (Departmental Event)
- Organizing Section :** CE Department
- Coordinator of Event :** Ritesh, Shiwani Kumari
- Co - coordinator of theEvent :** Amit Kumar Patel
- Date :** 5th & 6th November 2022
- Venue :** CR8
- No of Participants:** NIT Meghalaya
- About the Event :** It is a quiz competition from the department of civil engineering in the form of MCQs .It was held in 2 rounds.
- Winners :**

1st.Aniket Kumar

2nd.Shweta Singh

3rd.Yash Raj Gupta



Event 8

- Name of the Event :** React (Departmental Event)
- Organizing Section :** Chemistry Department
- Coordinator of Event :** Anchal Sharma,Charan Kumar
- Date :** 5th-6th November 2022
- Venue :** CR8
- No. of Participants:** NIT Meghalaya
- About the Event :**
This was an event from the Department of Chemistry conducted in 2 rounds. It was a quiz with 30 questions and the participant having the highest marks was declared the winner.
- Winners :**

1st.Avinash Renukunta

2nd.Kundan Kumar

3rd.Nitish Modi



Event 9

- Name of the Event :** Electro Mind (Departmental Event)
- Organizing Section :** EE Department
- Coordinator of Event :** Pravendra Pratap Singh, Roushan Kumar
- Co - coordinator of the Event :** Piyush Sharma
- Date :** 5th-6th November 2022
- Venue :** CR14
- No. of Participants:** NIT Meghalaya
- About the Event :**

This event was conducted in 2 rounds. In the 1st round some images were shown on the projector and the participants were asked to identify and write the name on a paper. the 2nd round was based on laboratory skills where participants had to verify some theorems.

9. Winners :

1st. Bavana Sankar S

2nd. Avneesh Kumar

3rd. Kumar Gaurav



1.

Event 10

- Name of the Event :** Tech Electra (Departmental Event)
- Organizing Section :** EE Department
- Coordinator of Event :** Pravendra Pratap Singh, Roushan Kumar
- Co - coordinator of the Event :** Piyush Sharma
- Date :** 5th-6th November 2022
- Venue :** CR14
- No. of Participants:** NIT Meghalaya
- About the Event :**

This event was conducted in 2 rounds. 1st round was a quiz based on basic electrical and electronics consisting of 30 questions and participants were allotted 1 hr time to answer the questions. And the 2nd round was a debate based on recent topics in Electrical

9. Winners :

1st. Sonam Bharti

2nd. Anjani Kumar

3rd. Akash Singh



Day 2 & Day 3 :

Coding Events :

Event 1

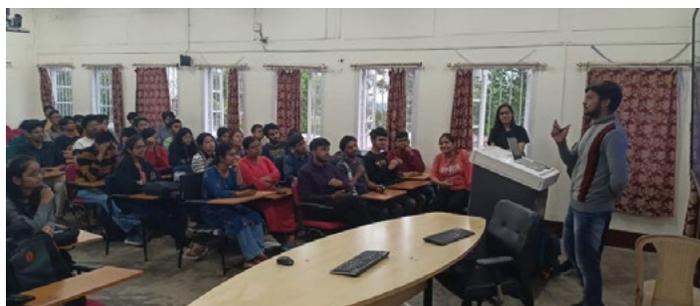
- Name of the Event :** NITM Hunt
- Organizing Section :** Cybersecurity Department
- Coordinator of Event :** Viraj , Rohit Patidar
- Co - coordinator of theEvent :** Chonsram
- Date :** 6th November 2022
- Venue :** New CC
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
It was Capture the Flag Event in which the students had to find the flag using given clues and using the knowledge of cyber security concepts.

9. Winners :

1st.THE BOYS: Samuel Khongthaw, Rishabh Rawat, Harsh Parashar

2nd.AAROHAN_KNV: Keshav Krishna, Nikhil Kumar, Vasundhara Singh

3rd.TECHNOPHILERS: Nasaram Hemanth Budi, Manoj Kumar, Taramatta Poorna Pramod



Event 2

- Name of the Event :** Code Utsav (Remote)
- Organizing Section :** Coding Club
- Coordinator of Event :** Ritik Mani Yadav, Keshav Krishna
- Co - coordinator of theEvent :** Nishant, Samuel, Kalpesh
- Date :** 6th November 2022
- Venue :** NEW CC
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
This was a coding contest based on Data Structures , Algorithms and Problem Solving. Students were given 5-7 problems to solve in 2 hours.

9. Winners :

1st.Aditya Vikram Somvanshi

2nd.Nikhil Kumar

3rd.Akshayan M



Event 3

1. **Name of the Event :** Cog- Blog (Remote)
2. **Organizing Section :** Coding Club
3. **Coordinator of Event :** Manoj Kumar, Avishek Paul
4. **Date :** 6th November 2022
5. **Venue :** Lecture Hall on platform Hashnode
6. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
7. **About the Event :**

A Technical Blog Writing Competition event under Cognitia 2022. The participants in this event were provided with a variety of coding-related topics from different domains, from which they must select one topic and write an article about it on the hashnode platform and post it.

8. **Winners :**

1st.Hemanth Nasaram

2nd.Vasundhara Singh

3rd.Abhijith Gannu



Event 4

1. **Name of the Event :** Debate Night
2. **Organizing Section :** Coding Club
3. **Coordinator of Event :** Anubhav Dixit, Avishek Paul
4. **Co - coordinator of theEvent :** Akshat Jain, Divyasree
5. **Date :** 6th November 2022
6. **Venue :** Conference Room
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

This event was an opportunity for students to showcase their wits and hold over the topic. It consisted of a team of two members, one supporting the motion and one against it. Each member had presented their case for why they think they had the appropriate solutions in an orderly and intelligent manner.

8. **Winners :**

TEAM AZADI : Ananya Manohar, Parthiv Das

TEAM ECHOES: Vasundhara Singh, Sonam Barthi
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BEST SPEAKER: Parthiv Das



Event 5

- Name of the Event :** Catch me if you can
- Organizing Section :** Coding Club
- Coordinator of Event :** Dorababu, Avishek Paul
- Co - coordinator of theEvent :** Ananya , Divyasree
- Date :** 7th November 2022
- Venue :** New CC
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
This was a debugging contest in which students have to debug the given program based on their knowledge on Functional Programming, Data Structures, OOPS.

9. Winners :

1st. Akshayan M

2nd. Yash Raj Gupta

3rd. Vineet Malewar



Event 6

- Name of the Event :** Andha-Vishwas
- Organizing Section :** Coding Club
- Coordinator of Event :** Meenakshi , Tarun, Shivankar
- Co - coordinator of theEvent :** Nishant, Samuel
- Date :** 7th November 2022
- Venue :** PANDAL
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
This was a team coding contest where one teammate will be blindfolded and the other's hands were tied.
Every team was given 3 problems to solve in 30 minutes.

9. Winners :

WARRIORS: Kalpesh Vishwakarm, Harshit Dhage

JSR: Aditya Vikram Somvanshi, Vasundhara Singh

UNIQUE_CODERS: Akshayan M, Shreya Poddar



Robotics Events

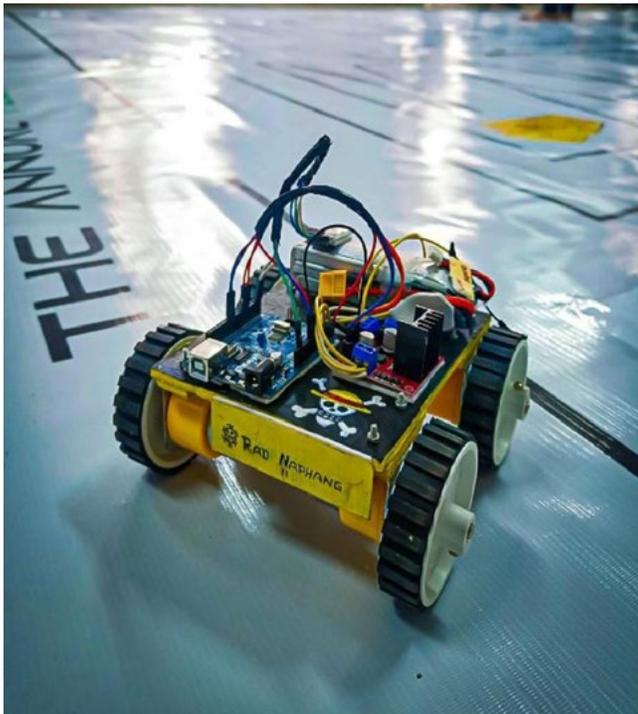
Event 1

1. Name of the Event : Race Against Time(RAT)
2. **Organizing Section:** Robotics Club
3. **Coordinator of Event :** Hitesh Verma, Prudhvi Naveen Kumar
4. **Co - coordinator of theEvent :** Abhishek Kumar, Balijireddi Harshavardhan Na, PrathibhaKumari
5. **Date :** 5th - 6th November 2022
6. **Venue :** Drawing Hall
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

As this was a racing competition in which the bot made by the students finished the race in the shortest amount of time and with most consistency was declared as the winner. The winning teams were awarded certificates and cash prizes.

9. Winners :

1ST.NANO TROJAN	2ND. SHAPHRANG	3RD.VECTOR
1. Gunjan kumar	1. Alderliefest Pyrtuh	1. Surakattula Sri vadan
2. Ashwini Singh	2. Betdahunlin Sohkhia	2. M Sandeep Kumar Gupta
3. Nitish modi	3. Da Oo Teiki Maya Garod	3. Sridharshini B Pulivarthi
4. Aditya KUMAR	4. Banlamphang Kharnaioir	4. Olivia El reka
5. Saket Pratap singh	5. Freshmi Shylla	5. Balijireddi Harshavardhan Naidu
6. Vasundhara singh	6. Freddy John Dkhar	6. Mammila Jahnvi Sai



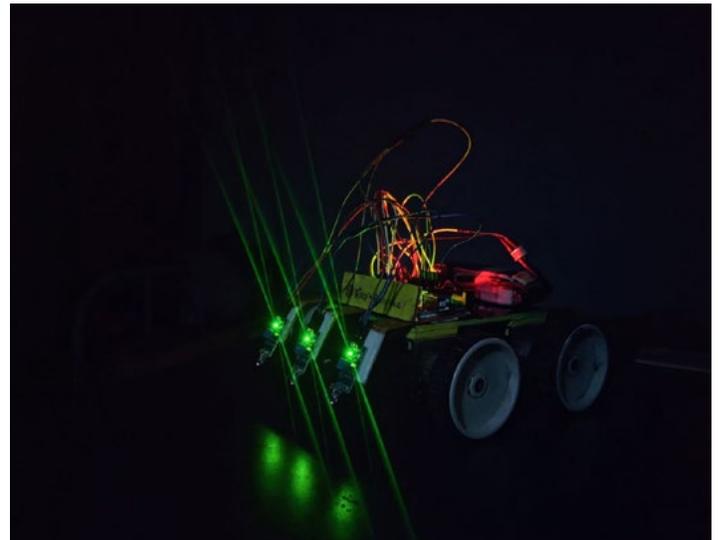
Event 1

1. **Name of the Event :** Line Following Robot (LFR)
2. **Organizing Section:** Robotics Club
3. **Coordinator of Event :** Lalith Datta Konda, Shashank Kumar
4. **Co - coordinator of theEvent :** Kumar Gaurav, Aditya Vikram Somvanshi, Divya Rathore
5. **Date :** 5th - 6th November 2022
6. **Venue :** CR11
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**
In this event participating teams had to design an autonomous bot which would follow the black line and finish the track with maximum accuracy in minimum time . It was conducted

in two phases: Prelims and Finals. The winning teams were awarded certificates and cash prizes.

9. Winners :

1ST.RAD NAPHANG	2ND.TEAM COMRADE	3RD.TACTIC TITANS
1.Wailadmi S Manner	Shaik Lal Sameer Basha Perla Charan Kumar	1. Karanam karthik
2.Preciousstar Warjri		2. Sheik Azarath Vali
3.Arbanshongdor Shadap		3. Siddana Raviteja
4.Wanrapbok R Kharshandi		4. Karimi tarun teja
5.Kangbila Quina P		5. Lakhinana sri
6.Marbhahki Laloo		6. Kashyap Samakoti
		7. Charan Teja Reddy



Event 3

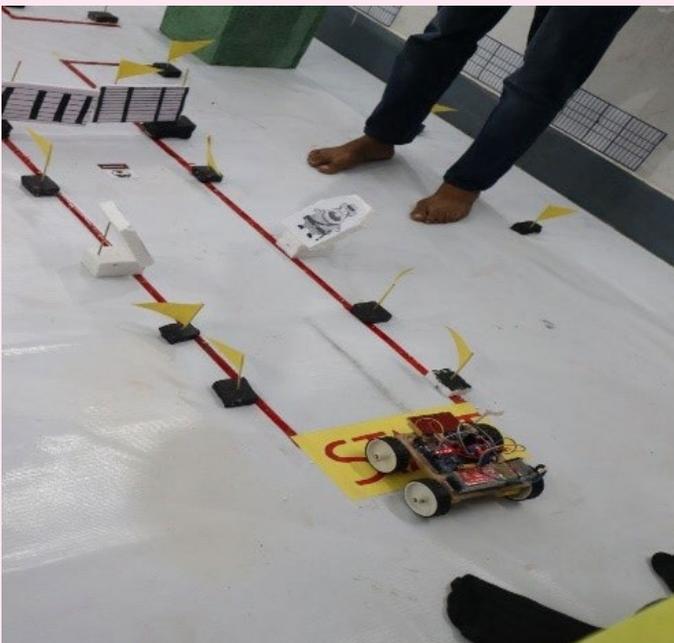
1. **Name of the Event :** Prison Breakout
2. **Organizing Section :** Robotics Club
3. **Coordinator of Event :** Pintu Bordoloi, Jayashree Bhattacharjee
4. **Co - coordinator of theEvent :** Samarth Varma, Malla Charan, Isha Pal
5. **Date :** 6th & 7th November 2022
6. **Venue :** CR12
7. **No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
8. **About the Event :**

In this event participating teams had to design a wireless bot with specified dimensions. The task was to clear the obstacles

on the path and reach the final point in minimum time. The winning teams were awarded certificates and cash prizes.

9. Winners :

1ST.SHA PHRANG	2ND.RAD NAPHANG	3RD.TACTIC TITANS
1. Alderliest Pyrtuh	1. Wailadmi S Manner	Karanam karthik
2. Betdahunlin Sohkhia	2. Preciousstar Warjri	Sheik Azarath Vali
3. Da Oo Teiki Maya Garod	3. Arbanshongdor Shadap	Siddana Raviteja
4. Banlamphang Kharnaioir	4. Wanrapbok R Kharshandi	Karimi tarun teja
5. Freshmi Shylla	5. Kangbila Quina P	Lakhinana sri
6. Freddy John Dkhar	6. Marbhahki Laloo	Kashyap
		Samakoti Charan Teja Reddy



Event 4

- Name of the Event :** Techstorm
- Organizing Section :** Robotics Club
- Coordinator of Event :** Harshit Sagar, Ringki
- Co - coordinator of theEvent :** Kenneth Well Born Basaiawmoit ,Krishti Singhania
- Date :** 6th -7th November 2022
- Venue :** Lecture Hall
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

Techstorm, an esteemed technical fest, organized a captivating event that encompassed multiple rounds. The event commenced with an engaging quiz round, where participants demonstrated their knowledge about Arduino. Following the quiz round, the second round challenged the participants to construct innovative bots based on specific conditions provided.

To add to the excitement, Techstorm offered not only trophies but also attractive cash prizes to the winners of the event. This

incentive motivated participants to showcase their skills and compete fiercely for the top positions.

9. Winners :

1ST.HAJMOLA	2ND.RAM BHAROSE	3RD.TEAM WIRED
1. Akash Singh	1. Samarth Verma	1. Ameya Patil
2. Kemte Koch	2. Rupa Kumari	2. Harsh Parashar
3. Piyush Sharma	3. Kunal Singh	3. Nirupan Jagnekar
4. Manoj Sehota	4. Aditya Somvanshi	4. Gaurav Polai
	5. Ankit Kumar	5. Koninika Tarafdar
	6. Divya Rathore	6. Sonam Bharti



Event 5

- Name of the Event :** Trade Titans
- Organizing Section :** Robotics Club proposed by IIM Shillong
- Coordinator of Event :** Tanisha Kant, Gabil Momin
- Co - coordinator of theEvent :** Utkarsh Ranjan, Arilam Kyndiah
- Date :** 6th November 2022
- Venue :** Lecture Hall
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**

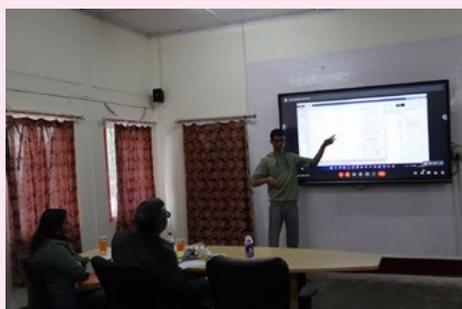
It gives an opportunity to students to showcase their ideas and turn them into ventures, as well as scale up existing ventures.

It was a SHARK tank cum Entrepreneurial ideas competition where students were allowed to pitch in their innovative ideas in front of audience and entrepreneurs. The winning teams were awarded certificates and cash prizes.

Judges are from IIM Shillong.

9. Winners :

1st.GEM:	2nd.PROBABLE:	3rd.ROBUSTA:
1. Geyang Ngukir (B19ME023)	1. Alok Dwivedi (B19ME011)	Anjani Kumar (B21EC001)
2. Manish	2. Sandeep Kumar Singh (B19ME027)	
3. Sharma (P22ME014)	3. Debayan Ghosh (B19ME002)	



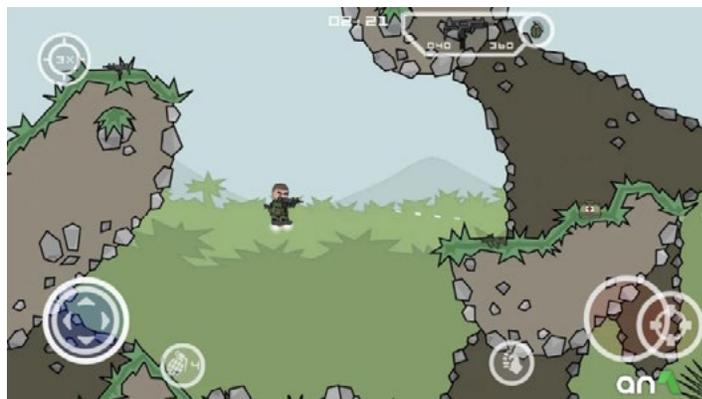
Gaming Events :

Event 1

- Name of the Event :** Mini Militia
- Organizing Section :** Gaming
- Coordinator of Event :** Vicky Hajong
- Co - coordinator of theEvent :** Yash Yadav
- Member :** Niloy
- Date :** 5th & 6th November 2022
- Venue :** CR2
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
This was a mobile gaming tournament. Mini Militia is a tactical third person shooting game. Players securing 1st,2nd and 3rd positions were awarded certificates and cashprizes.

10. Winners :

1st Shaim Kibria	2nd Phannong Yongkuk	3rd Ankit Kumar
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Event 1

- Name of the Event :** Valorant
- Organizing Section :** Gaming
- Coordinator of Event :** Rohit Patidar
- Co - coordinator of theEvent :** Nikhilesh Thakur
- Member :** Niloy
- Date :** 5th-7th November 2022
- Venue :** Pandal
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
It is a free to play 1st person tactical hero shooting pc game.It was hosted in 2 phases: Qualifiers(Online) and Playoffs(Offline) . Players securing 1st, 2nd and 3rdpositions were awarded certificates and cash prizes.



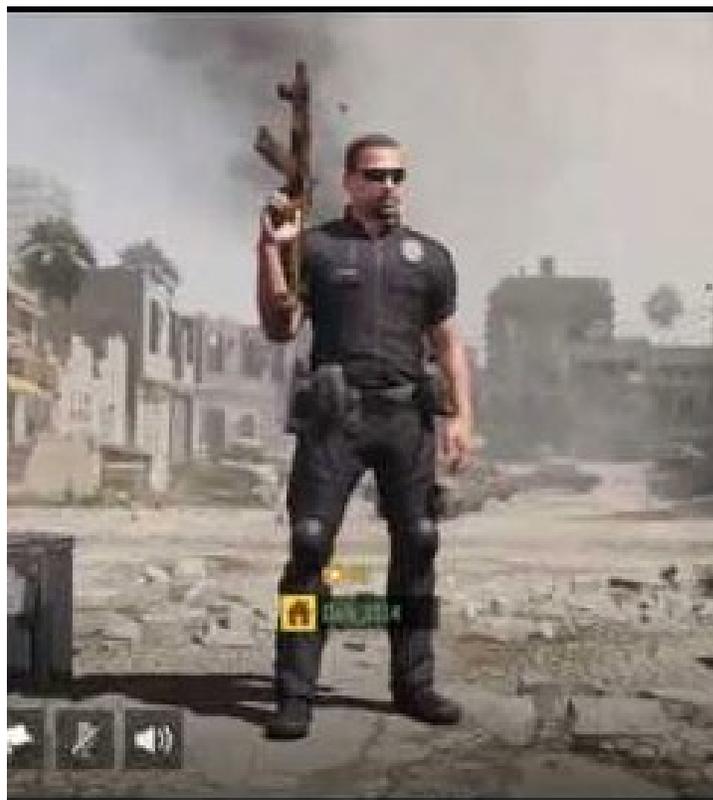
10. Winners :

1st OGSF	2nd NFF	3rd VALORISK
1. Reuben Sanname Lyndem	1. Yash Bagoria	1. Nikhilesh Thakur
2. Isaiah Lemiker Khonglah	2. Vikrant Singh	2. Akshat Jain
3. Baksan C. Kharmalki	3. Avishek Paul	3. Kalpesh Vishwakarma
4. Babitdor Kayang Khonglah	4. Vishal Kumar	4. Rishi Goyal
5. Nambhah Dimi Khonglah	5. Rohit Patidar	5. Monsur ahmed saikia

Event 2

- Name of the Event :** Call of Duty Mobile (CODM)
- Organizing Section :** Gaming
- Coordinator of Event :** Vicky Hajong
- Date :** 5th-6th November 2022
- Venue :** CR1
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
It is a free to play 1st person tactical hero shooting game. It was hosted in 2 phases: Qualifiers(Online) and Playoffs(Offline) . Players securing 1st, 2nd and 3rd positions were awarded certificates and cash prizes.
- Winners :**

1st TEAM HOLEBREAKERS	2nd TEAM NIT ARUNACHAL PRADESH	3rd TEAM RAD NAPHANG
1. Ashutosh Kumar Rai	1. Kenjom Geyi	1. Alderliest Pyrtuh
2. Ankit Saini	2. Suraj Miji	2. Wailadmi Manner
3. Ujwal Chakma	3. Hitesh Gupta	3. Achintya Choudhary
4. Chicka sen	4. Chakkai Wangsu	4. Wanrapbok R
5. Dipu Dev Nath	5. Prajwal Deshmukh	5. Kharshandi Mangkynsai
6. Saman Mawn	6. Pokli Kayi	6. Pohshna
	7. Taba Tegier	Marbhahki Laloo
	8. Joydeep Roy	



Photography Events :

Event 1

- Name of the Event :** Photo Exhibition
- Organizing Section :** Photography and Fine Arts Club
- Coordinator of Event :** Kumar Gaurav, Shubham Ray
- Date :** 6th November 2022
- Venue :** Mini Auditorium
- No of Participants:** NIT Meghalaya + Outside of NIT Meghalaya
- About the Event :**
This was a competition held where participants were required to show photography talent by relating to **"Technology Inspired Mother Nature"**. Players securing 1st, 2nd and 3rd positions were awarded certificates and cash prizes.

- Winners :**

1st.KS Team (NEHU)	2nd.Danjo Team (B20EC034)	3rd.Radhe (NEHU)
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Departmental Events:

Event 1

- Name of the Event :** Bascule Bridge (Departmental Event)
- Organizing Section :** CE Department
- Coordinator of Event :** Ritesh, Shiwani Kumari
- Co - coordinator of theEvent :** Amit Kumar Patel
- Date :** 6th November 2022
- Venue :** CR13
- No. of Participants:** NIT Meghalaya
- About the Event :**

This was an event of mechanized innovation technique that holds the design, construction and load testing of bascule bridge built with icecream sticks and mechanized by a pulley, motor or hydraulic pumping.

- Winners :**

1st. Kundan Kumar (B21CE036)	2nd. Jenny Fersha Dhar (B21CE033) Joyanka Bai Passah (B21CE037)	3rd. Nisha Hajong (B21CE007)
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Event 2

- Name of the Event :** Mech-kriti (Departmental Event)
- Organizing Section :** ME Department
- Coordinator of Event :** Manas Kumar, Sandeep Kumar
- Co - coordinator of theEvent :** Anthony Sangma
- Date :** 7th November 2022
- Venue :** CR13
- No. of Participants:** NIT Meghalaya
- About the Event :**

This event was all about making a Rangoli using a drafting tool. Rangoli designs could be simple geometric shapes, floral shapes or they could be elaborate designs.

- Winners :**

1st. Ashim Das (NEHU)	2nd. Protiksh a Hajong (B21EE012) Anudhyan Hazarika (NEHU)	3rd. Diyasha Mahanta (B21ME032)
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Event 3

1. **Name of the Event : Assembler** (Departmental Event)
2. **Organizing Section :** ME Department
3. **Coordinator of Event :** Manas Kumar, Sandeep Kumar
4. **Co - coordinator of theEvent :** Anthony Sangma
5. **Date :** 5th November 2022
6. **Venue :** CR13
7. **No. of Participants:** NIT Meghalaya
8. **About the Event :**

In this event, a small/mini bicycle with all its components were given to the participants where the participants were assigned to assemble or disassemble the components within a specified time.

9. **Winners :**

1st.Joydeep Roy (NIT Arunachal Pradesh)	2nd.Akramul Islam (B21EE014)	3rd.Kashif Shams (NEHU)
Chakai Wa ngsu (NIT Arunachal Pradesh)	Parvej Alam (B21EE032)	Bishal Thakur (NEHU)



Event 3

1. **Name of the Event : Vignam** (Departmental Event)
2. **Organizing Section :** Physics Department
3. **Coordinator of Event :** Niraj Kumar
4. **Co - coordinator of theEvent :** Mamila Jahanvi Sai
5. **Date :** 6th November 2022
6. **Venue :** CR8
7. **No. of Participants:** NIT Meghalaya
8. **About the Event :**

This was an event from the Department of Physics conducted in 2 rounds.

9. **Winners :**

1st.Kasif Shams (NEHU)	2nd.Kunal Singh (B20EC034)	3rd.Bishal Thakur (NEHU)
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Event 1

- Name of the Event :** React (Departmental Event)
- Organizing Section :** Chemistry Department
- Coordinator of Event :** Anchal Sharma
- Co - coordinator of theEvent :** Charan Kumar
- Date :** 5th-6th November 2022
- Venue :** Pandal
- No. of Participants:** NIT Meghalaya
- About the Event :**

This was an event from the Department of Chemistry conducted in 2 rounds. It was a quiz with 30 questions and the participant having the highest marks was declared the winner.

9. Winners :

Avinash Renukunta (B21CS011)	Kundan Kumar (B21CE036)	Nitish Modi (B21CS030)
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Prize distribution for the above event



Prize distribution for the above event



JAM Session forEnjoyment



JAM Session forEnjoyment



JAM Session forEnjoyment



Departmental Trophy



Departmental Runner Up

CODING CLUB

Workshop

Networking & Bug Bounty:

Date : 12-10-2022(9-12pm)

Lecture Hall by Rohit Patedar Viraj Vaishnav

Total Attendance :25

Both networking and bug bounty programs are essential in the field of computer science and cybersecurity. Networking enables effective communication and data exchange, while bug bounty programs contribute to the ongoing improvement of software and system security.

Networking: It explain how the computer are connected to each other and It involves understanding concepts like IP addressing, routing, switching, TCP/IP, DNS, and network topologies.

Bug Bounty: Bug bounty programs in computer science and cybersecurity involve the identification and reporting of software vulnerabilities and security flaws. Ethical hackers participate in these programs to find and report bugs to software companies, web platforms, or organizations. In return, they receive monetary rewards, recognition, or other incentives.

Bug bounty programs encourage security researchers to discover and report vulnerabilities before they can be exploited by malicious actors. This helps improve the security of software, websites, and applications, ensuring that potential weaknesses are identified and fixed promptly.

They at last teach how codes for Digit code are generated and some mathematics involved like permutation and combination.



Competitive Coding:

Date : 09-11-2022(10-12pm)

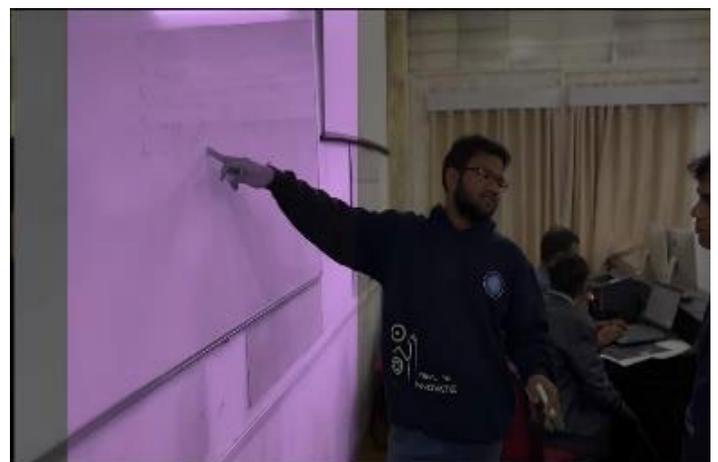
New CC by : Ritikmani Yadav and Keshav Krishna

Total Attendance : 20

Competitive coding competitions and platforms provide a range of coding challenges that test problem-solving skills, algorithmic knowledge, and programming proficiency. Participants compete against each other to solve these challenges and achieve the best possible solution within the given constraints.

They teach student how to use different platform to solve question regarding coding; also helped student in solving some of the question from leetcode and completed the lecture.

They at last teach how codes for Digit code are generated and some mathematics involved like permutation and combination.



Web Development:

Date :19-11-2022(10-12pm)

Online Meet by

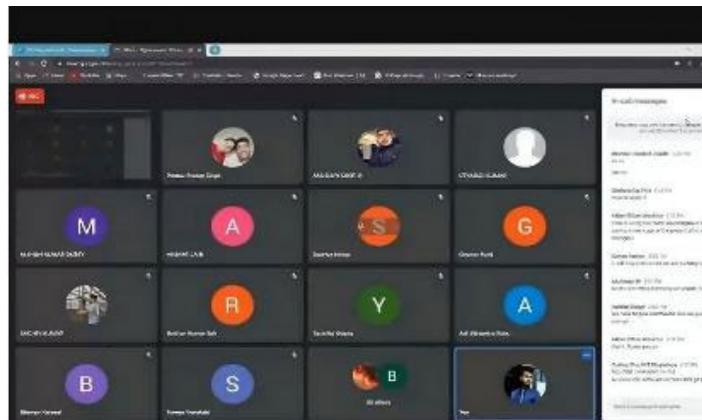
Anubhav Dixit and Prashant Kumar

Total Attendance :35

Web development refers to the process of creating and building websites and web applications. It involves the design, development, and maintenance of the various elements that make up a website, including its structure, layout, functionality, and content. Web development encompasses several components, such as front-end development, back-end development, and database management.

They start with the basic based on HTML; CSS; JavaScript then move forward with react nodeJs and different front end and

backend technique and helped student to understand a simple website and its backend.



App Development:

Date :11-02-2023(11-12pm)

Lecture Hall by

Dorababu Arigi and Mahdhusudan Mondal

Total Attendance :55

App development refers to the process of creating applications that run on mobile devices such as smartphones and tablets.

Flutter It allows developers to create high-quality native mobile apps for both iOS and Android platforms using a single codebase. Flutter uses the Dart programming language and provides a rich set of pre-designed UI components and widgets, enabling developers to build visually appealing and interactive user interfaces.

They explain them how to use github and develop there own profile and development.



DSA & OOPs:

Date :11-02-2023(11-12pm)

New CC by Samarth Verma and Nishant

Total Attendance :15

Understanding DSA is crucial for developing efficient and optimized software solutions. It enables programmers to select the appropriate data structures and algorithms to solve specific problems and perform tasks with maximum efficiency. Proficiency in DSA allows for better problem-solving skills, as it provides a toolkit of algorithms and data structures that can be applied to a wide range of programming challenges.

Studying DSA involves learning and practicing various algorithms such as sorting, searching, graph traversal, dynamic programming, and more. It also involves analyzing the time and space complexity of algorithms to evaluate their efficiency and scalability.

They help to define OOPs and DSA the four pillar of OOPs and motivated them to learn this too to master there knowledge,



ROBOTICS CLUB

Workshop

Cognitia 2022

Date :17th Oct to 3rd Nov, 2022 from 5pm to 7pm

Total Attendance :125

There are total 10 events in Cognitia offered by Robotics club for which different colleges will be able to participate and compete with each other.

Students from NIT Meghalaya have built different bots and developed the skill of Arduino Uno and different sensors. They have also developed the 4 bots by themselves wire and wireless.



Robotron

Date :18th Feb, 2023

Providing a 45 days workshop in robot manufacturing and software simulation.



Free AI, ML and Space Tech by Spartificial

Date :25th Feb, 2023

Total Attendance : 31

Provided a deep knowledge how the AI is generating some key features in space technologies.

Autonomous spacecraft: AI enables autonomous decision-making and navigation for spacecraft, reducing reliance on ground control and enabling more efficient and agile operations. AI algorithms can analyze data from onboard sensors, make real-time adjustments to spacecraft trajectories, and even perform complex tasks such as docking and rendezvous with other spacecraft.



Drone show

Date :5th March, 2023

Total Attendance : 90

Meeting with freshers and make them feel about robotics event and Showed a drone show in the NIT Meghalaya campus. nitm video - Google Drive(https://drive.google.com/drive/folders/173k8c_vHrZycn_xCOhIYM_rveckg-4SxG)



SPORTS SECTION

The Sport Club of the National Institute of Technology (NIT) Meghalaya is a vibrant and dynamic organization dedicated to promoting sports and athletic activities within the campus. With a strong emphasis on physical fitness and competitive spirit, the Sport Club plays a vital role in fostering a healthy and active lifestyle among the students.

Throughout the academic year 2022-2023, the Sport Club organizes a range of sporting events, including badminton tournaments, table tennis tournaments, football tournaments, cricket tournaments, and the highly anticipated marathon. These events are designed to provide students with opportunities to showcase their sporting skills, engage in friendly competition, and foster a sense of camaraderie among participants.

Intra NIT Meghalaya Badminton tournament

Date : 3rd & 4th September 2022

Venue: NEHU Indoor Stadium

About the Event :

The badminton tournament organized by NIT Meghalaya at NEHU Indoor Stadium is an exciting event that brings together skilled players from various institutions. It offers a platform for competition, skill enhancement, and community engagement while promoting the sport of badminton. Spectators can enjoy thrilling matches and witness impressive displays of athleticism, making it an important event in the local badminton scene.



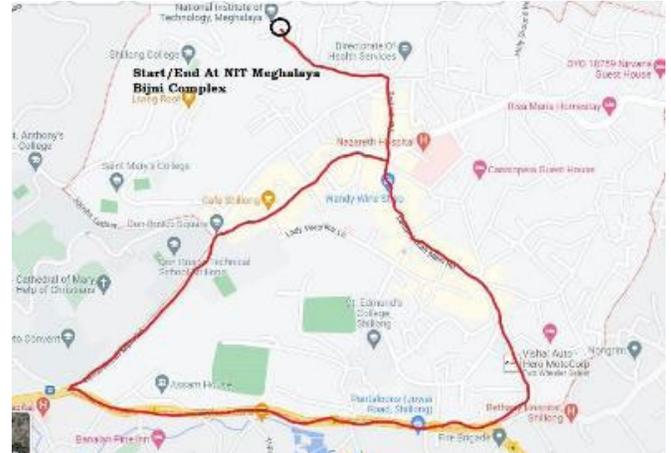
Intra NIT Meghalaya Marathon Competition.

Date : 5th - 7th November 2022

About the Event :

On National Unity Day and in accordance with Vigilance Week, the Sports, and Games Section of NIT Meghalaya organised a marathon race on October 31, 2022 (Monday) from 6:00 a.m. to 8:00 a.m. with exciting prizes for the top 10 finishers in boys and girls. Boys needed to complete two rounds of the attached route, and girls needed to complete one round of the same.

A medical support team, along with an institute ambulance, was actively present during the marathon.



Route Map :



Intra NIT Meghalaya Football Tournament

Date : 5th - 7th November 2022

Venue: NEHU Football Ground

About the Event :

As per time-table SAC sports and games successfully conducted Intra-NIT Football Tournament On 22/10/22 and 23/10/22 at NEHU sports ground. A maximum of two teams were allowed from each year of BTech and one team from MTech, PhD and MSc were allowed. A total of 8 teams registered and accordingly a knockout tournament was planned. All the standard rules of FIFA were followed except the match duration which was 20 minutes each half. The referee and two linesmen assisted in enforcing the laws of the game during the matches. A medical support team along with institute ambulance was actively present during the matches



Intra NIT Meghalaya Men's Cricket Tournament

Date : 18/02/2023 and 19/02/2023

Venue: NEHU Football Ground

About the Event :

As per the time-table SAC sports and games successfully conducted Intra-NIT Cricket Tournament On 18/02/2023 and 19/02/2023 at NEHU sports ground. A maximum of two teams were allowed from each year of BTech and faculty side one team from MTech, MSc, Non-Teaching staff, and three teams from PhD. A total of 16 teams registered and accordingly a knockout tournament was planned. All the standard rules of ICC were followed. The two umpires assisted in enforcing the laws of the game during the matches. A medical support team along with an institute ambulance was actively present during the matches



Intra NIT Meghalaya Women's Cricket Tournament

Date : 25th February (Saturday) 2023.

Venue: Lapalang Ground

About the Event :

As per the time-table SAC sports and games successfully conducted Intra-NIT Cricket Tournament On 25/02/2023 at Lapalang Ground. A maximum of one team was allowed from each year of BTech and. A total of 4 teams registered and accordingly a knockout tournament was planned. All the standard rules of ICC were followed. The two umpires assisted in enforcing the laws of the game during the matches. A medical support team along with an institute ambulance was actively present during the matches



Apart from Intra Mural Activities, the Sports Section of NIT Meghalaya took part in various Inter Universities Competitions, namely IIT BHU "Spardha" 14th – 16th October 2022 Sporting Events, and participated in Chess and Badminton Competitions, NIT Silchar 18th – 20th November 2022 also participated in Chess and Badminton Competitions and participated in NIT Rourkela in Football

Tournament from 10th – 12th February 2023.



Central Library

The Central Library of the Institute has been growing rapidly. The Library houses popular titles in Engineering, Technology, Sciences, Humanities, Social Sciences, and Management to enrich the students and faculty with requisite knowledge and expertise. It has a collection of around 15,500 + text and reference books. The Library also has access to several e-books, e-databases, and e-journals. In addition, book bank facilities are available for the SC/ST category of students. The Library subscribes to full-text databases such as ScienceDirect, Springer-Link, ACM Digital Library, IEL (GP), ASCE, ASME, and one e-bibliographic database, i.e., MathSciNet. The Library also has around 5977 e-books from famous publishers such as Pearson, Wiley, Elsevier, and Springer Nature to cater to the growing information needs of the students.

The Library is automated using the Library Management software, i.e., Koha, whereby the circulation process is fully automated using the software. Users/patrons can gather information about the library resources using OPAC (Online Public Access Catalogue). The Library subscribes to Turnitin anti-plagiarism software and Grammarly software to help the researchers and faculty members. Users can access the online databases through Institute's network. Library collection can also be searched through Web OPAC.

Budgetary & Expenditure Details

The budget allocated for the Central Library for the FY 2022-23 is Rs. 1.5 Crore. Based on the requirements, an additional fund of Rs. 2243029/- has also been allotted to the Central Library, making the total budget allocated to Rs. 17243029/- Below table gives the detailed expenditure incurred on books, journals, newspapers, binding, etc. for 2022-23:



Year	Printed Books	OnLine Databases/c JournalLs	Newspaper & Magazine
2022-23	397428.00	16464315.00	25000.00

Library Collections:

The collections of the central library consist of books, e-resources, theses, reports, and other reading materials in science, engineering & technology, humanities, social sciences, and management. The total collection of the library as on 31st March 2023 stands as follows:

Sl. No.	Name of Resources	Collection As On 31st March 2023
1	Printed Books	15505
2	E books	5977
3	E-Data base/E-JournalLs	13(6005)
4	Book Banks (SC/ST)	1462
5	Thescs	80
6	Magazines	4
7	Newspaper	8
8	Reports/Annual Reports/Audit Reports	43

Area and Seating Capacity

Total Area of the Libraries is : 170 Sq. Meter

Seating capacity : 50



Library Hours:

The Institute library remains functional on all the working days except for few national and gazette holidays and remains open for 10 hours a day i.e. 9 AM to 7 PM.



Services Provided

The Central Library of NIT Meghalaya provides the following services to its users:

1. Orientation Programme
2. Circulation Service
3. Information Literacy
4. User Education
5. Electronic Database and Online- Journals
6. OPAC (Online Public Access Catalogue)
7. Internet Facility
8. Reprographic Service
9. Bibliographic Services
10. Reference and information Services
11. Referral Services
12. Bulletin Board Service
13. Current awareness Services
14. User awareness services

Permanent Campus:

The construction activities in the permanent campus of the Institute have been making good progress till 2017-18 under the overall supervision of RITES Ltd, the Project Management Consultant (PMC) for the Phase-I constructions of the permanent campus of the Institute at Sohra (Cherrapunjee). As per RCE approved by the Cabinet and circulated vide Ministry letter F No.33-1/2012.TS-III dated New Delhi, 4th March 2020 an amount of Rs.429.70 crores has been earmarked for Civil Works. As per RCE approval, only the following buildings are to be completed in order of their priority, viz; Administrative Building, Academic Building (4 blocks), Hostel Buildings (Boys and Girls), Faculty & Staff Quarters, Library cum Computer Centre Workshop Building, Sub Station(ESS) Building (2 Nos). The other works/buildings, viz; Lecture Hall, Auditorium Building, Director's

Bungalow, Guest House, Medical Centre, Sports Complex, External Electrical works, etc. have been foreclosed.

The construction activities during 2020-21 have been going in a slow pace due to COVID-19 pandemic, law and order situation in Sohra area, restriction of migrant labourers by State Govt., etc. The construction of Internal Road works and water storage reservoir inside the campus is also in progress. Overall physical progress of works undertaken by RITES Ltd. (PMC) is about 84%. The Institute re-scheduled shifting to the permanent campus by December 2023.

Attached herewith few photographs of ongoing works in the permanent campus.



Academic Building - A



Academic Building - B



Academic Building - C



Administrative Building



Academic D

Academic Building - D



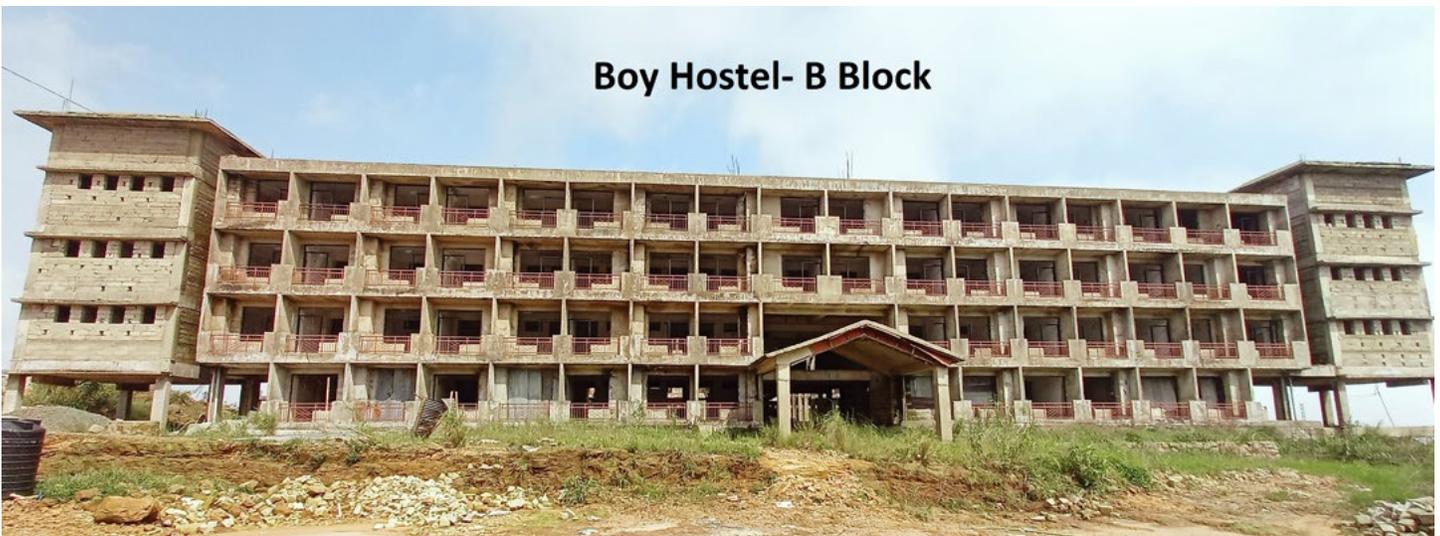
Library

Library Building



Boy Hostel (3-Seater)

Boys Hostel (3-Seater)



Boy Hostel- B Block

Boys Hostel (3-Seater)



Girls Hostel



Workshop Building



TYPE- (A1, A2 & A3)



TYPE- (B1 & B2)



TYPE- (B3 & B4)



TYPE- (C1,C2,C3 & C4)



TYPE- (EA & EB) 1



TYPE- (EA & EB)



TYPE- D (A & B)

Implementation of the Right to Information Act, 2005:

In accordance with the provision of Section 5(2) of the Right to Information Act, 2005, NIT Meghalaya has appointed Shri Bantehsonglang Blahwar, Asst. Registrar (Establishment) as the Public Information Officer for the Institute. The Director is the designated First Appellate Authority of the Institute. The details of both have been clearly displayed on the Institute website under the RTI link.

As mandated under Section 4 (1) a) of the RTI Act, 2005, the Institute is moving towards complete digitization and computerization of information for easy access and quick response to RTI queries. The Institute is complying with the provisions of Section 4 (1) b) and Section 4 (2) and has provided *suo motu* all required information and documents on the Institute website. Annual Report and Statement of Annual Accounts are displayed as soon as they are approved by the parliament. Other documents

like Minutes of Board of Governors and Senate meetings are uploaded as soon as they are confirmed.

The Institute has been very prompt in replying to RTI queries, both received directly or forwarded from the Ministry. The Institute has been registered with RTI Request & Appeal Management Information System (RTI-MIS) portal and almost all RTI queries are received, replied and closed through the portal. The Institute is regularly submitting quarterly reports as required on the RTI-MIS portal. Quarterly reports of RTI queries received and closed are also uploaded regularly on the portal of the Central Information Commission, Govt. of India (dsscic.nic.in).

A summary of the quarterly reports submitted on the RTI-MIS portal for the Financial Year 2022-23 is shown in the table below:

Progress during 1st Quarter (01.04.2022 – 30.06.2022)

	Opening Balance as on beginning of Quarter 1	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/ appeals rejected	Decisions where request/ appeals accepted (Request dispose of and request return to applicant)
Requests	28	00	09	00	00	36
First Appeals	02	00	02	00	00	03

Progress during 2nd Quarter (01.07.2022 – 30.09.2022)

	Opening Balance as on beginning of Quarter 2	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/ appeals rejected	Decisions where request/ appeals accepted (Request dispose of and request return to applicant)
Requests	01	00	05	00	00	05
First Appeals	01	00	00	00	00	01

Progress during 3rd Quarter (01.10.2022 – 31.12.2022)

	Opening Balance as on beginning of Quarter 3	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/ appeals rejected	Decisions where request/ appeals accepted (Request dispose of and request return to applicant)
Requests	01	00	04	00	00	04
First Appeals	00	00	00	00	00	00

Progress during 4th Quarter (01.01.2023 – 31.03.2023)

	Opening Balance as on beginning of Quarter 4	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/ appeals rejected	Decisions where request/ appeals accepted (Request dispose of and request return to applicant)
Requests	01	00	15	00	00	15
First Appeals	00	00	00	00	00	00

Status of filling up of backlog vacancies during the year 2021-22 on Mission Mode:

The Economic Advisor (HE), Ministry of Education (MoE) had issued instructions to all Central Higher Education Institutions (CHEIs) regarding the Special Drive to fill backlog vacancies on Mission Mode vide Office Memorandum F.No.33-2/2021-TS. III (Pt-1) dated 25.08.2021 by enclosing a Letter No. D.O No. 33-2/2021-TS-111(Pt.I) dated 24.08.2021 from the Secretary, MoE to the different Bureau Heads. Through the said letter, the Secretary (HE) has informed that in order to fill the backlog vacancies for the faculty positions that are lying vacant, especially in the Scheduled Castes, Scheduled Tribes, Other Backward Classes and EWS categories in the CHEIs functioning under the administrative control of the MoE, it has been decided that all CHEIs should fill these vacancies in a Mission Mode within a period of one year starting from 05.09.2021 to 04.09.2022 and to report about the action taken and progress made in this regard through the following mechanism :-

(i) By including a separate chapter in their Annual Report (starting from 2021-22) depicting the status of filling up of backlog vacancies in tabular format during the year.

- (ii) By including an agenda Item in every Finance Committee / Board of Governors / Board of Management meeting, giving status of filling up of backlog vacancies.
- (iii) The Heads of all CHEIs will send a monthly report to Secretary (HE) (starting from September 2021) appraising the status of action taken.
- A. To comply with the above-mentioned instructions of MoE, this chapter has been added to the Annual Report 2022-23.
- B. The matter was also placed before the Board of Governors (BoG) of the Institute in meetings held in the financial year 2022-23 in which the BoG is appraised of the status of faculty recruitment and presented with brief action taken reports on the given points. The brief reports presented before the BoG in each meeting are furnished as under:-

XXXI Meeting of the BoG dated 18.05.2022

Sl. No.	Ministry Instructions	Actions taken by NIT Meghalaya
1.	To include a separate chapter in their Annual Report (starting from 2021-22) depicting the status of filling up of backlog vacancies in tabular format during the year.	The Institute has included a separate chapter in its Annual Report for the FY 2021-22 depicting the status of filling up of backlog vacancies in tabular format and the same shall be followed in the forthcoming years.
2.	To include an Agenda Item in every Board of Governors meeting, giving the status of filling up of backlog vacancies.	The Institute at present has 10 numbers of vacancies for Faculty out of which 07 are backlog vacancies and 03 are fresh vacancies. The 07 backlog vacancies are in reserved category i.e., 05 OBC and 02 SC. The Institute is in the process of filling up the backlog vacancies and fresh vacancies shortly. Scrutiny of the applications is over. The approved lists of Visitor's nomination have been received and appropriate actions are being initiated to complete the faculty recruitment process on time. The Director of the Institute explained that the delay in obtaining the Visitor's nominee list delayed the recruitment and selection of Faculty members. He further informed the Board members including the MoE nominees about the present situation and his completion of the tenure on 30 th June 2022 including the request Letter dated 11.05.2022 sent to the Ministry for considering and Authorising the Director of the Institute to complete the Selection process during his tenure. The Ministry Officials stated that the matter is under process and the decision of the Ministry would be conveyed accordingly.
3.	The Heads of all CHEIs to send a monthly report to Secretary (HE) (starting from September 2021) appraising the status of action taken.	The Institute is regularly sending the monthly report to the Office of Higher Education (HE), Ministry of Education, appraising the status of action taken in filling up the backlog vacancies. The report for the month of April 2022 was sent on 11.05.2022 vide Letter No. NITMGH/ ES/ MoEd-RPT/BV/2022-23/214 dated 11/05/2022.

XXXII Meeting of the BoG dated 16.09.2022

Sl. No.	Ministry Instructions	Actions taken by NIT Meghalaya
1.	To include a separate chapter in their Annual Report (starting from 2021-22) depicting the status of filling up of backlog vacancies in tabular format during the year.	The Institute has included a separate chapter in its Annual Report for the FY 2021-22 depicting the status of filling up of backlog vacancies in tabular format and the same shall be followed in the forthcoming years.
2.	To include an Agenda Item in every Board of Governors meeting, giving the status of filling up of backlog vacancies.	The Institute at present has 12 numbers of vacancies for Faculty out of which 07 are backlog vacancies and 05 are fresh vacancies. The 07 backlog vacancies are in reserved category i.e., 05 OBC and 02 SC. The Institute is in the process of filling up the backlog vacancies and fresh vacancies shortly.
3.	The Heads of all CHEIs to send a monthly report to Secretary (HE) (starting from September 2021) appraising the status of action taken.	The Institute is regularly sending the monthly report to the Office of Higher Education (HE), Ministry of Education, appraising the status of action taken in filling up the backlog vacancies. The report for the month of August 2022 was sent on 02.09.2022 vide Letter No. NITMGH/ES/MoEd-RPT/BV/ 2022-23/1020 dated 02.09.2022.

(C) The Institute has been regularly sending the monthly report to the Department of Higher Education (HE), Ministry of Education, appraising the status of action taken in filling up the backlog faculty vacancies on Mission Mode. The letter number and date of submission of the monthly reports in the financial year 2022-23 are presented below:

S. No.	Report for the month of	Letter No.	Dated
1.	April 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/214	11.05.2022
2.	May 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/349	02.06.2022
3.	June 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/586	04.07.2022
4.	July 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/761	02.08.2022
5.	August 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/1020	02.09.2022
6.	September 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/1374	13.10.2022
7.	October 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/1552	03.11.2022
8.	November 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/1851	02.12.2022
9.	December 2022	NITMGH/ES/MoEd-RPT/BV/2022-23/2198	03.01.2022
10.	January 2023	NITMGH/ES/MoEd-RPT/BV/2022-23/2626	06.02.2023
11.	February 2023	NITMGH/ES/MoEd-RPT/BV/2022-23/2883	06.03.2023
12.	March 2023	NITMGH/ES/MoEd-RPT/BV/2022-23/3126	31.03.2023

Status of Public Grievances received during the year 2021-22:

As per mandate of the Government, NIT Meghalaya has appointed the following officer as the Public Grievance Officer to be the nodal point for redress of grievances received by the Institute in the form of letters or through the Centralised Public Grievance Redress and Monitoring System (CPGRAMS) portal:

The Institute is registered with the CPGRAMS portal since the year 2015. The Institute has been prompt in replying to all grievances received till date. The details of the public grievances received, replied and closed in the year 2021-22 are shown in the table below:

Shri Bantehsonglang Blahwar
Assistant Registrar (Establishment)

Sl. No.	Registration Number	Name	Received Date	Dairy Date	Current Status	Pending with	Grievance Redress Time (in days)	Dept./ Organisation Redress Time (in days)	Mode Of Transfer	Type of grievance
1.	DSEHE/E/2022/07155	Yashpal Singh	10.10.2022	10.10.2022	Final Closure	Grievance is closed.	54	37	NA	NA
2.	DSEHE/E/2022/07621	Satwik Choudhury	28.10.2022	28.10.2022	Final Closure	Grievance is closed.	12	12	NA	NA
3.	DSEHE/E/2022/08065	Satwik Choudhury	09.11.2022	09.11.2022	Final Closure	Grievance is closed.	16	16	NA	NA

ACADEMIC DEPARTMENTS AND CENTRES



Department of Civil Engineering

1. Brief Introduction to the Department:

NIT Meghalaya's Civil Engineering department first began its session from July 2012. The Department, which has an intake capacity of 30 students, offers 4 years (eight semesters) B. Tech programme in Civil Engineering. Since 2014, the Department has initiated the Ph.D programme. Additionally, the department has started an M.Tech programme in Structural Engineering since July 2018 with an intake capacity for 20 students of which 15 students have enrolled in the programme.

The academic activities of the Department emphasize on deep understanding of the fundamental principles on Civil Engineering, development of creative ability to handle the challenges of Civil Engineering and the analytical ability to solve problems which are interdisciplinary in nature. The Department also encourages its students to engage in extra-curricular and co-curricular activities, essential for their own personal development apart from nurturing team spirit and developing organizational skills. The faculty members of the Department are involved in high-quality research and they continue to explore new frontiers of breakthrough technical knowledge, recent inventions and discoveries. The findings through this research on latest knowledge are being imparted to the students so that they are acquainted with the latest trends of the emerging engineering world. The Department actively promotes curriculum development activities by updating existing courses, develops new courses and prepares updated resource material for teaching. The Department also aims to contribute to interdisciplinary academic and research activities of NIT Meghalaya.

Moreover, the department also encourages both students and

faculty members, along with all others concerned, in working for the development of Meghalaya, the North East region and the nation as a whole.

Vision:

A Centre of Excellence of global repute in Civil Engineering education, research and consultancy by producing quality manpower and creating knowledge and technologies in these fields and contributing to the economic development of the region through extension activities.

Mission:

- To impart quality education in the fields of Civil Engineering and allied areas through academic programs at both UG and PG levels.
- To carry out research for advancement of knowledge and development of technologies in the fields of Civil Engineering and allied areas for the benefit of the society.
- To participate in extension activities for the socio-economic development of the region.

2. Programmes Offered:

- Four year (Eight semester) B.Tech Degree with 30 intake capacity per year.
- Two year (Four semester) M.Tech Degree in Structural Engineering with 20 intake capacity.
- Ph.D. programme with the specialization of Structural, Geotechnical, Water Resources, Environmental and Transportation Engineering.

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remarks
Dr. Comingstarful Marthong	Associate Professor	Ph.D	Structural Engineering	January 10, 2013	2 ongoing	
Dr.M. Longshithung Patton	Assistant Professor	Ph.D	Structural Engineering	October 06, 2013	2 ongoing	
Dr. Hriday Mani Kalita	Assistant Professor	Ph.D	Water Resources Engineering	August 12, 2014	1 ongoing	
Dr. Smrutirekha Sahoo	Assistant Professor	Ph.D	Geotechnical Engineering	November 02, 2015	3 ongoing	
Dr. Susmita Sharma	Assistant Professor	Ph.D	Geotechnical Engineering	May 10, 2016	1 ongoing	

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remarks
Dr. Debabrata Podder	Assistant professor	Ph.D	Structural Engineering	June 23, 2016	1 ongoing	
Dr. Dibyendu Adak	Assistant Professor	Ph.D	Structural Engineering	January 03, 2018	3 ongoing	
Dr. Ganesh Chandra Dhal	Assistant Professor	Ph.D	Environmental Engineering	September 24, 2019	2 ongoing	
Dr. Pradeep Gautam	Assistant Professor	Ph.D	Transportation Engineering	October 14, 2019	1 ongoing	
Dr. Needhi Kotoky	Assistant Professor	Ph.D	Structural Engineering	8 th September 2020	2 ongoing	
Dr. Rubi Chakraborty	Trainee Teacher	M.Tech	Geotechnical Engineering	July 21, 2014	-	
Mr. Supratim Kaushik	Trainee Teacher	M.Tech	Transportation systems Engineering	20 July, 2015	NA	Ph.D Pursuing

4. Staff Profile:

Name	Designation	Qualification	Date of Joining	Nature of Job
Mr. Khlorsing Kharmih	Technical Assistant	Diploma in Engineering	July 14, 2014	Permanent
Mr. Skhembor Lyngdoh Mawphlang	Technical Assistant	Bachelor of Technology	March 01, 2016	Served till 31 st August 2022
Mr. Gaddiel M Kharbithai	Technical Assistant	Diploma in Engineering	December 15, 2021	Permanent
Mr. Purnadip Roy	Technician	Diploma in Engineering	March 03, 2016	Permanent
Mr. Samuel Bennett	Technician	Diploma in Engineering & A.M.I.E	September 01, 2016	Permanent
Ms. Rita Mary Lyngdoh Marshilong	Technician	Diploma in Engineering & Bachelor of Technology	December 17, 2021	Permanent
Ms. Mary Bennett	Technician	Diploma in Engineering	December 21, 2021	Permanent
Ms. Dunakiwan I Lapasam	Laboratory Attendant	Bachelor of Technology	December 24, 2021	Permanent
Mr. Donboklang Sohkhia	Technician (outsourced)	Bachelor of Technology	December 22. 2022	On Contract

5. List of Publications:

(a) Journals:

Year 2023:

- ML Patton**, SBF Warsi, **D Adak**. Experimental and Numerical study on the Structural behaviour of HST, RCC and CFST stub columns under pure axial compression, Innovative Infrastructure Solutions, Springer, Vol.-8, 74, 2023. <https://doi.org/10.1007/s41062-022-01025-1>.
- Donkumar Francis Marbaniang, Arkamitra Kar, **Dibyendu Adak**, Kruthi Kiran Ramagiri, Dodda Srinivas, Indrajit Ray, Optimization of Activator Concentration for Graphene Oxide-based Alkali Activated Binder, ACI Materials, Accepted.

(b) Book Chapters:

Year 2023:

- Dr. G C Dhal** "Centralized approach for the agricultural waste-based industry", accepted for publication in the book, Agricultural Waste to Value added products, to be published by Springer Nature.
- Dr. G C Dhal** "Global status of agricultural waste-based industries, challenges and future prospects" accepted for publication in the book, Agricultural Waste to Value added products, to be published by Springer Nature.

(c) Conferences:

Year 2023:

- Kumar Gautam**, P., Kalla, P., Singh Chouhan, H., & Sitaramanjaneyulu, K. (2022). Use of dimensional limestone mining waste as flexible pavement material. *Materials Today: Proceedings*, 65(P2), 2016–2020. <https://doi.org/10.1016/j.matpr.2022.05.431>
- Pradeep Kumar Gautam**, Pravesh Saini, Pawan Kalla, Ajay Singh Jethoo, Harshwardhan Singh Chouhan (2022) 'Performance Analysis of Black Cotton Soil Treated with Dimensional Limestone (Kota Stone) Slurry Waste', in Dharamveer Singh, Lelitha Vanajakshi, Ashish Verma, A. Das (ed.) *Lecture in Civil Engineering: Proceeding of the fifth International Conference of Transportation Research Group of India*. Vth. Springer, pp. 179–192. doi: <https://doi.org/10.1007/978-981-16-9921-4>.

6. Invited Talks Delivered:

Name of the Faculty	Year	Period (DD/MM/YYYY)	Details of the Talk delivered	National / International	Location
Dibyendu Adak	2022	October 10-12, 2022	Global Meet on Civil, Structural and Environmental Engineering	International	Dubai, UAE
	2022	September 26 - 30, 2022	Five-Day Faculty Development Program on Green Technology at Sarala Birla University, Ranchi, Jharkhand India	National	Jharkhand India
Dr. G C Dhal	2022	September 29, 2022	Advance Air Pollution Control & abatement Technology, Siksha 'O' Anusandhan Deemed to be University Bhubaneswar-751030, Odisha, India	National	Odisha
Dr. S. Sahoo	2023	January 10, 2023	Delivered a talk on "Real Time-Monitoring of rainfall-Induced Slope Instability: A case study" at College of Engineering, Bhubaneswar, Odisha	National	Bhubaneswar, Odisha, India
Dr. P.K. Gautam	2022	October 10, 2022	Invited Talk on " Advance material testing for hot mix asphalt" at NIT Jaipur	National	Jaipur, India

7. Sponsored Projects

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount (in Rupees)	Duration	Status
1	Gainful Utilization of Overburden Mining Waste Generated During Limestone Mining in Meghalaya Region as Flexible Pavement Material	Dr. P.K. Gautam	SERB	38,25,800	3 years	On going
2,	Investigating Self-Healing Capability and Performance of HMAMixes Containing Steel Slag As Aggregates.	Dr. P.K. Gautam	SERB	41,62,400	3 years	On going
3	Structural integrity assessment considering residual/reactive stresses due to different welding configurations for high strength steel.	D. Podder	NMRL, DRDO	10,00,000	18 months	On going

8. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. S. Sahoo	Member of Centre for Innovation, Incubation And Entrepreneurship of NIT Meghalaya from July 2019 to till date.	3 years and 8 months
		Faculty-in-Charge of Music-Club under Student Activity Centre, NIT Meghalaya since February 2022 till date	1 year
		Laboratory Inspection Committee member since February 2023 till date	1 month
		Doctoral Research Committee member in Civil Engineering Department	more than 3 years
		Anti-Ragging Squad Committee member since November, 2022	5 months

Sl. No.	Name of Faculty	Responsibilities	Duration
2	Dr. D. Podder	Faculty-in-Charge of Photography and Fine Arts Club under Student Activity Center, NIT Meghalaya till date	On going
		Hostel Warden of Lapalang V till date	On going
3	Dr.P. K. Gautam	Co-Faculty incharge, Robotics Club, under student activity center, NIT Meghalaya	1 year
		Member, NSS	11 months
		Warden, Lapalang I Boys hostel, NIT Meghalaya	2 years
		Member, Anti Ragging Squad committee	5 months
		Member, Summer internship committee	2.5 months
		Hostel Management Committee, NIT Meghalaya	1 year
4	Dr. D. Adak	CIF member and FESEM faculty-in-charge	2 years
		Chairmen On Campus Business committee	4 months

9. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Member of
1	Dr. Smrutirekha Sahoo	Life member of Indian Geotechnical Society (IGS)
		Affiliate Member (ID: 12377792), American Society of Civil Engineers (ASCE)
		International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) Membership for the period of 2022-2025
2	Dr. C. Marthong	Life member of Institution of Engineers India, No. M-1476399
3	Dr. Debabrata Podder	Associate Member (ID: AM186488-5), The Institute of Engineers (India).
4	Dr. Dibyendu Adak	Life member of Institution of Engineers India
		RILEM TC 294-MPAR member
5	Dr. G. C. Dhal	Life membership in the Indian Meteorological Society. (LM-3579)
6	Dr. Rubi Chakraborty	Life member of IGS, Membership for the period of 2018-2021 of ISSMGE
7	Shri. Supratim Kaushik	American Society of Civil Engineers (ASCE)

Department of Computer Science and Engineering

1. Brief Introduction to the Department:

The Department of CSE at NITM has adequate facilities to support each activity needed for a batch of 30 students (per semester). It has a well-qualified and experienced faculty team consisting of 9 faculty members. The Computer Science & Engineering department makes every effort in imparting high-quality education to its motivated students. One of the aims of this department is

to play the role of producing Computer Engineers ready to satisfy the needs of the Computer and IT world. The Department is also actively involved in various research activities.

2. Programmes Offered:

The Department of Computer Science & Engineering offers the B.Tech programme, the full-time M.Tech. programme and the Ph.D. programme (full-time and part-time).

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Dr. Diptendu Sinha Roy	Associate Professor	Ph.D.	Distributed, Grid and Cloud Computing	01-07-2016	2- Full time 4- Part time
Dr. Alok Chakrabarty	Assistant Professor	Ph.D.	Pattern Recognition	20-06-2012	2- Full time 1- Part time
Dr. Akhilendra Pratap Singh	Assistant Professor	Ph.D.	Service Oriented Network Architecture, Wireless Sensor Network, BlockChain Technology	03-09-2013	2- Full time 5- Part time
Dr. Surmila Thokchom	Assistant Professor	Ph.D.	Cloud Computing, cryptography	26-09-2012	2- Full time 3- Part time
Dr. Deepak Kumar	Assistant Professor	Ph.D.	Computational Arithmetic, Machine Learning	20-12-2012	2- Full time 4- Part time
Dr. Yogita*	Assistant Professor	Ph.D.	Data Mining	08-01-2018	2- Full time 2- Part time
Dr. Vipin Pal**	Assistant Professor	Ph.D.	Computer Networks, Wireless Sensor Networks	28-12-2017	3- Full time
Dr. Soumen Moulik	Assistant Professor	Ph.D.	Wireless Body Area Networks, Wireless Sensor Networks, Internet of Things	15-12-2017	2- Full time 1- Part time
Dr. Bunil Kumar Balabantaray	Assistant Professor	Ph.D.	Computer Vision, Robotics	14-12-2017	1- Full time 3- Part time

*Dr. Yogita served at NIT Meghalaya upto 29.12.2022

** Dr. Vipin Pal served at NIT Meghalaya upto 01.02.2023

4. List of Publications:

(A) Journals:

- Design and optimization of circularly polarized dielectric resonator-based MIMO antenna using machine learning for 5G Sub-6 GHz, A Pandey, AP Singh, V Kumar AEU-International Journal of Electronics and Communications 162, 154558
- A Blockchain and AI Based Vaccination Tracking Framework for Coronavirus (COVID-19) Epidemics NR Pradhan, R Mahule, PK Wamuyu, PK Rathore, AP Singh IETE Journal of Research, 1-13
- A novel blockchain-based healthcare system design and performance benchmarking on a multi-hosted testbed NR

- Pradhan, AP Singh, S Verma, N Kaur, DS Roy, J Shafi, M Wozniak, *Sensors* 22 (9), 3449
4. Detecting Sinkhole Attacks in IoT-Based Wireless Sensor Networks Using Distance From Base Station K Mondal, SS Yadav, V Pal, AP Singh, Y Yogita, M Singh *International Journal of Information System Modeling and Design (IJISMD)* 13
 5. Chhangte, L. and Chakrabarty, A., Oct 2022. Near-optimal circuit mapping with reduced search paths on IBM quantum architectures. *Microprocessors and Microsystems*, 94, p.104637.
 6. Chhangte, L. and Chakrabarty, A., Apr 2022. Mapping Quantum Circuits in IBM Q Devices Using Progressive Qubit Assignment for Global Ordering. *New Generation Computing*, 40(1), pp.311-338.
 7. Identification of discriminant Features from Stationary Pattern of Nucleotide Bases and their Application to Essential Gene Classification, Ranjeet Kumar rout, Saiyed Umer, Monika Khandelwal, Smitarani Pati, Saurav Malik, Bunil Kumar Balabantaray, Hong Qin. *Frontiers in Genetics* 14,2023,630
 8. Pattern recalling analysis of an auto-associative memory network using FFT and DWT Ramesh Chandra Sahoo, Sateesh Kumar Pradhan, Biswa Mohan Sahoo, Bunil Kumar Balabantaray *Multimedia Tools and Applications* 82, 2023 9113-9135
 9. Obscene image detection using transfer learning and feature fusion Sonali Samal, Rajashree Nayak, Swastik Jena, Bunil Kumar Balabantaray *Multimedia Tools and Applications* 2023 1-29
 10. SBMYv3: Improved MobYOLOv3 a BAM attention based approach for obscene image and video detection Sonali Samal, Yu Dong Zhang, Thippa Reddy Gadekallu, Rajashree Nayak, Bunil Kumar Balabantaray *Expert Systems* 2023 e13230
 11. LPNet: A lightweight CNN with discrete wavelet pooling strategies for colon polyps classification Pallabi Sharma, Dipankar Das, Anmol Gautam, Bunil Kumar Balabantaray *International Journal of Imaging Systems and Technology* 33,2022 495-510
 12. Li-SegPNet: Encoder-decoder Mode Lightweight Segmentation Network for Colorectal Polyps Analysis Pallabi Sharma, Anmol Gautam, Pallab Maji, Ram Bilas Pachori, Bunil Kumar Balabantaray *IEEE Transactions on Biomedical Engineering* 70,2023 1330 – 1339
 13. On the dynamics and feasibility of transferred inference for diagnosis of invasive ductal carcinoma: A perspective GM Harshvardhan, Aanchal Sahu, Mahendra Kumar Gourisaria, Pradeep Kumar Singh, Wei-Chiang Hong, Vijander Singh, Bunil Kumar Balabantaray *IEEE Acces* 10 ,2022 30870 – 30889
 14. Analysis of Image Forgery Detection using Convolutional Neural Network Chiluveru naneshwar, Manish Kumar Singh, Satyendra Singh Yadav, Bunil Kumar Balabantaray *International Journal of Applied Systemic Studies* 09, 2022 240 – 260
 15. Modified Cat Swarm Optimization for Optimal Assembly Sequence Planning Problems Chiranjibi Champatiray, Sonali Samal, MVA Raju Bahubalendruni, RN Mahapatra, Debasisha Mishra, B K Balabantaray *International Journal of Performability Engineering*, 18,2022 289-297
 16. An Ensemble-Based Deep Convolutional Neural Network for Computer-Aided Polyps Identification From Colonoscopy Pallabi Sharma, Bunil Kumar Balabantaray, Kangkana Bora, Kunio Kasugai, Saurav Mallik, Zhongming Zhao *Frontiers in Genetics* 13 , 2022 1-11
 17. Efficient Cloudlet Allocation to Virtual Machine to Impact Cloud System Performance Lizia Sahkhar, Bunil Kumar Balabantaray, Satyendra Singh Yadav *International Journal of Information System Modeling and Design (IJISMD)* 21
 18. Copy-Move Image Forgery Detection Using Phase Adaptive Spatio-structured SIFT Algorithm Hansda R, Nayak R, Balabantaray BK, Samal S.. *SN Computer Science* 03, 2022 1-16
 19. Kamal Das, Rajarshi Ray, Soumen Moulik, “Optimal Relaying Nodes Selection for IEEE 802.15.6-based Two-hop Star Topology WBAN”, *Elsevier Internet of Things*, Vol. 22, No. 100740, March 2023, DOI: 10.1016/j.iot.2023.100740.
 20. Kaushik Ray, Vipin Pal, Gaurav Singal, Soumen Moulik, “Fuzzy-MAC: An FIS-based MAC Protocol for a Multi-constrained Traffic in Wireless Body Area Network”, *Elsevier Computer Communications*, Vol. 195, No. 1, September 2022, DOI: 10.1016/j.comcom.2022.09.013.
 21. K. Hemant K. Reddy, Ashish K. Luhach, V. Vinoth Kumar, Sanjoy Pratihari, Deepak Kumar, Diptendu S Roy, “Towards energy efficient Smart city services: A software defined resource management scheme for data centers,” *Sustainable Computing: Informatics and Systems*, Volume 35, 2022, 100776, ISSN 2210-5379.
 22. WLARS: Work Load Aware Recharge Scheduling Mechanism for Improving Surveillance Quality in Wireless Rechargeable Sensor Networks. Dande, Bhargavi, Chih-Yung Chang, Shih-Jung Wu, and Diptendu Sinha Roy *IEEE Sensors Journal* (2023).
 23. RLR: Joint Reinforcement Learning and Attraction Reward for Mobile Charger in Wireless Rechargeable Sensor Networks.

- Shang, Cuijuan, Chih-Yung Chang, Wen-Hwa Liao, and Diptendu Sinha Roy *IEEE Internet of Things Journal* (2023).
24. JECF: Joint Energy Conservation and Collision Avoidance for Paths Construction in Bluetooth Networks Li, Xuan, Qiaoyun Zhang, Chih-Yung Chang, Shin-Jer Yang, and Diptendu Sinha Roy *IEEE Sensors Journal* (2023)
 25. CSCP: Energy Charging Mechanism for Surveillance Quality, Network Connectivity and Perpetual Lifetime in WRSNs Kan, Yuanping, Chih-Yung Chang, Shih-Jung Wu, Chin-Hwa Kuo, and Diptendu Sinha Roy *Journal of Internet Technology* 24, no. 2 (2023): 461-474.
 26. State-of-the-Art Load Balancing Algorithms for Mist-Fog-Cloud Assisted Paradigm: A Review and Future Directions Tripathy, Subhranshu Sekhar, Kaushik Mishra, Diptendu Sinha Roy, Kusum Yadav, Ali Alferaidi, Wattana Viriyasitavat, J. Sharmila, Gaurav Dhiman, and Rabindra K. Barik *Archives of Computational Methods in Engineering* (2023): 1-36.
 27. Performance Evaluation and Cyberattack Mitigation in a Blockchain-Enabled Peer-to-Peer Energy Trading Framework Pradhan, Nihar Ranjan, Akhilendra Pratap Singh, S. V. Sudha, K. Hemant Kumar Reddy, and Diptendu Sinha Roy. *Sensors* 23, no. 2 (2023): 670
 28. An Intelligent Health Care System in Fog Platform with Optimized Performance Tripathy, Subhranshu Sekhar, Mamata Rath, Niva Tripathy, Diptendu Sinha Roy, John Sharmila Anand Francis, and Sujit Beborita *Sustainability* 15, no. 3 (2023): 1862.
 29. A neuro evolutionary scheme for improved IoT energy efficiency in smart cities. Choudhury, Sanjoy, Ashish Kr Luhach, Waleed Alnumay, Buddhadeb Pradhan, and Diptendu Sinha Roy. *Computers and Electrical Engineering* 104 (2022): 108443.
 30. Automated generation of text handles from scanned images of scholarly articles for indexing in digital archive. Ajjij, Md, Diptendu Sinha Roy, and Sanjoy Pratihar *Multimedia Tools and Applications* (2022): 1-32.
 31. RS-STQ: Recharge Scheduling Algorithm for Maximizing Spatial and Temporal Data Accuracy. Dande, Bhargavi, Chih-Yung Chang, Chin-Hwa Kuo, and Diptendu Sinha Roy *IEEE Sensors Journal* 22, no. 23 (2022): 23565-23580.
 32. An Efficient Fog Layer Task Scheduling Algorithm for Multi-Tiered IoT Healthcare Systems. Behera, Ranjit Kumar, Amrut Patro, K. Hemant Kumar Reddy, and Diptendu Sinha Roy *International Journal of Reliable and Quality E-Healthcare (IJRQEH)* 11, no. 4 (2022): 1-11
 33. Towards energy efficient Smart city services: A software defined resource management scheme for data centers. Reddy, K. Hemant K., Ashish K. Luhach, V. Vinoth Kumar, Sanjoy Pratihar, Deepak Kumar, and Diptendu S. Roy. *Sustainable Computing: Informatics and Systems* 35 (2022): 100776.
 34. GaitRec-Net: a deep neural network for gait disorder detection using ground reaction force Pandey, Chandrasen, Diptendu Sinha Roy, Ramesh Chandra Poonia, Ayman Altameem, Soumya Ranjan Nayak, Amit Verma, and Abdul Khader Jilani Saudagar. *PPAR research 2022* (2022).
 35. A lightweight device-level Public Key Infrastructure with DRAM based Physical Unclonable Function (PUF) for secure cyber physical systems. Chanda, Susovan, Ashish Kumar Luhach, Waleed Alnumay, Indranil Sengupta, and Diptendu Sinha Roy. *Computer Communications* 190 (2022): 87-98.
 36. JSQE: Joint Surveillance Quality and Energy Conservation for Barrier Coverage in WSNs Shao, Xuemei, Chih-Yung Chang, Shenghui Zhao, Chin-Hwa Kuo, Diptendu Sinha Roy, Xinzhe Pi, and Shin-Jer Yang *Sensors* 22, no. 11 (2022): 4120.
 37. Extended indirect controller-legacy switch forwarding for link discovery in hybrid multi-controller SDN Hussain, Mir Wajahat, Mohammad S. Khan, K. Hemant Kumar Reddy, and Diptendu Sinha Roy. *Computer Communications* 189 (2022): 148-157.
 38. A novel blockchain-based healthcare system design and performance benchmarking on a multi-hosted testbed. Pradhan, Nihar Ranjan, Akhilendra Pratap Singh, Sahil Verma, Navneet Kaur, Diptendu Sinha Roy, Jana Shafi, MarcinWozniak, and Muhammad Fazal Ijaz *Sensors* 22, no. 9 (2022): 3449.
 39. Traffic classification in underwater networks using sdn and data-driven hybrid metaheuristics. Pradhan, B., Gautam Srivastava, D. S. Roy, K. H. K. Reddy, and Jerry Chun-Wei Lin *ACM Transactions on Sensor Networks (TOSN)* 18, no. 3 (2022): 1-15.
 40. MSQAC: maximizing the surveillance quality of area coverage in wireless sensor networks. Dande, Bhargavi, Chih-Yung Chang, Wen-Hwa Liao, and Diptendu Sinha Roy. *IEEE Sensors Journal* 22, no. 6 (2022): 6150-6163.
- (B) Book Chapters:**
1. Blockchain-Based Smart Contract for Transportation of Blood Bank System, NR Pradhan, DA Kumar, AP Singh, *The Role of IoT and Blockchain: Techniques and Applications*, 253-265.
 2. Recent advances on social media analytics and multimedia systems: issues and challenges Thoudam Doren Singh,

Surmila Thokchom, Laiphrakpam Dolendro Singh, Bunil Kumar Balabantaray ,2023, Springer.

3. Zoaya Mohammadi, Smitha Joyce Pinto, Gayadhar Panda, Surmila Thokchom, "A Survey of Cyber Security in Smart Microgrid", Sustainable Energy and Technological Advancements: Proceedings of ISSETA 2021, pp 687-698, Springer Singapore.

(C) Edited Book:

1. Social network analysis (Theory and Applications) , Mohammad Gouse Galett, Chiai AI Atroshi, Bunil Balabantaray, Sachi Nnadan Mohanty ,2022 , Scriver Publishing.

(D) Conferences: (International):

1. Copyright Infringement Detection of Multimedia Objects using KL Transform S Pandey, NR Pradhan, AP Singh, DS Kushwaha, 2022 4th International Conference on Energy, Power and Environment (ICEPE), 1-4.
2. A Deep Learning based Approach to Stock Market Price Prediction using technical indicators Nirupama Parida, Bunil Kumar Balabantaray, Rajashree Nayak, Jitendra Kumar Rout 2023 International Conference on Advances in Intelligent Computing and Applications (AICAPS) 1st to 3rd FEBRUARY 2023
3. Batch Image Encryption and Compression using Chaotic Map Infused Autoencoder Network S. Das, A. Gautam, S. Thokchom, B.K. Balabantaray 2022 IEEE 9th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON) Dec 2022 Machine Learning-Driven
4. Snow Cover Mapping Techniques using Google Earth Engine S. Panda, R. Anilkumar, B.K. Balabantaray, D. Chutia and R. Bharti IEEE 19th India Council International Conference (INDICON) 2022 Nov2022
5. AVENet: Attention based VGG16 with ELM for obscene image classification S. Samal, S. Pandit, B.K. Balabantaray, A.K. Sahani, R. Nayak 3rd International Conference on Frontiers in Computing and Systems (COMSYS-2022) 19th - 21st December 2022
6. ED-NET: Educational Teaching Video Classification Network A. Gautam, S. Hazra, R. Verma, P. Maji, B.K. Balabantaray International Conference on Computer Vision and Machine Intelligence, IIIT Allahabad, Prayagraj, INDIA 12-13 August 2022
7. U-Shaped Xception-Residual Network for Polyps Region Segmentation P. Sharma, B.K. Balabantaray, P. Rangababu Proceedings of International Conference on Frontiers in Computing and Systems: COMSYS 2021 29th September to 1st October 2021
8. IFChatbot: Convolutional Neural Network based chatbot for Image Forgery Detection and Localization N. Manna, S. Kumar, R. Kakar, S. Nayak, J. K Rout, and B.K. Balabantaray 2022 IEEE India Council International Subsections Conference (INDICON) July 15-17, 2022, SAU-NET: Scale Aware Polyp Segmentation using Encoder-Decoder
9. Network A. Gautam, S. Das, P. Sharma, P. Maji and B. K. Balabantaray 2022 IEEE Region 10 Symposium (TENSYP) 1ST - 3RD JULY 2022
10. Melanoma Detection using Advanced Deep Neural Network P. Sharma, A. Gautam, R. Nayak, B.K. Balabantaray 2022 4th International Conference on Energy, Power and Environment (ICEPE) 9.
11. Suchana Das, Anmol Gautam, Surmila Thokchom, Bunil Kumar Balabantaray, "Batch Image Encryption and Compression using Chaotic Map Infused Autoencoder Network", 2022 IEEE 9th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON).
12. D. P. Yadav, D. Kumar and A. S. Jalal, "FHSINet: A hybrid model for the analysis of hyperspectral images," 2022 Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC), Solan, Himachal Pradesh, India, 2022, pp. 708-714, doi: 10.1109/PDGC56933.2022.10053218.

5. Conference /Workshop/Seminar Organized:

Sl. No.	Name of Faculty	Name of the program	Duration
1	Dr. Bunil Kumar Balabantaray	Robotic process automation	20-03-2023 - 25-03-2023
2	Dr. Bunil Kumar Balabantaray	Cultural heritage preservation using machine learning	13 Jun 2022- 26 Jun 2022
3	Dr. Diptendu Sinha Roy & Dr. Akhilendra Pratap Singh	Recent Trends in Realizing Smart Sustainable Cities: Harnessing the Internet of Things based (IoT), Software Defined Networks (SDN) & Services	09th to 20th January 2023

6. Conferences/Workshops/Seminars/Trainings Attended by faculty members:

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Alok Chakrabarty	Two days Master Training Program for faculty on “cyber-attacks and defense” at NIT Silchar by CDAC, Noida	19-20 Dec 2022
2	Dr. Bunil Kumar Balabantaray	Cultural heritage preservation using machine learning	13 Jun 2022- 26 Jun 2022
3	Dr. Bunil Kumar Balabantaray	Robotic process automation	20-03-2023 – 25-03-2023

7. Sponsored Projects:

Sl No.	Title of the Project	Investigators (PI/ Co.-PI)	Funding Agency	Funding Amount	Duration	Status
1	Deep Learning Approach for Preservation of Cultural Heritage	Dr. Bunil Kumar Balabantaray	SERB, Department of Science and Technology (DST), Government of India	2391340	3 years	ongoing

8. Consultancy Projects:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount (INR)	Duration	Status
1	An artificial intelligence approach to solve waste management challenges	Dr. Bunil Kumar Balabantaray	Ficha, France	5000000	3 years	Ongoing. The project funding is dynamic i.e., it depends on the number of AI engineers working. 2022-2025
2	Enhancement of Dermo Choice Application- UI Refinement, Computation API and Privacy Policy	Dr. Bunil Kumar Balabantaray	CHOWIS, SOUTH KOREA	205200	3 Months	Ongoing

9. Administrative Responsibilities Held:

Sl.No.	Name of Faculty	Responsibilities	Duration
1	Dr. Alok Chakrabarty	Chairman, Standing Condemnation/Disposal Committee	12/10/2022 to till date
2	Dr. Bunil Kumar Balabantaray	All regulation related to PG and Research Student	04-11-2022 to till date
3	Dr. Bunil Kumar Balabantaray	All technical events under student activity center	01-07-2022 to till date
4	Dr. Bunil Kumar Balabantaray	CCMT/CCMN/Institute Level admission related works	21-04-2022 to till date

Sl.No.	Name of Faculty	Responsibilities	Duration
5	Dr. Deepak Kumar	Member, DRC	Dec 2020 to Dec 2022
6	Dr. Deepak Kumar	Liaison Officer for OBC	15-01-2022 to 14-01-2024
7	Dr. Deepak Kumar	Member, Time Table Committee	June 2021 to June 2023
8	Dr. Deepak Kumar	Convener, Procurement committee	March 2022 to March 2023
9	Dr. Deepak Kumar	Warden, KT Hostel	01/07/2022 to 30/06/2024

10. Membership of Professional Bodies:

Sl.No.	Name of Faculty	Member of
1	Dr. Diptendu Sinha Roy	Senior Member (IEEE), CSI (Life Member), ISTE (Life Member), Member ACM
2	Dr. Alok Chakrabarty	IEEE, CSI , ACM
3	Dr. Akhileendra Pratap Singh	CSI(LifeMember), ISTE(LifeMember), IEEE
4	Dr. Yogita	Senior Member IEEE
5	Dr. Vipin Pal	Senior Member IEEE
6	Dr. Bunil Kumar Balabantaray	ISTE(LM), Soft Computing Research Society, India. Associate Member (UACEE), Institute of Research Engineers and Doctors, (Membership No:AM10100057923), Member: IEEE and IEEE EMBS Society Member , IEEE CS
7	Dr. Surmila Thokchom	ACM, IEEE
8	Dr. Soumen Moulik	IEEE
9	Dr. Deepak Kumar	IEEE

11. Any other notable information:

Dr. Alok Chakrabarty acted as external examiner for B. Tech. project evaluation in the department of IT, NEHU Shillong Dr. Bunil Kumar Balabantaray was session chair, ICEPE 2022, NIT Meghalaya, Shillong, Meghalaya

12. SE Department activities in photographs:



Figure : Audience attending the inaugural session of the FDP Program on “Recent Trends in Realizing Smart Sustainable Cities: Harnessing the Internet of Things based (IoT), Software Defined Networks (SDN) & Services” during 09th to 20th January 2023

Department of Electrical Engineering

1. Brief Introduction to the Department:

The Department of Electrical Engineering started since the inception of NIT Meghalaya. Presently the department offers B.Tech, M.Tech and Ph.D. Programs. The B. Tech program started in 2010 with an intake of 30 students at NIT Surat and from 2014 onward M.Tech program has been started with an intake of 20 students offering specialization in Power & Energy Systems. Presently there are full-time and part-time research scholars, registered for the Ph.D. program in diverse specializations. The Department aims to impart high-quality education to the students and carry out fundamental and industry-oriented research work. The research interest of faculties encompasses various areas of electrical engineering such as Power system Control, Smart Grid Technology, Synchrophasor Technology, Power Quality and Renewable energy integration to the grid, Power Electronics & Drives, Control Systems and Instrumentation, Signal Processing and Biomedical Instrumentation, High Voltage Engineering, etc. The department has well-equipped laboratory facilities for the students such as Basic Electrical Engineering Lab, Electrical Machine Lab, Network and Systems Lab, Digital Electronics Lab,

Power System Lab, Computational Lab, Control & Instrumentation Lab, Power Electronics Lab, Electric Drives Lab, Microprocessor Lab, Microcontroller & Embedded Systems Lab. Specialized simulation software like Matlab, Simulink, FLUX, PSPICE, PSIM, PSS@E, EMYP etc. is available with the department to carry out experiments and research activities. Besides, the faculty of the EE department is very actively publishing papers in reputed journals and conferences such as IEEE, IET, Elsevier, Springer, Taylor and Francis, Wiley, etc. Moreover, faculty members of the EE department have received several sponsored research projects from various agencies like SERB-DST, CPRI, REC, and the State Council of Science Technology & Environment (SCSTE, Govt. of Meghalaya).

2. Programmes Offered:

Currently, the department is offering

- B.Tech in EEE
- M.Tech in Power & Energy Systems (Full-Time as well as Sponsored Part-Time)
- Ph.D. in various Specializations (Full-Time as well as Part-Time)

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. Guiding (Ongoing)	Guided/ Thesis Submitted
Dr. S. Debbarma	Assistant Professor	B.E, M.Tech, Ph.D	Power Systems	19 June 2012	05	01
Dr. P. P. Singh	Assistant Professor	B.Tech, M.Tech, Ph.D	Control Systems	31 May, 2016	03	Nil
Dr. Rakesh Roy	Assistant Professor	B.E, M.Tech, PhD	Power Electronics & Electric Machine Drives	03 January 2013		
Dr. Shaik Affijulla	Assistant Professor	B.Tech, M.Tech, Ph.D	Power Systems	03 January 2013	02	01
Dr. Ksh Milan Singh	Assistant Professor	B.Tech, M.Tech, PhD	Instrumentation and Signal Processing	24 May 2016	03	Nil
Dr. Atanu Banerjee	Associate Professor	B.E, M.Tech, PhD	Power Electronics & Drives	25 August, 2014	07	03
Dr. Gayadhar Panda	Professor	Ph.D	Power Electronics	29 January 2013		
Dr. Supriyo Das	Assistant Professor	B.Tech, M.Tech, Ph.D	High Voltage Engineering	25 th August 2014	0	0
Dr. Ramyani Chakrabarty	Trainee Teacher	B.Tech, M.Tech, Ph.D. (Pursuing)	Power & Control	21 st July, 2014	0	0

4. Staff Profile:

Name	Designation	Qualification	Date of Joining	Nature of Job
Mr. Sushanta Nath	Technical Assistant	B.E (NIT Agartala) M.Tech (NIT Meghalaya)	13/08/2012	Regular
Mr. Bankitbok Laloo	Technical Assistant	Diploma	16/12/2021	Regular
Mr. Ankur Rai	Technical Assistant	M.Tech (NIT Nagaland)	22/12/2021	Regular
Mr. Felix Albert Nongneng	Technician	M.Tech (IIT Madras)	14/12/2021	Regular
Mr. Rishandonborlang Mawrie	Technician	B.Tech	16/12/2021	Regular
Mr. Nangskhem Khongwir	Technician	B.Tech	20/12/2021	Regular
Ms. Julene Seka H Thabah	Technician	M.Tech	13/12/2021	Regular
Mr. Vicky Staryson Wahlang	Lab Attendant	B.Tech	23/12/2021	Regular

5. List of Publications:

(A) Journals:

- S. D. Roy and **S. Debbarma**, "Imposter Attacks in Energy Market Operation," in *IEEE Transactions on Smart Grid*, vol. 13, no. 5, pp. 3836-3839, Sept. 2022.
- Siddhartha Deb Roy, **S. Debbarma**, Josep. M. Guerrero, A Data-driven Algorithm to Detect False Data Injections Targeting both Frequency Regulation and Market Operation in Power Systems, *International Journal of Electrical Power & Energy Systems*, Elsevier, Vol. 143, December 2022, 108409.
- Sugandha K and P. P. Singh, "Generation of Multi-scroll Chaotic System via Smooth State Transformation, *Journal of Computational Electronics*", vol. 21, no. 04, pp. 781-791, April 2022.
- Prakash Chandra Gupta and **Piyush Pratap Singh**, "Multistability, multiscroll chaotic attractors and angle instability in multi-machine swing dynamics", *IFAC-Papers Online*, Vol. 55, pp. 572-578, May 2022.
- Piyush Pratap Singh** and Binoy Krishna Roy, "Pliers shaped coexisting bifurcation behaviors in a simple jerk chaotic system in comparison with 21 reported systems", *IFAC-Papers Online*, Vol. 55, pp. 920-926, May 2022.
- P. P. Singh** and B. K. Roy, "Chaos and Multistability Behaviors in 4D Dissipative Cancer Growth/Decay Model with Unstable Line of Equilibria", *Chaos, Solitons and Fractals*, vol. 161, pp. 112312, June 2022.
- P. P. Singh**, Ankur Rai and B. K. Roy, "Memristor-based asymmetric extreme multistable hyperchaotic system with a line of equilibria, coexisting attractors, its implementation and nonlinear active-adaptive projective synchronisation", *The European Physical Journal Plus*, vol. 137, Article ID: 875, July 2022.
- Prakash Chandra Gupta, and **P. P. Singh**, "Chaos, multistability and coexisting behaviours in small-scale grid: Impact of electromagnetic power, random wind energy, periodic load and additive white Gaussian noise", *Pramana - J. Phys*, vol. 97, no. 3, December 2022.
- P. P. Singh**, Manashita Borah, Asim Datta, Sajad Jafari and Binoy K. Roy, "Integer cum fractional ordered active-adaptive synchronization to control vasospasm in chaotic blood vessels to reduce risk of COVID-19 infections", *International Journal of Computer Mathematics*, vol. xx, no. xx, pp. xx, Jan 2023. DOI: 10.1080/00207160.2022.2163167
- S. K. Prince, **Shaik Affijulla** and **G. Panda**, "Protection of DC microgrids based on complex power during faults in on/off-grid", *IEEE Transactions on Industry Applications*, vol. 59, no. 01, pp. 244-254, 2023.
- S. L. Chukkaluru and **Shaik Affijulla**, "Review of discrete Fourier transform during dynamic phasor estimation and the design of synchrophasor units", *The ECTI Transactions on Electrical Engineering, Electronics, and Communications*, vol. 21, no. 01, pp. 01-18, 2023.
- S. L. Chukkaluru and **Shaik Affijulla**, "Chirp Z-Transform based dynamic phasor estimator suitable for phasor measurement units in electric grid", *Springer Journal of Control, Automation and Electrical Systems*, vol. 34, no.01, pp. 216-229, 2023.
- S. K. Prince, K. P. Panda, R.T. Naayagi, P. Sanjeevikumar, B. Khan, **Shaik Affijulla** and **Gayadhar Panda**, "Challenges and Advancements in Protection of DC Microgrid System-A Comprehensive Review", *Taylor & Francis - Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, vol. 44, no. 04, pp. 10481-10505, 2022.
- Aniruddha Agrawal, Donnagratia Syndor, Dallang M Momin and **Shaik Affijulla**, "Theorems to explore the nature of

- cyber attacks on power system voltage stability”, *De Gruyter International Journal of Emerging Electric Power Systems*, vol. 23, no. 04, pp. 451-464, 2022.
15. Aniruddha Agrawal and **Shaik Affijulla**, “A concept for discrimination of electrical fault from cyber attack in smart electric grid”, *Journal of Electrical Engineering: Journal of Slovak University of Technology*, vol. 73, no. 04, pp. 299-304, 2022.
 16. S. K. Prince, **Shaik Affijulla** and **G. Panda**, “A fault detection technique based on line parameters in ring-configured DC microgrid”, *De Gruyter International Journal of Emerging Electric Power Systems*, vol. 23, no. 04, pp. 523-542, 2022.
 17. S. L. Chukkaluru, A. Kumar and **Shaik Affijulla**, “Tensor based dynamic phasor estimator suitable for wide area smart grid monitoring applications”, *Springer Journal of Control, Automation and Electrical Systems*, vol. 33, no. 01, pp. 955-964, 2022.
 18. Mukesh Kumar and **Shaik Affijulla**, “On-line estimation of alternators rotor angle dynamics in the modern power system”, *Elsevier International Journal of Electrical Power & Energy Systems*, vol. 134, no. 107314, pp. 01-09, 2022.
 19. Abhishek Chauhan and **Ksh. Milan Singh**, “Recursive sliding DFT algorithms: A review,” *Elsevier, Digital Signal Processing*, vol. 172, no. 103560, pp. 1-15, July, 2022 (DOI:10.1016/j.dsp.2022.103560)
 20. Priyankar Roy, **Atanu Banerjee**, “A study on performance parameters of three-level T-type inverter based PMSM drives for electric vehicles applications”, *Electrical Engineering, Springer*, doi.org/10.1007/s00202-023-01779-6, February,2023.
 21. Manish Kurre, Shailesh Deshmukh, Rajdeep Tandekar, Pratikanta Mishra, **Atanu Banerjee** “A Low-Cost Control Architecture for Buck Converter Fed VSI Based BLDC Motor Drive” *International Journal of Engineering Research in Africa*, ESCI, Vol. 62, pp 161-171, September,2022
 22. Manish Kurre, **Atanu Banerjee**, “Zero voltage switching self-oscillating PWM inverter in induction heating applications” *Journal of Engineering Research*, SCI, DOI: 10.36909/jer.16717, May,2022.
 23. N. Hari Charan, **A. Bandyopadhyay**, Josep M Guerrero, “ Performance Evaluation of Single-Phase Boost-Type Cascaded H -Bridge Inverter in the Applications of Grid-Tied Photovoltaic Systems” in *IEEE Journal of Emerging and Selected Topics in Power Electronics*, DOI: 10.1109/JESTPE.2023.3249905 , February,2023.
 24. Patowary, M., Haes Alhelou, H., **Panda, G.:** Performance assessment and validation of inverter control current controllers in reduced sensor maximum power point tracking based photovoltaic grid tied system. *IET Energy Syst. Integr.* 4(4), 505–517(2022).
 25. Anurekha Nayak, Manoj Kumar Maharana, Tarlochan Sidhu, Sanjeevikumar Padmanaban & **Gayadhar Panda** (2022) Frequency regulation of a maiden structured power system with integrated renewable energy source by a fuzzy - tuned fractional order controller, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 44:3, 7841-7856.
 26. P. Buduma, M. K. Das, R. T. Naayagi, S. Mishra and **G. Panda**, “Seamless Operation of Master–Slave Organized AC Microgrid With Robust Control, Islanding Detection, and Grid Synchronization,” in *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 6724-6738, Sept.-Oct. 2022.
 27. K. P. Panda, P. R. Bana, R. T. Naayagi and **G. Panda**, “A Dual-Source Self-Balanced Switched-Capacitor Reduced Switch Multilevel Inverter With Extending Ability,” in *IEEE Access*, vol. 10, pp. 61441-61450, 2022.
 28. M. Kumar, K. P. Panda, J. C. Rosas-Caro, A. Valderrabano-Gonzalez and **G. Panda**, “Comprehensive Review of Conventional and Emerging Maximum Power Point Tracking Algorithms for Uniformly and Partially Shaded Solar Photovoltaic Systems,” in *IEEE Access*, vol. 11, pp. 31778-31812, 2023.
 29. Sao, Jitendra Kumar, **Panda, Gayadhar**, Ray, Pravat Kumar, Patidar, Ram Dayal and Swain, Sushree Diptimayee. “Parameter optimization of PV integrated Shunt Active power filter with Taguchi SNR” *International Journal of Emerging Electric Power Systems*, 2022
- (B) Book chapters:**
1. **P. P. Singh**, “Nonlinear Systems: Chaos, Advanced Control and Applications”, *Nova Science Publishers, Inc. 400 Oser Ave Suite, 1600 Hauppauge, NY, USA*, May 2022. ISBN: 978-1-68507-660-3 (Book)
 2. Abhishek Chauhan and **Ksh Milan Singh**, “Sustainable Energy and Technological Advancements, Chapter “*Doppler Velocity Estimation Employing mHDFT Phase Locked Loop*” *International Symposium on Sustainable Energy and Technological Advancements PP. Springer*, PP. 773-784, 2022. (Book Chapter)
- (C) Conferences:**
1. Koley, G. K. Panda, S. Debbarma, A. C. Atoche and A. Datta, “Plug-in Electric Vehicle Aided Load Frequency Control using Cascaded Controller in Microgrid System,” *2023 IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies* (GlobConHT), Male, Maldives, 2023, pp. 1-7, doi: 10.1109/GlobConHT56829.2023.10087793.

2. S. D. Roy and S. Debbarma, "Deep Learning for Classification of FDIs on Time-Series Sensor Data in Cyber-Physical Power Systems," **2022 IEEE 21st Mediterranean Electrotechnical Conference (MELECON)**, Palermo, Italy, 2022, pp. 665-670, doi: 10.1109/MELECON53508.2022.9843077.
3. S. D. Roy and S. Debbarma, "A Survey on the Security Vulnerabilities in the Cyber-Physical Power Systems," **2022 4th International Conference on Energy, Power and Environment (ICEPE)**, Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9798028.
4. S. D. Roy and S. Debbarma, "Imposter Attacks Against Data Integrity to Disrupt Power Balancing in Power Systems," **2022 4th International Conference on Energy, Power and Environment (ICEPE)**, Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9797987.
5. I. Koley, A. Datta, G. K. Panda and S. Debbarma, "TLBO Optimised PID Controller for Coordinated Control in a Hybrid AC/DC Microgrid," **2022 4th International Conference on Energy, Power and Environment (ICEPE)**, Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9798062.
6. Deep Kumar Biswas and Piyush Pratap Singh, DC Microgrid Power Management by Cascaded PI Control of HESS, **4th IEEE Int. Conference on Energy, Power and Environment (ICEPE)**, NIT Meghalaya, India, 29 April - 01 May, 2022.
7. Piyush Pratap Singh and Binoy Krishna Roy, Secure Communication and Image Encryption via Non-identical Chaotic Systems Synchronisation using Sliding Mode Control, **4th IEEE Int. Conference on Energy, Power and Environment (ICEPE)**, NIT Meghalaya, India, 29 April - 01 May, 2022.
8. Saikumar Puppala, Devendra P., Piyush Pratap Singh, Design of Solar PV System with Single Input-Multi Output (SIMO) DC-DC Converter for Remote Area Applications, **2nd International Symposium on Sustainable Energy and Technological Advancements (ISSETA)**, NIT Meghalaya, India, 24-25 February 2023.
9. Prakash Chandra Gupta, and Piyush Pratap Singh, Nonlinear behaviour of rotor angle dynamics in three machine infinite bus power system, **2nd International Symposium on Sustainable Energy and Technological Advancements (ISSETA)**, NIT Meghalaya, India, 24-25 February 2023.
10. Piklu Das and Piyush Pratap Singh, Non-singular Terminal Sliding Mode Chaos Control of 3-Bus Power System Model, **IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)**, Male City, Maldives, 11-12 March, 2023.
11. P. V. Rajesh Varma and Shaik Affijulla, "Impact analysis of symmetrical/sequence domain parameters during dynamics in the power system", **Sustainable Energy and Technological Advancements: Proceedings of ISSETA 2023**, Springer Book Chapter, Singapore, pp. 1-8, Mar 2023.
12. V. Wahlang and Shaik Affijulla, "Impact of Induced Currents during Shunt Faults in HVAC Transmission Lines", **Sustainable Energy and Technological Advancements: Proceedings of ISSETA 2023**, Springer Book Chapter, Singapore, pp. 1-8, Mar 2023.
13. A. P. Vishwakarma, Shaik Affijulla and K. M. Singh, "Comparative Analysis of Optimally Tuned PI Controller Based SAPF for Harmonic Elimination", **IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)**, Male, Maldives, pp. 1-6, Feb 2023.
14. P. V. Rajesh Varma and Shaik Affijulla, "Anti-aliasing Filter Leakage Characteristics for Utilization in Phasor Measurements Units", **IEEE 10th Power India International Conference (PIICON)**, New Delhi, India, pp. 1-6, Nov 2022.
15. S. K. Dalai, S. K. Prince, A. Abhishek, Shaik Affijulla and G. Panda, "Power Management Strategies for Islanding and Grid-Connected DC Microgrid Systems with Multiple Renewable Energy Resources", **IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)**, New Delhi, India, pp. 1-6, Sep 2022.
16. A. Sridhar, K. Ravindra and Shaik Affijulla, "A review on architecture of electricity markets", **IEEE 4th International Conference on Energy, Power and Environment (ICEPE)**, Shillong, India, pp. 1-6, May 2022.
17. Subhasis Bandopadhyay, Atanu Bandyopadhyay, Ashoke Mondal, Pradip kumar Sadhu, "Harmonic Reduction and Power Quality Improvement in Distributed Power Flow Controller by Space Vector PWM", **5th international conference on Energy Systems, Drives and Automations: ESDA2022, Applied Computer Technology, Kolkata**, 31st December, 2022-1st January, 2023.
18. Manish Kurre, Priyankar Roy, Atanu Banerjee, Pradip Kumar Sadhu, "Nine level asymmetrical switched capacitor multilevel inverter fed induction heated autoclave system for medical applications", **5th international conference on Energy Systems, Drives and Automations: ESDA2022, Applied Computer Technology, Kolkata**, 31st December, 2022-1st January, 2023.
19. Bodhisatwa Bhattacharya, Atanu Banerjee "A comparison of STATCOM and modified-UPFC 3-level inverters in renewable energy", **5th international conference on Energy Systems, Drives and Automations: ESDA2022**, 31st December, Applied Computer Technology, Kolkata, 2022-1st January, 2023.
20. Edapha Rhema Jones Chullai and Atanu Banerjee "Application of a BDDC bidirectional brushless DC drive on a pump hydro energy storage system", **5th international**

- conference on Energy Systems, Drives and Automations: ESDA2022**, 31st December, Applied Computer Technology, Kolkata, 2022-1st January, 2023.
21. Edapha Rhema Jones Chullai , Atanu Banerjee , Pradip Kumar Sadhu, "Experimental investigation of a grid-tied high efficiency reversible Pump-turbine energy storage system employing an adjustable BLDC drive" , **5th international conference on Energy Systems, Drives and Automations: ESDA2022**, 31st December, Applied Computer Technology, Kolkata, 2022-1st January, 2023.
 22. Priyankar Roy, Atanu Banerjee, "A Microcontroller Based Battery Charger Prototype using TRIAC AC Voltage Controlling"- **5th international conference on Energy Systems, Drives and Automations: ESDA2022**, 31st December, Applied Computer Technology, Kolkata, 2022-1st January, 2023.
 23. HARI CHARAN N and A Bandyopadhyay, "A Single-Stage Boost-Type Cascaded H-bridge Multilevel Inverter" accepted for presentation in **2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)** , MNIT Jaipur during 14th -17th December, 2022.
 24. P Roy, M Kurre and A Bandyopadhyay, " GH-reference frame based SVPWM controlled T-type NPC inverter fed PMSM drive for Electric Vehicle applications" accepted for presentation in **2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)** , MNIT Jaipur during 14th -17th December, 2022.
 25. S. K. Dalai, K. P. Panda, R. Thakur and G. Panda, "Three Phase Multilevel Switched Capacitor Inverter for Low/High Voltage Applications using PD-PWM Technique," **2023 IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)**, Male, Maldives, 2023, pp. 1-6.
 26. A. Bharatee, P. K. Ray, A. Ghosh and G. Panda, "Implementation of Composite Storage System in a PV-Integrated DC Microgrid for Active Power Sharing," **2023 IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)**, Male, Maldives, 2023, pp. 1-6.
 27. M. Kumar, K. P. Panda, J. Moharana, R. Thakur and G. Panda, "Hybrid Energy Source Based BLDC Motor Drive for Electric Vehicle Application," **2023 2nd International Conference for Innovation in Technology (INOCON)**, Bangalore, India, 2023, pp. 1-6.
 28. S. Samal, P. Nayak, R. K. Mallick, A. Bhoi, S. Mishra and G. Panda, "Harmonic Estimation of PV - Integrated Microgrid Using Kalman Filter," **2022 IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)**, New Delhi, India, 2022, pp. 1-6.
 29. S. K. Dalai, S. K. Prince, A. Abhishek, S. Affijulla and G. Panda, "Power Management Strategies for Islanding and Grid-Connected DC Microgrid Systems with Multiple Renewable Energy Resources," **2022 IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)**, New Delhi, India, 2022, pp. 1-6.
 30. M. Kumar, G. Panda and D. V. S. K. R. K, "Analysis of Conventional and Interleaved Boost Converter with Solar Photovoltaic System," **2022 International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)**, Hyderabad, India, 2022, pp. 1-6.
 31. S. Sahoo, P. S. Puan and G. Panda, "Power control of a variable speed DFIG based wind turbine using two fuzzy logic controllers," **2022 International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)**, Hyderabad, India, 2022, pp. 1-5.
 32. S. K. Dalai, S. K. Prince, K. P. Panda and G. Panda, "Harmonic Mitigation in a Grid Interfacing PV Assisted Three-Phase Multilevel Switched Capacitor Inverter," **2022 International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)**, Hyderabad, India, 2022, pp. 1-6.
 33. B. V. S. Prasad, N. Saha and G. Panda, "Parameter Extraction of PV Module using CamWOA Technique," **2022 International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)**, Hyderabad, India, 2022, pp. 1-5.
 34. S. S. Rath *et al.*, "Protection Study in 9-Generator Power System Under Grid-Connected Mode of Operation," **2022 International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)**, Hyderabad, India, 2022, pp. 1-5.
 35. N. Saha, S. K. Sahoo, A. K. Swain, S. Panda and G. Panda, "Parameter Extraction of PV Module using Proposed BESAS Technique," **2022 IEEE IAS Global Conference on Emerging Technologies (GlobConET)**, Arad, Romania, 2022, pp. 453-458.
 36. T. S. V. S. P. Teja, S. K. Prince, M. R, D. Adhikari, N. B. P and G. Panda, "Enhancement of Power Quality with a Wind-Integrated Shunt Active Power Filter," **2022 4th International Conference on Energy, Power and Environment (ICEPE)**, Shillong, India, 2022, pp. 1-6.
 37. A. Panda and G. Panda, "Modular multilevel inverter configuration with lesser switch counts," **2022 4th International Conference on Energy, Power and Environment (ICEPE)**, Shillong, India, 2022, pp. 1-5.

6. Conference/ Workshop/ Seminar Organized:

1. Organized **2nd International Symposium on Sustainable Energy and Technological Advancements**, which is being organized by the Department of Electrical Engineering, NIT Meghalaya, Shillong, India during 24th – 25th February, 2023.
2. **Organized 4th International Conference on Energy, Power & Environment**, Sponsored by IEEE Kolkata, IEEE IAS, IEEE Guwahati Subsection, NIT Meghalaya, 29 April – 01 May 2022.



Fig 1: 2nd International Symposium on Sustainable Energy and Technological Advancements during 24th – 25th February 2023.



Fig 2: 4th International Conference on Energy, Power and Environment during 29 April – 01 May 2022.

7. Conferences / Workshops / Seminars / Training Attended by faculty members:

Sl. No.	Name of Faculty	Name of the Programme Attended
1	Dr. S. Affijulla	NIL
2	Dr. A. Banerjee	NIL
3	Dr. G. Panda	1
4	Dr. Ksh Milan Singh	3
5	Dr. P. P. Singh	3
6	Dr. S. Debbarma	NIL
7	Dr. R. Roy	NIL
8	Dr. Supriyo Das	NIL
9	Ms. Ramyani Chakrabarty	NIL

8. Invited Talks Delivered:

(i) Dr. S. Debbarma:

Delivered Talk on “**Application of Data Analytics in Power System**”, HRD Training Program on 01-02, December 2022 at NERLDC, POSOCO, Shillong.

(ii) Dr. S. Affijulla:

Delivered Talk on “**Fundamentals of Phasor Measurement Units**”, HRD Training Program on 01-02, December 2022 at NERLDC, POSOCO, Shillong.

9. Sponsored Projects

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Design and development of Multilevel Inverter based Distributed Power Flow Controller (DPFC) FACTS for a grid integrated system with renewable energy sources	PI	CPRI, Govt. of India	34 lakh	2 years	Ongoing

10. Awards Won/ Recognition received at the national and international level:

- Dr. Sanjoy Debbarma, was awarded the “**Global Research Excellence Award**” at IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies 2023, organized by Maldives National University, Male, Maldives during 11-12, March 2023.
- Dr. Rakesh Roy, Assistant Professor, EE Dept, received first prize at **Techno Exhibit - 2022** organized by NIT Meghalaya & SCSTE during 11 - 12 May 2022.
- Mr. Priyankar Roy & Mr. Raja Gandhi, Ph.D. Scholars of the EE Dept., received North East India Student Travel Awards, at the **10th IEEE International Conference on Power Electronics, Drives & Energy Systems** (IEEE PEDES 2022) from 14-17 December 2022, held at NIT Jaipur.
- Dr. Siddhartha Deb Roy, Ph.D. Scholar, EE Dept., has received the “Best Paper Award” at **4th IEEE ICEPE 2022**, 29 April – 01 May 2022, for the paper entitled “**Imposter Attacks Against Data Integrity to Disrupt Power Balancing in Power Systems**”.

11. Patents:

1	Dr. Atanu Banerjee	Pradip K. Sadhu, Agamani Chakraborty, Atanu Bandyopadhyay & Nitai Pal “A System for Induction Heated Sterilization of Surgical Instruments and a Method for the Same”- Published in Journal of Intellectual Property India (Journal No-49/2014), Department of Industrial Policy & Promotions, Government of India, December, 2014, page no: 12723 & Patent (Application No: 1052/KOL/2014,dated 16.10.2014) is granted, August,2022, patent no. 403045.
2	Dr. G. Panda	Satyavarta Kumar Prince, Kaibalya Prasad Panda, Shaik Affijulla and Gayadhar Panda, “GRID- RESILIENT SOLAR PHOTOVOLTAIC FED SHUNT ACTIVE POWER FILTER SYSTEM AND CONTROL METHOD THEREOF”, Indian Patent Filed and the Patent Application No: 202331005669, dated: 2/10/2023.

12. Administrative Responsibilities Held at NIT Meghalaya:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. S. Debbarma	HOD, EE Dept.	1 July 2020- Till date
		Member, Construction & Development of NIT Meghalaya Permanent Campus	28, Feb 2020 – till date.
		Member, Academic Program Committee (APC)	31/8/2020 - Till date
		Chairman, Departmental Research Committee (DRC), EE Department	1st July 2020 - Till date
		Special Invitees, SENATE	1st July 2020 - Till date
2	Dr. P. P. Singh	PIC, Institute Security	3.5 Years - Till date
		SAC Sport Committee, Outdoor Club,	July 2022 - Till date
		Faculty Advisor, M.Tech 1 st and 2 nd Year (EE)	5 Years - Till Dec. 2022
		Faculty Advisor, B. Tech 3rd Year (EE),	Dec. 2022-Till date
3	Dr. Rakesh Roy	UGPIC	01/07/2021- Till date
4	Dr. Atanu Banerjee	Dean (AA)	1 st July,2022-till date
		MERITE Coordinator, TEQUIP-IV	29 th June,2022-till date
		CVO	September,2020-till date
		GIAN Institute Coordinator	July,2022-till date
		IQAC Chairman	1 st July,2021-30 th June,2022
6.	Prof. Gayadhar Panda	Dean (Academic Affairs)	Oct.-2018 to July- 2022
		Director	Feb 2023-till Date
7	Dr. S. Affijulla	Chairman, Class Routine Committee	2021 – Till date
		Coordinator, B.Tech Admission 2022	2022 – Till date
		Convener, IQAC	2022 – Till date
8	Dr. Ksh. Milan Singh	Vice President SAC NIT Meghalaya	22nd June 2020 till date
		Faculty Advisor, B. Tech 2rd Year (EE),	Dec. 2022-Till date

13. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Membership
1.	Dr. S. Debbarma	Senior Member IEEE, IEEE PES Society, IEI (India)
2.	Dr. P. P. Singh	Senior Member IEEE, IEEE Control System Society, IEI (India), Automatic Control & Dynamic Optimization Society (ACDOS), Member
3.	Dr. Rakesh Roy	IEEE, IEI
4.	Dr. Shaik Affijulla	Senior Member IEEE, IEI

Sl. No.	Name of Faculty	Membership
5.	Dr. Atanu Banerjee	IEEE, IEI
6	Dr. Ksh Milan Singh	Senior Member IEEE, IEI
7	Prof. Gayadhar Panda	Senior Member IEEE, Fellow IE (I), Life Member ISTE
8	Dr. Supriyo Das	Senior Member IEEE, IEEE DEIS society & IEEE PES society
9	Dr. Ramyani Chakrabarty	IEEE Students Member

14. Any Other Information on Professional Activities:

(i) Prof. G. Panda

- Associate Editor in *International Transactions on Electrical and Energy Systems (ITEES)*, Wiley, from Feb-2021 to till date.
- Editorial Board Member in *International Journal of Emerging Electric Power Systems, De Gruyter* from Feb-2021 to till date.
- Associate Editor in *International Journal of Renewable Energy Technology*, Inderscience Publishers Ltd from July 2020 to till date.

(ii) Dr. Ksh Milan Singh

- Session Chair in *IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)* March 11-12, 2023, The Maldives National University, Male City, Maldives
- Organized selection event of “**SMART INDIA HACKATHON 2022**” for 5th edition of SIH-2022 under the Government of India on 25th March 2022 (College SPOC for SIH-2022)
- Organized “TECHNO EXHIBIT 2022” in collaboration

with State Council of Science, Technology & Environment (SCSTE), Meghalaya during 11th – 12th May 2022

(Coordinator)

- Organized an Expert Talk for Dr. Sayonsom Chanda, CEO Plexflo, “How to Start a Start-up” on 7th September 2022 **(Coordinator)**
- Organized an Expert Talk for Dr. Rajiv Kangabam, Manager-BRTC, KIIT-TBI on “Biotechnology Ignition Grant- North East (BIG-NE)” on 21st September 2022 **(Coordinator)**
- Organized an Expert Lecture for Professor Ajit Panda, Senior Director at VVDN Technologies on “Training, Research, Incubation leads to Industry, and Entrepreneurship” during Induction Program-2022 under CIIE, NIT Meghalaya on 1st December 2022 **(Coordinator)**

(iii) Dr. S. Debarma

- Member, Executive Committee (EXECOM), *IEEE Guwahati Subsection*.
- Chairman/Convenor, Young Professional Development Committee, *IEEE Guwahati Subsection*.

(iv) Dr. P. P. Singh

- Member, Executive Committee (EXECOM), *IEEE Guwahati Subsection*.

Department of Electronics and Communication Engineering

1. Brief Introduction to the Department:

The Department of Electronics and Communication Engineering (ECE) was established in 2010 with the inception of National Institute of Technology Meghalaya. The department offers B. Tech Programme with an intake capacity of thirty & M.Tech Programme with an intake capacity of twenty in VLSI and Embedded Systems and Ph.D. program in various specialized areas of Electronics and Communication Engineering. The major objective of the Department is to impart high-quality technical education and research with a strong foundation in Electronics and Communication Engineering.

The major research groups of the department are Microelectronics, Microwave and Communication, Signal and Image processing. The major areas of faculty expertise of the department include High Speed and Low Power VLSI Systems, VLSI Architectures, Computer Arithmetic, Microelectronics Device and MEMS, High-Performance Computing, Communication and RF & Microwave Engineering, Antenna design, Signal and Speech Processing, Biomedical Signal Processing and Machine learning.

2. Programmes Offered:

- B. Tech in Electronics and Communication Engineering
- M.Tech in VLSI and Embedded Systems (Full Time & Part Time)
- Ph. D (Full Time & Part Time)

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remark
Dr. Anup Dandapat	Associate Professor	Ph.D	Low Power VLSI, Low Power Digital Circuits, Low Power High Speed Multipliers, Low Power High Speed Memories	20.12.2012	Pursuing –1 Awarded – 8	Regular -8
Dr. Prabir Kumar Saha	Assistant Professor	Ph.D	VLSI Design, Computer Arithmetic, Digital Signal Processing, Reconfigurable Computing	13.06.2012	Pursuing –4 Awarded –2 Submitted-0	Regular - 1 Part time – 2 Co supervisor - 1
Dr. P Rangababu	Assistant Professor	Ph.D	FPGA-based Embedded Systems for Multimedia and DSP Applications, VLSI Chip Design, Reconfigurable Systems for Medical Diagnosis	11.08.2014	Pursuing –7 Awarded - 3	Regular - 1 Part time - 6
Dr. Pradeep Kumar Rathore	Assistant Professor	Ph.D	Micro-Electro-Mechanical Systems (MEMS), Microelectronics, Device Fabrication Technology	11.08.2014	Pursuing – 4 Awarded– 1	Regular -2 Part time - 2
Dr. Bishnulatpam Pushpa Devi	Assistant Professor	Ph.D	Image processing, Hyperspectral Image Analysis, Digital Watermarking	03.01.2013	Pursuing –3	Regular - 2 Part time - 1
Dr. Abhishek Sarkhel	Assistant Professor	Ph.D	Microwave metamaterials and its applications, Microwave antennas	23.08.2013	Pursuing – 4	Regular -2 Part time –1 Co supervisor- 1
Dr. Shubhankar Majumdar	Assistant Professor	Ph.D	RF, High Speed and Power Semiconductor Devices, VLSI circuit design and Modeling Low cost Energy efficient system for Agriculture & Health Sector	13.12.2017	Pursuing –7	Regular - 2 Part time - 1 Project - 4
Dr. Salam Shuleenda Devi	Assistant Professor	Ph.D	Medical Image Analysis, Cancerous cell analysis, Pattern recognition, machine learning	24.09.2019	Pursuing – 3	Part time - 1 Regular - 2

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remark
Dr. Satyendra Singh Yadav	Assistant Professor	Ph.D	Wireless Communication (5G and Beyond), Parallel Computing, Machine Learning	24.10.2019	Pursuing –1	
Dr. Shravan Kumar Bandari	Assistant Professor	Ph.D	Beyond 5G communications, multi-carrier waveforms for next-generation wireless systems, cognitive radio and machine learning algorithms	30.09.2019	Pursuing – 4	Full-time - 3 Part time - 1
Prof. Israel Cohen	Adjunct Professor	Ph.D	Statistical signal processing, analysis and modeling of acoustic signals, speech enhancement, noise estimation, microphone arrays, source localization, blind source separation, system identification and adaptive filtering.	06.10.2021		
Prof. N C Shivaprakash	Adjunct Professor	Ph.D	Electronic Instrumentation, Analytical Instrumentation, Embedded systems and Development of a high pressure DTA and its applications	01.04.2022		
Prof. Ganapati Panda	Adjunct Professor	Ph.D	Electronics and Communication Engineering (Digital Signal Processing/Distributed Signal Processing/Digital Communication /Sensor Networks/Intelligent Instrumentation/Soft Computing/ Evolutionary Computing/ Computational Finance)			
Prof. Ranjan K. Mallik	Adjunct Professor	Ph.D	Channel modeling for wireless communications, space-time systems, cooperative communications, multiple-access systems, power line communications, molecular communications, difference equations, and linear algebra			

4. List of Publications:

a) Journals:

- S. K. Bandari, Satyendra Singh Yadav, V.V. Mani, “ Analysis of GFDM in generalized n - μ fading channel: A simple probability density function approach for beyond 5G wireless applications”, in AEU-International Journal of Electronics and Communications, Elsevier, Vol. 153, pp. 1-9, 154260, ISSN 1434-8411, 2022.
- S. W. Hussain, T. V. Mahendra; S. Mishra; A. Dandapat, “SMS-CAM: Shared Matchline Scheme for Content Addressable Memory” in the Integration the VLSI Journal, Elsevier. <https://doi.org/10.1016/j.vlsi.2022.08.013> Vol-88, pp-70-79, Jan-2023.
- Keshab Das, A. Dandapat, “Design of a 1.29-1.61 GHz LC-VCO with Improved Phase Noise and Figure-of Merit (FoMT) for GPS and Satellite Navigation” in the Journal of Circuits, Systems, and Computers, vol-31, issue-16, 2022.
- Kattekola, Naresh, and Shubhankar Majumdar. “A novel design of N-bit approximate comparator for image processing applications.” Circuit World ahead-of-print (2022).
- Bhargava, Gaurav, Valeria Vadalà, Shubhankar Majumdar, and Giovanni Crupi. “Auto encoder based hybrid machine learning model for microwave scaled GaAs pHEMT devices.” International Journal of RF and Microwave Computer Aided Engineering 32, no. 11 (2022): e23339.

6. GS Chetia, BP Devi, "Estimation of sub-endmembers using spatial-spectral approach for hyperspectral images", *International Journal of Wavelets, Multiresolution and Information Processing*, 21, 2023, 2250047
 7. Dutta, Rahul, Jeet Ghosh, and Abhishek Sarkhel. "Planar Frequency Selective Surface-Based Switchable Resorber/Absorber for Airborne Application." *IEEE Antennas and Wireless Propagation Letters* 21, no. 9 (2022): 1842-1846.
 8. Ghosh, Soumendu, Jeet Ghosh, Moirangthem Santoshkumar Singh, and Abhishek Sarkhel. "A Low-Profile Multifunctional Metasurface Reflector for Multiband Polarization Transformation." *IEEE Transactions on Circuits and Systems II: Express Briefs* (2022).
 9. Singh, Moirangthem Santoshkumar, Sourav Roy, Jeet Ghosh, Ujjal Chakraborty, Soumendu Ghosh, and Abhishek Sarkhel. "Design and Analysis of Compact Dual-Band Antenna System for Scalp and Skin Implantation." *Progress in Electromagnetics Research C* 125 (2022).
 10. Ghosh, Jeet, Rahul Dutta, Abhishek Sarkhel, and Qammer H. Abbasi. "Design of miniaturize flexible wideband frequency selective surface for electromagnetic shielding application." *Waves in Random and Complex Media* (2022): 1-21.
 11. Rekeb Uddin Ahmed, Sheba Diamond Thabah, Mridul Haque, Prabir Saha, Efficient Modulo Multiplier", *Electronics Journal* (2023)
 12. Kokkiligadda, V.S.K., Naikoti, V., Patkotwar, G.S.L Sabat and R Peesapati.. FPGA-Based Hardware Accelerator for Matrix Inversion. *SN COMPUT. SCI.* 4, 147 (2023). <https://doi.org/10.1007/s42979-022-01542-x>
 13. Vianney Boniface Ekani Mebenga, Venkata Reddy Kopparthi, Hermann Djeugoue Nzeuga, J.S. Armand Eyebe Fouda, Guy Morgan Djeufa Dagoumguei, Georges Bell Bitjoka, P. Rangababu, Samrat L. Sabat, An 8-bit integer true periodic orbit PRNG based on delayed Arnold's cat map, *AEU - International Journal of Electronics and Communications*, Volume 162, 2023, 154575, ISSN 1434-8411, <https://doi.org/10.1016/j.aeue.2023.154575>
 14. J.R.K. Kumar Dabbakuti, Rangababu Peesapati, Kiran Kumar Anumandla, Algorithm for ionosphere delay computation based on Klobuchar-like coefficients for regional navigation satellite system users, *Advances in Space Research*, Volume 70, Issue 10, 2022, Pages 2920- 2928, <https://doi.org/10.1016/j.asr.2022.07.062>.
 15. Venkata Reddy Kopparthi, Anil Kali, Samrat L. Sabat, Kiran Kumar Anumandla, Rangababu Peesapati, J.S. Armand Eyebe Fouda, Hardware architecture of a digital piecewise linear chaotic map with perturbation for pseudorandom number generation, *AEU - International Journal of Electronics and Communications*, Volume 147, 2022, 154138, ISSN 1434-8411, 3.183
- b) Conferences:**
1. Suresh Panchala, Mahima Chaudhary, S.K. Bandari, VV Mani, "Impact of Nakagami-m Fading Channel on Reconfigurable Intelligent Surface Symbol Error Rate in Non-line-of-sight scenarios", 19th IEEE India Council International Conference (INDICON), pp. 1-4, 24-26 November, 2022
 2. Arundhati Dutta Gupta, Shyamosree Goswami, Anup Dandapat, "Low Power Sense Amplifier For A 64x32 Bit Sram Array For Iot Application", 2023 4th International Conference on Computing and Communication Systems (I3CS), NEHU, Meghalaya, India, 16th-18th Mar 2023
 3. Bhargava, Gaurav, Pinak Kumar Rath, and Shubhankar Majumdar. "GaN-based Class-F Power Amplifier for 5G Applications." In 2022 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON), pp. 1444-1449. IEEE, 2022.
 4. Naresh, Kattakola, Y. Padma Sai, and Shubhankar Majumdar. "Design of 8-bit Dadda Multiplier using Gate Level Approximate 4: 2 Compressor." In 2022 35th International Conference on VLSI Design and 2022 21st International Conference on Embedded Systems (VLSID), pp. 269-274. IEEE, 2022.
 5. Bhargava, Gaurav, and Shubhankar Majumdar. "Assessment of Filter Design for 5G Applications." In 2022 IEEE VLSI Device Circuit and System (VLSI DCS), pp. 85-88. IEEE, 2022.
 6. Bhargava, Gaurav, and Shubhankar Majumdar. "Design of Novel Rat-Race Coupler Based Analog Pre-Distortion Circuit for 5G Applications." In 2022 International Conference for Advancement in Technology (ICONAT), pp. 1-4. IEEE, 2022.
 7. SK Beura, J Samanta, BP Devi, P Saha, Floating point adder using inexact mantissa adder, 4th International Conference on Computing and Communication Systems, NEHU, 16th to 18th March 2023.
 8. Gouri Shankar Chetia and Bishnulatpam Pushpa Devi, Endmember Extraction with Unknown Number of Sources for Hyperspectral Unmixing, VNIT, 7th International Conference on Computer Vision & Image Processing 04-06 November, 2022
 9. Gouri Shankar Chetia and Bishnulatpam Pushpa Devi, Endmember Extraction without prior Number of Endmembers using Barycentric Abundances, International Conference on Machine Intelligence for GeoAnalytics and Remote Sensing (MIGARS) Hosted by Vasavi College of Engineering Hyderabad, Technically Co-Sponsored by IEEE Geoscience and Remote Sensing Society (GRSS), 2023.

10. Sharma, P., Balabantary, B.K., Rangababu, P. (2023). U-Shaped Xception-Residual Network for Polyps Region Segmentation. In: Basu, S., Kole, D.K., Maji, A.K., Plewczynski, D., Bhattacharjee, D. (eds) Proceedings of International Conference on Frontiers in Computing and Systems. Lecture Notes in Networks and Systems, vol 404. Springer, Singapore. https://doi.org/10.1007/978-981-19-0105-8_25.
11. Debaraj Rana Balabantary, B.K., Rangababu, P. Hardware Acceleration of Pre-trained Networks for Colorectal Polyp Classification on 5th International Conference on Energy, Power and Environment (ICEPE) 2023 to be held at NIT Meghalaya, Shillong during June 15 - 17, 2023
12. Santanu Borgohain, Touseef Hasan Kazmi, Rangababu Peesapati, Gayadhar Panda IoT based Solar Power Forecasting using AMA-ELM Technique 5th International Conference on Energy, Power and Environment (ICEPE) 2023 to be held at NIT Meghalaya, Shillong during June 15 - 17, 2023
13. Touseef Hasan Kazmi, Sumant kumar Dalai Dr P Rangababu Gayadhar Panda, IOT based Solar Power Forecasting using

Deep learning 2nd International Symposium on Sustainable Energy and Technological Advancements (ISSETA 2023), National Institute of Technology Meghalaya, India to be held during 24th-25th Feb. 2023.

C) Book Chapter:

1. S.K. Bandari, Content contributor for Indian adaptation of the book, "Introduction to Analog and Digital Communications", Simon Haykin, Michael Moher, Wiley, 2E, 2023.
2. Gaurav Bhargava, and Shubhankar Majumdar. "Pre-Distortion: An Effective Solution for Power Amplifier Linearization." In RF Circuits for 5G Applications: Designing with mmWave Circuitry (2023): 223.
3. Das, Sandeep, Subhrajit Dutta, Dibyendu Adak, and Shubhankar Majumdar. "A Vision-Based Data-Analytics Tool for Crack Characterization in Reinforced Concrete Structures." In Advances in Structural Mechanics and Applications: Proceedings of ASMA-2021 (Volume 3), pp. 210-218. Cham: Springer International Publishing, 2022

5. Patent:

1. J.R.K Kumar Dabbakuti, Dr. Rangababu Peesapati, Dr. Bunil Kumar Balabantaray and Dr. Kiran Kumar Anumandla An Integrated Cloud-based Terrestrial Navigation System and Method thereof" Filed and Published in Journal of Intellectual Property India (Journal No 46/2022), Department of Industrial Policy & Promotions, Government of India, Patent (Application No: No.202231065525A dated 18.11.2022).

6. Externally Sponsored R&D Project[s] as PI/Co-PI:

Sl. No.	Name of the faculty member	Title of the Project	Period (From -To)	Sponsoring Organisation	Amount [in Lakhs]	Role [PI/Co-PI]
1	Dr. Anup Dandapat	Assessment of climate change impacts on soils and various water basins of Meghalaya using existing and newer techniques	Mar 2019 - Mar 2022	DST	66.45	Co-PI
2	Dr. P. Rangababu	A Deep Learning Approach for Preservation of Cultural Heritage	28 Jan 2022-Jan 2025	SERB CRG	23.91	Co-PI
3	Dr. P. Rangababu	Development of High Sensitivity CMOS-MEMS Integrated Smart Pressure Sensor and System for Space Applications	2019 - 2022 Continuing	ISRO	32.46	Co-PI
4	Dr. P. Rangababu	Design and Development of Highly Sensitive Non-Conventional Ring Channel Shaped MOSFET Based Current Mirror Integrated Pressure Sensors	19 July 2021- 19 July 2024	Department of Science & Technology, Ministry of Science and Technology, Government of India	44.93	Co-PI

Sl. No.	Name of the faculty member	Title of the Project	Period (From -To)	Sponsoring Organisation	Amount [in Lakhs]	Role [PI/Co-PI]
5	Dr. Shubhankar Majumdar	Air quality network for smart city: real-time air quality monitor, evaluation, and prediction of air pollutants using machine learning through the deployment of low-cost air quality sensor (LAQS) in India and two selected asean countries (Malaysia, Philippines)	Aug 2021- Jul 2023	ASEAN-India STI Cooperation	26.25	PI
6	Dr. Shubhankar Majumdar	Development of E-mode III-Nitride devices for Energy Optimized Agile Power Electronics Indo-Czech Project with Alice Hospodkov	2020-2023	Department of Science & Technology (International Bilateral Co-operation Division)	27.76+26.75 (CEERI PILLANI)+euro 3,00,000 (czech side)	PI
7	Dr. Shubhankar Majumdar	Fully acoustics testing of low velocity impact damage in composite plate using the concept of local defect resonance	2022-25	Aeronautics R and D Board	INR 24.02	
8	Dr. Pradeep Kumar Rathore	Development of High Sensitivity CMOS-MEMS Integrated Pressure Sensor and System for Space Application		Indian Space Research Organisation (ISRO), Department of Space, Government of India	32.46	Co-PI
9	Dr. Pradeep Kumar Rathore	Design and Development of Highly Sensitive Non-Conventional Ring Channel Shaped MOSFET Based Current Mirror Integrated Pressure Sensors		Department of Science & Technology, Ministry of Science and Technology, Government of India	44.93	PI
10	Dr. Pradeep Kumar Rathore	Capacitive Micro-machined Ultrasonic Transducer (CMUT) for Medical Imaging and Under Water Communication		SERB, Department of Science & Technology, Ministry of Science and Technology, Government of India	36.33	Co-PI
11	Dr. B. Shravan Kumar	Deep-cancellation: A deep learning approach to mitigate interference in GFDM receiver for future wireless systems	2021-2023	TEQIP-III	1.83	PI
12	Dr. Abhishek Sarkhel	Compact Antenna System for High Speed Device to Device Communication	2021-2023	TEQIP-III	1.99	PI
13	Dr. P. Rangababu Dr. Abhishek Sarkhel Dr. B. Shravan Kumar Dr. Shubhankar Majumdar Dr. Satyendra Singh Yadav Dr. B. Pushpa Devi Dr. Pradeep Kumar Rathore Dr. Prabir Saha Dr. Anup Dandapat Dr. Salam Shuleenda Devi	AI Empowered Advanced Wireless Communication Systems	Sanctioned on Sep 19 2021 2021-2026	DST -FIST 2020	75.00 Lakhs	Dept

7. Conference/ Workshop/ Seminar Organized:

1. Dr. A Dandapat organized a 5-day Training program on emerging technology: Robotic Process Automation (RPA) during 20th Mar-24th Mar 2023, in collaboration with CDAC-Kolkata-as a convenor.
2. Dr. P. Rangababu Organized a 5-day workshop on Intel India and NIT Meghalaya sponsored workshop on Embedded System Design using FPGAs 4th April 2022 -08th April 2022.

8. Conferences / Workshops / Seminars / Trainings Attended by faculty members:

Sl. No.	Name of Faculty	Name of the Programme attended	Duration
1	Dr. Shравan Kumar Bandari	1. Robotic Process Automation, C-DAC Kolkata.	20-24 March 2023
2	Dr. Rangababu P	1. Robotic Process Automation, C-DAC Kolkata. 2. CDAC sponsored 10 Days Online Master Training Program on "Cyber-Attacks and Defense"	20-24 March 2023 12th Sep to 23rd Sep 2022

9. Invited Talks Delivered:

1. Dr. Anup Dandapat delivered an Invited Talk at Jaippee Institute of Information Technology, Delhi on "Outcome based research: VLSI Devices, Circuit Analysis, Latest Design Tools and Applications" during 21st-27th July 2022.
2. Dr. Anup Dandapat delivered an Invited talk at Tezpur University on Digital Design Issues and Low Power Memories, during 17th Mar-21st Mar 2023.
3. Dr. Shравan Kumar Bandari delivered an Online expert lecture on "Deep learning for wireless communication" as part of Two week online FDP on "Recent Research Trends and Applications of Artificial Intelligence & Machine Learning", Organized by Electronics & ICT Academy, NIT-WARANGAL & In association with KU College of Engineering & Technology, Kakatiya University, Warangal, India, 10 - 20 August 2022.
4. Dr. Shubhankar Majumdar delivered an Invited talk at UKM Malaysia on Deployment of Air Pollution Sensor on 28th Nov 2022.
5. Dr. Shubhankar Majumdar delivered an Invited talk at IESM, University of Philippines on Internet of things (IoT) and Low-cost Sensors in environmental Research on 6th Mar 2023.
6. Dr. Shubhankar Majumdar delivered an Invited talk at Mariano Marcos State University, Ilocos Norte Philippines on Use of AI models for prediction of air pollution on 7th Mar 2023.
7. Dr. Shubhankar Majumdar delivered an Invited talk at National Engineering University, Batangas Philippines on Air Quality Monitoring Evaluation on 9th Mar 2023.
8. Delivered a Talk in two-day Workshop. AI Hardware Accelerators for Drone Design Bootcamp on Drone/UAS Allied Technologies at NIELIT Calicut 24-03-2022 Meity
9. Delivered a Talk at in two-day Workshop Advanced Microcontroller Programming and Interfacing GKCIET 14-03-2023 Meity
10. Delivered a Tutorial Talk on ML hardware accelerators on FPGA NEHU Meghalaya international conference on ICEDEC 2022. 07-09-2022 NEHU
11. Delivered a Talk on "Signal Processing techniques for Forecasting in Microgrid" in five day Workshop on Microgrid Protection & Control held on 17th April 2023-20th April 2023 at NIT Meghalaya and NITTR Chandigarh
12. Delivered a Talk on "advanced video coding for Cultural preservation SERB sponsored High-End Workshop Karyasala held on 13.06.2022 to 26.06.2022. at NIT Meghalaya

10. Laboratories Setup:

Sl. No.	Laboratory	Major Equipment & Software	Location	Cost (Rupees in lakhs)
1	FIST-Lab	AI/ML/Computing Server	Institute Server Room	23,84,675.00

11. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. P. Rangababu	Skill lab Convenor	Feb 2023- till date
		Visvesvaraya Ph.D Scheme Nodal coordinator	April 2023
		Microprocessor and Microcontroller lab in charge, EC	July 2017-till date
		Chairman Campus Business committee	July 2023-Feb 2023
		B.Tech Evaluation committee	July 2023-Tilldate
2	Dr. Pradeep Kumar Rathore	Professor-in-charge, Centre for Technology Enabled Learning	Jan 2019 - till date
		Faculty Advisor, B. Tech. EC 2019 Batch	7/1/2019 - till date
		Swayam Coordinator, NIT Meghalaya	8/1/2020 - till date
3	Dr. Shubhankar Majumdar	In Departmental NBA Committee	July 2019 -till date
		Member of Startup Cell	July 2018- till date
		Institute level IQAC member - Criteria 9 NBA	July 2019- till date
		Faculty Advisor of B. Tech EC batch 2018	July 2019 -till date
		Faculty In-charge of Coding Club	July 2019 -till date
		Convener of Innovation & Entrepreneurship Club	Oct 2020 -till date
4	Dr. Abhishek Sarkhel	Member of Library Committee	June 2018 - till date
		Member UG Admisson	2022 Session
		Faculty Advisor	December 2022 - till date
		Lab In Charge RF Microwave & Optical Fiber Laboratory	August 2013 - till date
		Lab In Charge COE	August 2019 - till date
5	Dr. Satyendra Singh Yadav	Deputy Faculty In-Charge, Computer Center	February 2020- till date
6	Dr. Prabir Kumar Saha	Member of PG PEC	June 2019 to Till Date
		DSD Lab In-charge	July 2018 to till date
		Warden Lapalang -IV boys Hostel	July 2021 to Till Date
		HOD, EC	1 st August 2023 to Till Date
7	Dr. Bishnulatapam Pushpa Devi	High Performance computing Lab In-charge	Jan 2020 - Till date
		Departmental website maintenance In-charge	Jan 2020- Till Date
		Warden Lapalang Girls Hostel	July 2022-till date
		Faculty Advisor of EC 2020 Batch	July 2020- till date
		Member of Medical and Covid-19 Response committee	July 2021 to Till Date
		Member of Laboratory Inspection Committee	Feb 2023 -till date
8	Dr. Salam Shuleenda Devi	Digital Image Processing Lab In- Charge	Jan 2020-Till date
		Warden of Nongthymmai Girls Hostel	July 2021-Till Date
		Faculty Advisor of M. Tech 2021 Batch	July 2021-Till Date
		Member, Ph.D. (PT and FT-EC) applications scrutiny committee	Dec 2021, May 2022
		Faculty Advisor of M.Tech 20212 Batch	July 2022-Till Date
		Member, Local Purchase Committee of Institute	March 2022

Sl. No.	Name of Faculty	Responsibilities	Duration
9	Dr. Shravan Kumar Bandari	Member, Examination committee	Aug-2022 - till date
		Faculty I/C (Dance and Drama club, SAC)	Aug-2022 - till date
		Member, NSS Committee	Aug-2022 - till date
		Member, Anti-Ragging squad Committee	2022-2023
		Member, Standing Condemnation/Disposal Committee for proper disposal of E-Waste	2022 – till date
		Warden - Lapalang 2 boys hostel	July 2021 - Till Date
		Faculty Advisor of B.Tech 1st year - 2021 batch	July 2021 - Till Date
		Member, Student Activity Centre - Technical Committee	Aug-2020 to Aug-2022
		Member, Intellectual Property Committee (IPC)	Dec-2020 to Dec-2022
		M.Tech & M.Sc admission screening committee for the academic year	2022-2023
		Communication Systems Lab In charge	Jan 2020 - till date

12. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Member of
1	Dr. Anup Dandapat	IEEE
2	Dr. P. Rangababu	IEEE (SM), IETE (F), IEI, IEEE CTSOC Technical member
3	Dr. Prabir Saha	IEEE, IETE, IAENG
4	Dr. Shravan Kumar Bandari	IEEE
5	Dr. Pradeep Kumar Rathore	IEEE
6	Dr. Shubhankar Majumdar	IEEE , URSI, ECS, IAENG

13. Any Other Notable Information:

Sl. No.	Name of Faculty	Technical Assistance	Name of Journal/Conference
1	Dr. A. Dandapat	Reviewer	a. IEEE b. IET c. Elsevier d. Taylor & Francis
2	Dr. P. Rangababu	Reviewer	a. IEEE ACCESS b. IEEE BROADCAST c. IEEE TCAS-I d. TCSVT
3	Dr. Prabir Kumar Saha	Reviewer	a. Elsevier b. Springer c. Electronics Journal d. Ain Shams Engineering Journal
4	Dr. Shubhankar Majumdar	Program Chair & Reviewer for the conference	a. IEEE TED b. VLSI-DCS 2022 Conference c. IEEE Access d. Wiley IJNM, RFCAD
		Reviewer for the journals	a. Springer JCEL b. Silicon c. Elsevier Microelectronics Journal
5	Dr. Abhishek Sarkhel	Reviewer	Willy International Journal of RF and Microwave Computer-Aided Engineering

Sl. No.	Name of Faculty	Technical Assistance	Name of Journal/Conference
6	Dr. Shravan Kumar Bandari	Reviewer	a. IEEE Transactions on Wireless Communications (IEEE) b. IEEE Wireless Communications Letters (IEEE) c. IEEE Communications Letters (IEEE) d. IET Communications e. IET Generation, Transmission and Distribution f. AEU- International Journal of Electronics and Communications (Elsevier) g. Physical Communication (Elsevier) h. International Journal of Communication Systems (IJCS, Wiley) i. Transactions on Emerging Telecommunications Technologies (ETT, Wiley) j. ICT Express (Elsevier), IETE Journal of Research (Taylor & Francis) k. KSII Transactions on Internet and Information Systems
7	Dr. Satyendra Singh Yadav	Reviewer & TPC Member	a. IEEE Access b. Wiley

14. Upgradation of Existing Laboratory:

Sl. No.	Laboratory	Major Equipment & Software	Cost (Rupees in lakhs)
1	Computing Laboratory	Dell Vostro 3681 PCs (17 nos)	
2		HP Pro Tower 400 G9 PCI Desktop PCs (15 nos)	
3	Digital System Laboratory	HP Pro Tower 400 G9 PCI Desktop PC (15 nos)	
4	Embedded Machine learning Lab	1. Xilinx Kria Kit(1) 2. Xilinx ZCU 104(1) 3. Embedded Machine learning Kits (10) are donated from Aurdino under Edge Impulse university Programme	
5	FPGA and Hardware Lab	1. Intel Pvt Ltd donated DE-lite kits(10) and DE-SoC kits (5) 2. under SMDP purchased various ARM kits, Raspberry Pi Boards and Sensors	

Department of Mechanical Engineering

1. Introduction to the Department:

The Department of Mechanical Engineering started from the session July 2013. The department is offering 4-year B.Tech Programme in Mechanical Engineering with an intake capacity of 30. The department consists of bright, young and highly potential experienced faculty members. Moreover, the department has one adjunct faculty, one visiting faculty, and one Fulbright faculty.

The main objective of the department is to cater the students with class tutorial and in hand practice with the state-of-the-art laboratories & workshop. The Lab. are, Fluid Mechanics Lab., Theory of Machine Lab., Thermal Science Lab., Strength of Material Lab., Material Science Lab., Metrology and Instrumentation Lab., Advanced Manufacturing Lab., Computational Lab.

The basic aim of the department is to provide the students with perfect principles and practice in mechanical engineering, which helps them to serve the society and address a variety of needs. Another, objective of the department is to come up with courses containing interdisciplinary concepts keeping in view of the advancement of today's world in the field of robotics, mechatronics, nanotechnology etc. The department also plans to have industry-academic collaboration so that both can complement each other in study, research, and overall development.

2. Programmes Offered:

- Bachelor of Technology in Mechanical Engineering
- Master of Technology in Mechanical Engineering (Specialization in Fluids and Thermal Engineering)
- Doctor of Philosophy in Mechanical Engineering

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remarks
Prof. Harish Chandra Das	Professor	PhD	Thermal	28-12-2017	6	6 Ongoing
Dr. Deba Kumar Sarma	Associate Professor	PhD	Manufacturing	August 23, 2013	5	3 awarded 2 continuing
Dr. Rabindra Narayan Mahapatra	Associate Professor	PhD	Design and manufacturing	28-12-2017	5	1 Awarded, 4 Ongoing
Dr. Subhendu Maity	Assistant Professor	PhD	Fluid Mechanics	July 16, 2012	3	1 Awarded, 2 Ongoing
Dr. Bikash Kumar Sarkar	Assistant Professor	PhD	Fluid Power and Control	August 21, 2013	9	3 Awarded, 6 Ongoing
Dr. Kishore Debnath	Assistant Professor	PhD	Manufacturing	July 16, 2015	12	3 Awarded, 9 Ongoing
Dr. Koushik Das	Assistant Professor	PhD	Thermal	July 31, 2014	6	2 Awarded, 4 Ongoing
Dr. Biplab Kumar Debnath	Assistant Professor	PhD	Thermal	July 30, 2014	6	3 Awarded, 3 Ongoing
Dr. Rajat Subhra Das	Assistant Professor	PhD	Thermal	July 16, 2015	5	2 Awarded, 3 Ongoing
Dr. Maneswar Rahang	Assistant Professor	PhD	Manufacturing	June 06, 2016	3	2 Awarded, 1 Ongoing
Dr. Tanmoy Bose	Assistant Professor	PhD	Machine Design	June 17, 2016	3	2 Awarded, 1 Ongoing
Dr. Md. Nur Alom	Trainee Teacher	PhD	Fluids and Thermal	July 21, 2014	--	--
Mr. Sambit Majumder	Trainee Teacher	PhD (Pursuing)	Fluids and Thermal	July 20, 2015	--	--

4. List of Publications:

a) Journals:

Sl. No.	Authors	Publication Details
1	S.K. Yadav, A. Singh, and K. Debnath	Experimental Investigation of Powder-Mixed Electrolyte on CFRP Composites using Electrochemical Discharge Machining Process. <i>International Journal of Machining and Machinability of Materials</i> . (Accepted)
2	K. Debnath and B.C. Behera	Fabrication of Micro-Hole in 3D Printed CFRP Composite by Electrical-Discharge Machining Process. <i>Journal of Advanced Manufacturing Systems</i> , DOI: 10.1142/S0219686723500348.
3	G. Surya Rao, R. Paul, S. Singh, and K. Debnath	Influence of Conventionally Drilled and Additively Fabricated Hole on Tensile Properties of 3D Printed ONYX/CGF Composites. <i>Journal of Materials Engineering and Performance</i> . DOI: 10.1007/s11665-022-07529-2.
4	A. Das, A. Gautam, A. Panda, S.R. Das, K. Debnath , Ch. Ramakrishna, and S.K. Patel	Comparative Performance Evaluation Between Uncoated and TiAlN+AlCrN Coated Carbide Tools in Hard Turning of AISI H11 Steel. <i>Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering</i> , DOI: 10.1177/095440892211104.
5	R. Vishwakarma, S. Kesarwani, R.K. Verma, K. Debnath , and J.P. Davim	Using Harris Hawk Algorithm for Experimental Study on the Hole Dilation Mechanism During Micro-Machining (μM) of Graphene Nanoplatelets/Carbon Fiber (GnP/C) Reinforced Polymeric Composite. <i>Materials Research Express</i> , Vol. 10, 024005, 2023.
6	R. Davis, A. Singh, K. Debnath , P. Soares, S.H. Och, A.K. Keshri, L. Sopchenski, and H.A. Terry	Enhanced Abrasive-Mixed- μ -EDM Performance towards Improved Surface Characteristics of Biodegradable Mg AZ31B alloy. <i>The International Journal of Advanced Manufacturing Technology</i> , Vol. 124(7-8), 2685-2700, 2023.
7	G. Surya Rao, K. Debnath , and R.N. Mahapatra	Multi-Response Optimization of the Chemical Treatment Process Parameters Influencing the Tensile, Flexural, Compression, and Shear Properties of the Injection Moulded Green Composites. <i>Journal of Polymers and the Environment</i> , Vol. 31(1), 112-130, 2023.
8	R. Rathore, S. Bhattacharjee, P. Bora, G. Surya Rao, S. Samanta, and K. Debnath	Effect of Injection Parameters on Tensile and Flexural Properties of Green Composites. <i>Composites Theory and Practice</i> , Vol. 22(4), 196-204, 2022.
9	G. Surya Rao, K. Debnath , R.N. Mahapatra, and T.S. Srivatsan	A Critical Review on Mechanical and Morphological Characteristics of Injection Molded Biodegradable Composites. <i>Polymer Composites</i> , Vol. 43(12), 8634-8672, 2022.
10	S. Kesarwani, R.K. Verma, and K. Debnath	Modified JAYA Algorithm for Machinability Assessment and Conflicting Response Optimization During Milling of Nanostructured Carbon Onions Reinforced Epoxy Composites. <i>Experimental Techniques</i> , Vol. 46, 1007-1025, 2022.
11	H. Dutta, K. Debnath , and D.K. Sarma	Experimental Investigation of Parametric Effects and Characterization of the Machined Surface in μ ED-milling of CFRP Composite. <i>Arabian Journal for Science and Engineering</i> , Vol. 47, 16341-16353, 2022.
12	S.K. Yadav, A. Singh, and K. Debnath	Analysis of Mass Concentration and Morphology of Fume Particles During ECDM of CFRP Composites. <i>Materials Science Forum</i> , Vol. 1073, 29-35, 2022.
13	S.K. Yadav, A. Singh, and K. Debnath	Investigation of Machining Characteristics During Micro-Hole Fabrication in CFRP Composite by ECDM Process. <i>Engineering Research Express</i> , Vol. 4, 035055, 2022.
14	H. Dutta, K. Debnath , and D.K. Sarma	Preliminary Investigation of Powder-Mixed Microelectrical Discharge Drilling of CFRP Composite. <i>Surface Review and Letters</i> , Vol. 29(8), 2250111, 2022.
15	M. Roy Choudhury, G. Surya Rao, K. Debnath , and R.N. Mahapatra	Analysis of Force, Temperature, and Surface Roughness During End Milling of Green Composites. <i>Journal of Natural Fibers</i> , Vol. 19(13), 5019-5033, 2022.
16	M. Roy Choudhury and K. Debnath	Analysis of Hybrid Joints of Green Composites Under Tensile and Compressive Loadings. <i>Green Materials</i> , Vol. 10(2), pp. 70-82, 2022.
17	A. Das, D. Barrenkala, K. Debnath , P. Kumar, R. Rajan, and S.K. Patel	Comparative Assessments of Machining Forces in 3D Printed Polymer Composite During Milling Operation Using Two Coated Carbide End Mills. <i>Materials Today: Proceedings</i> , Vol. 62, pp. 6107-6114, 2022.

Sl. No.	Authors	Publication Details
18	S.K. Yadav, A. Singh, and K. Debnath	Experimental Study of Hole Overcut and Taper During Electrochemical Discharge Machining (ECDM) of CFRP Composite. <i>Materials Today: Proceedings</i> , Vol. 59, pp. 1054-1058, 2022.
19	R. Davis, A. Singh, K. Debnath , R.M. Sabino, K. Popat, P. Soares, A.K. Keshri, and B. Borgohain	Enhanced Micro-Electric Discharge Machining-Induced Surface Modification on Biomedical Ti-6Al-4V Alloy. <i>Journal of Manufacturing Science and Engineering</i> , Vol. 144(7), 071002, 2022.
20	Das, A., Das, R.S. and Das, K	Numerical analysis of liquid desiccant dehumidification system with novel trapezoidal baffled surface. <i>International Journal of Refrigeration</i> , 2023, 145, pp.457-466
21	Das, S., Debnath, B.K. & Das, R.S.	Analyzing the Combustion Behavior of different Ceramic Porous Media in the Piston Bowl of a Diesel Engine. <i>J. Inst. Eng. India Ser. C</i> 103, 573–587 (2022). https://doi.org/10.1007/s40032-022-00828-6
22	Chandekar, A. C., Deka, S., Debnath, B. K., and Babu, P. R.	Comparative Assessment of Engine Vibration, Combustion, Performance, and Emission Characteristics Between Single and Twin-Cylinder Diesel Engines in Unifuel and Dual-Fuel Mode. <i>ASME. J. Energy Resour. Technol.</i> 2022; 144(8): 082106. https://doi.org/10.1115/1.4052998
23	Chandekar, A.C. and Debnath, B.K.	Effect of Vibration and Pressure on the Air–BioCNG Mixture Inside the Manifolds of Dual-Fuel Diesel Engines. <i>ASME. J. Energy Resour. Technol.</i> 2023, 145(7): 072301. https://doi.org/10.1115/1.4056842
24	M. A. Singh, D. K. Sarma, O. Hanzel, P. Šajgalík, Janakarajan Ramkumar	Characterization of surface topography during multi-pass WEDM of MWCNT alumina composites, <i>CIRP Journal of Manufacturing Science and Technology</i> , Elsevier, (Accepted), 2023.
25	Dutta, S. and Sarma, D.K.	Multi-objective optimization of μ -EDM parameters for μ -hole drilling on Hastelloy C 276 Super alloy using Response Surface Methodology and Multi-objective Genetic Algorithm. <i>CIRP Journal of Manufacturing Science and Technology</i> , DOI: doi.org/10.1016/j.cirpj.2022.07.011 , Vol., No.39, Page nos. 115-133, 2022
26	Dutta, S. and Sarma, D.K.	Multi-response optimization of machining parameters to minimise the Overcut and Circularity error during Micro-EDM of Nickel-Titanium Shape Memory Alloy. <i>Advances in Materials and Processing Technologies</i> (Taylor & Francis), DOI: 10.1080/2374068X.2022.2090787, 2022.
27	H. Dutta, K. Debnath, and D.K. Sarma,	Preliminary Investigation of Powder-Mixed Microelectrical Discharge Drilling (PM μ EDD) of CFRP Composite, <i>Surface Review and Letters</i> (SRL), World Scientific, DOI: 10.1142/S0218625X22501116, Vol. 29, No.8, Page nos. 2250111-11, 2022
28	Majumder S, Ghosh A, Basu DN and Natarajan G	Computational assessment of immersed boundary–lattice Boltzmann method for complex moving boundary problems, <i>Computational Particle Mechanics</i> , 1-18, 2022, DOI: 10.1007/s40571-022-00487-5
29	RM Mazarbhuiya, M Rahang, S Saha	Masking in EDM for pattern generation on Al-6061 work surface, <i>Advances in Materials and Processing Technologies</i> , 1-15
30	RM Mazarbhuiya, M Rahang	PCM assisted reverse electro discharge machining process for pattern generation, <i>Materials and Manufacturing Processes</i> 37 (9), 995-1002
31	RM Mazarbhuiya, M Rahang, S Saha	Surface modification in the shape of a pattern using crepe paper maskant in EDM, <i>Surface Engineering</i> 38 (6), 664-674
32	S Deka, A Kamal, RB Pallekonda, M Rahang, V Kulkarni	Measurement technique for ideal selection of sensors and accurate force recovery on aerodynamic models, <i>Experimental Techniques</i> 46 (2), 213-224
33	Venkaiah, P., Sarkar, B.K. and Chaterjee, A.,	Pitch control of electrohydraulic semi-rotary-actuated wind turbine with actuator and valve fault using generalized power-based exponential rate reaching law sliding mode controller. <i>Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering</i> , p.09596518231154632. 2023
34	Kumar, N., Venkaiah, P., Sarkar, B.K. and Maity, S.	Wind turbine electrohydraulic transmission system control for maximum power tracking with pump fault. <i>Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering</i> , p.09596518231155691., 2023.
35	Vinod, J., Sarkar, B.K. and Sanyal, D.,	Flow control in a small Francis turbine by system identification and fuzzy adaptation of PID and deadband controllers. <i>Renewable Energy</i> , 201, pp.87-99. 2022

Sl. No.	Authors	Publication Details
36	Venkaiah, P. and Sarkar, B.K., 2022.	Electrohydraulic proportional valve-controlled vane type semi-rotary actuated wind turbine control by feedforward fractional-order feedback controller. Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering, 236(2), pp.318-337. 2022
37	Mondal, M.K., Biswas, N., Datta, A., Sarkar, B.K. and Manna, N.K.	Positional impacts of partial wall translations on hybrid nanofluid flow in porous media: real coded genetic algorithm (RCGA). International Journal of Mechanical Sciences, 217, p.107030., 2022
38	Mohan, M., Alom, N., and Saha, U. K.	Role of Optimization and Soft-computing Techniques in the Design and Development of Futuristic Savonius Wind Turbine Blades: A Review", Wind Engineering, 2022, page 1-13
39	Sarkar, D., Shukla, S., Alom, N., Sharma, P., and Bora, B. J.	Investigation of a Newly Developed Slotted Bladed Darrieus Vertical Axis Wind Turbine: A Numerical and Response Surface Methodology Analysis, ASME Journal of Energy Resources Technology, Vol: 145, 2022, No:5, p: 051302
40	Shukla A., Alom, N., and Saha, U. K.,	Spline-Bladed Savonius Wind Rotor with Porous Deflector: A Computational Investigation, Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2022, Vol: 44, issue: 10, p:1-17

b) Book chapters:

Sl No.	Author Name	Title	Publisher	ISBN No	Pages	Year
1	V. Murugabalaji, M. Rout, and K. Debnath	Tensile Properties and Anisotropy of Cross-Rolled Sheets.	CRC Press	9781003226703	169-182	2022
2	P.K. Kharwar, R.K. Verma, K. Debnath , and A. Singh	Synthesis of Catalyst-Free Carbon Nano Onions (CNOs) for Advanced Functional Materials.	AIP Publishing	9780735423886	8-1-8-22	2022
3	K. Debnath and G. Surya Rao	Role of Different Forms of Bamboo and Chemical Treatment on the Mechanical Properties of Compression Molded Green Composite.	Springer	978-981-16-8899-7	107-124	2022
4	M. Roy Choudhury and K. Debnath	Current and Future Trends in Micro-Joining and Nano-Joining.	Elsevier	9780323860208	209-238	2022
5	Souradeep Dutta, Deba Kumar Sarma , Koushik Das , and Bhargab Madhab Barua	Numerical Modelling and Simulation of μ -EDM Process on Inconel 718 Using FEM Model	Advanced Production and Industrial Engineering, IOS Press Ebooks	doi:10.3233/ATDE220752	268-273	2022

c) Conferences:

Sl. No.	Authors	Publication details
1	K. Debnath , G. Surya Rao, and P.N. Rao	Life Cycle Assessment (LCA) of Flax-Based Green Composite Product Fabricated by Injection Moulding Process. In 7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR 2022), Krakow, Poland, 09-11 th December, 2022, pp. 168-174.
2	Chandekar, A.C. and Debnath, B.K.	Influence of Engine Vibration on Mixture Quality of Air and Port-Injected bioCNG in Dual-Fuel Diesel Engine. In 2022 4 th International Conference on Energy, Power and Environment (ICEPE) (pp. 1-6). IEEE.
3	Chandekar, A.C., Singh, D. and Debnath, B.K.	Investigation of the F-Shape Manifold for Air-BioCNG Mixing in Twin-Cylinder Dual-Fuel Diesel Engine. In 2022 7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR) (pp. 144-149). IEEE.

Sl. No.	Authors	Publication details
4	Souradeep Dutta and Deba Kumar Sarma	Application of graphene nano powder in the dielectric oil to optimize the machining variables during μ -EDM of Hastelloy C 276 based on Taguchi Method In 16 th Global Congress On Manufacturing and Management (GCOMM 2022), December 5-7, 2022, Auckland University of Technology (AUT), Auckland, New Zealand, Pages-6, 2022
5	Khelkar A.B., Patwari K, and Das R.S.	Analysis of a Solar Air Heater with Triangular fins on Wavy Absorber Plate, Proceedings of the 9 th International and 49 th National Conference on Fluid Mechanics and Fluid Power (FMFP) December 14-16, 2022, IIT Roorkee, Uttarakhand, India.
6	Khelkar, A.B., Syrti, K., Das, R.S., and Sarkar, B.K.	Augmenting the thermal performance of solar air heater with absorber plate roughened with pin-fins. In 7 th International Conference on Mechanical Engineering and Robotics Research, December 9-11, 2022, Krakow, Poland.
7	Rajive, N.M., Khelkar, A.B., and Das, R.S.	Simulation of a single zone building in Meghalaya using solar air heater in TRNSYS software. Proceedings of the 1 st International Conference in Fluid Thermal and Energy Systems, June 9-11, 2022, NIT Calicut, Kerala, India.
8	Baruah, J., Venkaiah, P., Kumar, N., Sarkar, B.K. and Alom, N.	Offshore Wind Turbine Pitch Control with Aeroelastic Effect. In 2022 IEEE IAS Global Conference on Emerging Technologies (GlobConET) (pp. 875-880). IEEE, 2022.
9	Ghosh, B.B., Sarkar, B.K., Saha, R.	Positional error estimation of the parallel manipulator for control application, 7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR 202 2), Krakow, Poland, 9-11, December, 2022

5. Workshop Organized:

Sl No.	Name of Faculty	Title	Sponsors	National/ International	Duration	Faculty responsibility
1	Dr. Kishore Debnath and Dr. Koushik Das	Online High-End Workshop (Karyashala) on Green Materials and Manufacturing: Concepts, Practices, and Needs	SERB	National	June 23-29, 2023	Coordinators

6. Conferences / Workshops / Seminars / Trainings Attended by faculty members:

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Kishore Debnath	7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland	09-11 December 2022
2	Dr. Biplab Kumar Debnath	7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland	09-11 December 2022
3	Dr. Bikash Kumar Sarkar	7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland	09-11 December 2022
4	Dr. Rajat Subhra Das	7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland	09-11 December 2022

7. Projects:

a) Sponsored Projects:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Development and Testing of Solar Photovoltaic (PV) Assisted Hybrid Double-Slope Desalination Solar Still for Off-grid Rural-North East India	PI: Dr. Biplab Kumar Debnath Co-PI: Dr. Rajat Subhra Das	SERB, DST	29,00,000/-	3 years	Ongoing
2.	Coating of Hafnium on Copper to Use as Nuclear Reactor Control Rod	PI: Dr. <u>Maneswar Rahang</u>	SERB, DST	25,06,920/-	3 years	Ongoing
3	Extraction of Pineapple Leaf Fiber and Use It for the Development of Low-Cost Products	PI: Dr. Kishore Debnath Co-PI: Dr. Koushik Das	NECTAR	12,65,880/-	1 year	Ongoing
4	Development of a novel solar driven dedicated outdoor air system (DOAS) for space heating and liquid desiccant dehumidification with direct/indirect contact heat/mass exchangers for Meghalaya region	PI: Dr. Rajat Subhra Das	SERB, DST	32,41,700/-	3 years	Ongoing

b) Consultancy:

Sl. No.	Title	Consultant(s)	Client(s)	Value	Status
1.	Testing of materials, Vetting of Tourism project	D.K. Sarma, K. Das, C. Marthong	RITES, CPWD, BRO, Tourism Deptt., Meghalaya	Approx. 10000000.00	Completed

8. Laboratories Setup:

Sl. No.	Faculty	Laboratory	Major Equipment & Software	Location	Cost (Rupees in lakhs)
1	Dr. Kishore Debnath	Central Workshop	All major equipment related to the carpentry shop, fitting shop, welding shop, machine shop, foundry shop, automobile shop, plumbing shop, and electrical shop.	NIT Meghalaya (Sohra)	≈ 10 Cr.

9. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Kishore Debnath	Head of the Department	July 01, 2022 - till date
2	Dr. Biplab Kumar Debnath	Vice President - Cultural, Student Activity Centre	August, 2020 - till date
		PIC, Transportation	November, 2022 - till date
3	Dr. D.K. Sarma	Chairman, Library Committee Nodal Officer (ERP, SAMARTH)	1-7-2022 to 30-6-2023 5-2-2023 to till date
4	Dr. Rajat Subhra Das	PiC, Center for Career Development	January 2019 - till date
5	Dr. <u>Maneswar Rahang</u>	Warden, L3 Boys Hostel	01-06-2018 - till date
6	Dr. Bikash Kumar Sarkar	PIC, Centre for Robotics and Mechatronics	

Sl. No.	Name of Faculty	Responsibilities	Duration
7	Dr. Koushik Das	Faculty Incharge, Transportation	January 23, 2019 - November 14, 2022
		Faculty Incharge, Central Workshop	June 29, 2022 - till date
		Deputy Centre In-Charge, Design Innovation Centre	December 15, 2016 - till date
		IP Coordinator cum Member Secretary, Intellectual Property Committee	December 3, 2020 - December 3, 2022
		Organizing Chair, Institute Das 2023	February 21, 2023 - April 1, 2023

10. Membership of Professional Bodies:

Name	Professional Body	Membership No. and Status
Dr. Md Nur Alom	ASME	102089520, Member
Dr. Bikash Kumar Sarkar	ASME	Member 100784361, 202022
	IEEE, IEEE Control Systems Society Member	92662020, 2022
	NSFMFP	Life Member, LM631
	ISHMT	Life Member, 1064
Dr. D.K. Sarma	Indian Welding Society	Life member
Dr. Bikash Kumar Sarkar	ASME	100784361, Member
	IEEE	92662020, Member
	NSFMFP	LM631, Life member
	ISHMT	1064, Life member
Dr. Subhendu Maity	ASME	100732582, Member
	IEEE	93088281, Member
	NSFMFP	LM635, Life member
	ISHMT	1064, Life member
	ISTE	LM 111112, Life member
	ISTAM	L/1067, Life member
	IEI	AM166945-4, Associate Member
	SAISE	20151124001, Life Member
Dr. Biplab Kumar Debnath	ASME	Member (101982384)
	IEI	Associate Member (AM159023-8)
	IEEE	Member (98649940)
	ASCE	Associate Member (9783236)
Sambit Majumder	IEI	Associate Member (AM159672-4)

11. Any Other Notable Information:

- Dr. Kishore Debnath** Examined the Thesis Entitled "Effect of Particulate Filled Dental Restorative Materials on Physico-Mechanical, Thermal & Wear Analysis" Submitted by Mr. Ramkumar Yadav for the Degree of Doctor of Philosophy of MNIT Jaipur, 2022.
- Dr. Kishore Debnath** Delivered a Guest Lecture on 'Electrical Discharge Machining of Partially Conductive Materials' during International Webinar on "Advanced Manufacturing Technology" Organized by the Department of Mechanical Engineering, Vaugh Institute of Agricultural Engineering and Technology, Prayagraj, India, April 29, 2022.
- Dr. Kishore Debnath** Delivered an Invited Talk on 'Machining of Composites: Research Challenges & Solutions' during Five Days Virtual Workshop on "Novel Materials: Processing, Characterization and Applications" Organized by the Department of Mechanical Engineering, National Institute of Technology Uttarakhand, India, May 23-27, 2022.
- Dr. Kishore Debnath** Set the Question Paper for "AICTE Student Learning Assessment (PARAKH)", Government of India, 2022.
- Dr. Kishore Debnath** Reviewed 2000 Ideas for INSPIRE Awards-MANAK 2022 (DST, GoI)

6. **Dr. Kishore Debnath** Appointed as an Editorial Member of (i) *Advances in Environment and Energies* and (ii) *Global Journal of Energy Technology Research Updates*
7. Expert lecture delivered by **Dr, Rajat Subhra Das** on “Solar Based Heating, Cooling and Dehumidification Systems” in the Online Short-Term Course on ‘Emerging Trends in Renewable Energy technologies (ETRET-2022)’ organized by the Department of Mechanical Engineering, Motilal Nehru National Institute of Technology (M.N.N.I.T.) Allahabad, Prayagraj-211004, U.P., from 20th to 24th June, 2022.
8. **Dr, Rajat Subhra Das** served as a resource person to conduct an interactive session on different aspects of higher studies/ research on 7th June 2022 from 1:00 pm at the Seminar Hall, Department of Energy, Tezpur University. Tezpur 784028, Assam.
9. **Dr, Rajat Subhra Das** served as an expert in the Interview Board Committee for the interview for the Post of Placement Officer in St. Anthony’s College, Shillong, held on 28th October 2022.
10. **Dr, Rajat Subhra Das** served as an External Expert for Mr. Ankit Kumar (2020AMM028) on his MTech Thesis entitled “Design, fabrication and testing of a 6-component platform balance for measuring aerodynamic forces and moments of a tube launched UAV” held at 10 AM on 11-08-2022 through online mode in the Department of Aerospace and Applied Mechanics, IEST Shibpur, West Bengal, India.
11. **Dr, Rajat Subhra Das** served as an external examiner for Practical Examination of EN566 Energy laboratory-I practical examinations of M.Tech in Energy Technology Programme, scheduled on 6-7 June, 2022, in the Department of Energy, Tezpur University, Tezpur, Assam, India.

Department of Chemistry

1. Brief Introduction to the Department:

The Department of Chemistry, National Institute of Technology Meghalaya has started in 2012. In addition to the B.Tech. Chemistry course, the department is also offering 2 yrs M.Sc. program in Chemistry from 2015 onwards with all the major areas of Chemistry such as Inorganic, Organic, Physical, and Theoretical Chemistry. The intake capacity of M.Sc. programme is sixteen (16).

Currently, it offers Ph.D. programs in broad areas of Chemical Sciences like Organic Chemistry, Inorganic Chemistry, Biophysical Chemistry, Materials Chemistry and Computational Chemistry. Presently, the department has a total of seventeen (17) Ph.D. students working in various thrust areas.

The department has a total 04 faculty members who are involved in quality research work apart from their regular teaching and administrative work.

The M.Sc. students of the department are encouraged to apply for summer internship programs in various reputed institutes and universities of the country.

The department attracts students from various other institutes and universities for M.Sc. and Ph.D. program in view of the concepts of interdisciplinary teaching and research for the advancement in the fields of organic materials, nanoscience and technology, biological chemistry etc.

2. Programmes Offered:

- i. M.Sc. in Chemistry (2 years) and ii. PhD (Full-time and Part-time)

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance (ongoing)
Dr. Gitish K. Dutta	Associate Professor	Ph.D.	Organic and Hybrid Materials (Organic Chemistry)	08-08-2013	4
Dr. Amit Kumar Paul	Assistant Professor	Ph.D.	Theoretical Chemistry (Physical Chemistry)	24-06-2016	6
Dr. Atanu Singha Roy	Assistant Professor	Ph.D.	Biophysical Chemistry (Physical Chemistry)	23-07-2015	5
Dr. Naba Kamal Nath	Assistant Professor	Ph.D.	Crystal Engineering and Energy Converting Smart Materials (Inorganic Chemistry)	28-07-2015	5

4. List of Publications

International Journals

ASR Group

- Mahabul Haque, Ibemhanbi Konthoujam, Sona Lyndem, Sudipta Koley, Kripamoy Aguan, **Atanu Singha Roy***, Formation of ZnS Quantum Dots using Green Tea Extract: Applications into Protein binding, Bio-sensing, Anti-bacterial and Cell Cytotoxicity studies, Journal of Materials Chemistry B, 2023,11, 1998-2015.
- Kakali Baruah, Ibemhanbi Konthoujam, Sona Lyndem, Kripamoy Aguan, **Atanu Singha Roy***, Complexation of turmeric and curcumin mediated silver nanoparticles with human serum albumin: Further investigation into the protein-crown formation, anti-bacterial effects and cell cytotoxicity studies, Spectrochimica Acta A: Molecular and Biomolecular Spectroscopy, 294, 2023, 122540.
- Sona Lyndem, Upasana Hazarika, P Athul, Anindita Bhatta, Vivek Prakash, Anupam Nath Jha*, **Atanu Singha Roy***, A comprehensive in vitro exploration into the interaction mechanism of coumarin derivatives with bovine hemoglobin: Spectroscopic and computational methods, Journal of Photochemistry and Photobiology A: Chemistry, 436, 2023, 114425.
- S. Sarmah, U. Hazarika, Sony Moni Das, Sana Quraishi, Anindita Bhatta, Vinay Kumar Belwal, Anupam Nath Jha* and **Atanu Singha Roy***, Deciphering the interactions of phytochemicals with ovalbumin, the major food allergen

from egg-white: Spectroscopic and computational studies, *Luminescence*, 2022, 37, 2105-2122. DOI: [10.1002/bio.4401](https://doi.org/10.1002/bio.4401)

- S. Lyndem, R. Gazi, VK Belwal, A. Bhatta, M. Jana*, **A. Singha Roy***, Binding of bioactive esculin and esculetin with hen egg white lysozyme: Spectroscopic and computational methods to comprehensively elucidate the binding affinities, interacting forces and conformational alterations at molecular level, *Journal of Molecular Liquids*, 360, 2022, 119423, DOI: <https://doi.org/10.1016/j.molliq.2022.11942>
- S. Sarmah, A. Gowsami, VK Belwal, **A. Singha Roy***, Mitigation of ribose and glyoxal induced glycation, AGEs formation and aggregation of human serum albumin by citrus fruit phytochemicals naringin and naringenin: An insight into their mechanism of action, *Food Research International*, 2022, 157, 111358. DOI: <https://doi.org/10.1016/j.foodres.2022.111358>
- M. Haque, S. Lyndem, **A. Singha Roy***, Interaction properties of biosynthesized cadmium sulphide quantum dots with human serum albumin: further investigation of antibacterial activities and sensing applications, *Luminescence*, 2022, 37, 837-853. DOI: [10.1002/bio.4228](https://doi.org/10.1002/bio.4228).

NKN Group

- Fast and reversible bidirectional photomechanical response displayed by a flexible polycrystalline aggregate of a hydrazone, Poonam Gupta, Suryanarayana Allu, Pragyan J. Hazarika, Nisha R. Ray, Ashwini K. Nangia and Naba K. Nath, *CrystEngComm*, 2022,24, 7261-7265.
- Polymorphs with Remarkably Distinct Physical and/or Chemical Properties, Binoy K. Saha, Naba K. Nath, Ranjit Thakuria, 23, 2023, e202200173.

GKD Group

- Recent Advancement in Carbon-Based Materials as Sulfur Hosts for Rechargeable Aluminum-Sulfur (Al-S) Batteries, N Deka, GK Dutta *Current Opinion in Electrochemistry*, 101222, 2023

- Nitrogen and Sulfur Enriched Porous Carbon Materials with Trace Fe Derived from Hyper Crosslinked Polymer as an Efficient Oxygen Reduction Electrocatalyst J Barman, N Deka, PK Maji, GK Dutta *ChemElectroChem* 9 (15), e202200677 1, 2022
- Promising N, P Co doped Porous Carbon Materials as Metal Free Electrocatalyst for Oxygen Reduction Reaction in Alkaline Medium, J Barman, N Deka, S Rudra, GK Dutta, *ChemistrySelect* 7 (28), e202200570 , 2022

AKP Group

- A. Agarwal, P. J. Boruah, B. Sarkar and **A. K. Paul**, Post transition state *J. Phys. Chem. A* Post-Transition-State Direct Dynamics Simulations on the Ozonolysis of Catechol, 2022, 126, 32, 5314–5327. <https://doi.org/10.1021/acs.jpca.2c04028>
- A. Agarwal and **A. K. Paul**, Details of ozonolysis of catechol at high temperature and product energy distribution, *J. Chem. Sci.*, 2023, 135:33. <https://doi.org/10.1007/s12039-023-02152-7>
- Arindam Das, Sovan Dey, Ram Naresh Yadav, Palash Jyoti Boruah, Prerana Bakli, Sourav Sarkar, Partha Mahata, A. K. Paul, Md. Firoj Hossain, An Expedient One-Pot Two-Component Synthesis of Quinoxaline Derivatives in Natural Deep Eutectic Solvents (NADESS) , *Chem.Select.* 8, e202204651 (2023)
- Sovan Dey, Arindam Das, Ram Naresh Yadav, Palash Jyoti Boruah, Prerana Bakli, Tania Baishya, Koushik Sarkar, Anup Barman, Ranabir Sahu, Biplab Maji, A. K. Paul, Md. Firoj Hossain, Visible Light-Induced Ternary Electron Donor-Acceptor Enabled Synthesis of 2-(2-Hydrazinyl) thiazole Derivatives and The Assessment of Their Antioxidant and Antidiabetic Therapeutic Potential, *Org. Biomol. Chem.* 2023, 21, 1771-1779
- S. S. Ahamed, H. Mahanta, A. K. Paul*, An Advanced Bath Model to Simulate Association Followed by Ensuing Dissociation Dynamics of Benzene + Benzene System: A Comparative Study of Gas and Condensed Phase Results. *Phys. Chem. Chem. Phys.*, 2022,24, 23825-23839.

5. Guest Lectures in the Department

- A. Dr. Anupam Nath Jha (Asst. Prof., Dept. of Molecular Biology and Biotechnology, Tezpur University) delivered a research talk on 2nd March 2023 [Title: Computational Biophysics, Bioinformatics, Systems Biology]
- B. The Department in collaboration with NEHU has organized a popular lecture of Prof. Biman Bagchi, SERB-DST National Science Chair Professor and honorary professor, IISc., Bangalore, November 14, 2022



6. Conferences / Workshops / Seminars / Trainings Attended by faculty members:

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Amit Kumar Paul	Machine Learning for Science, Kodaikanal, TN (Attended and chaired a session)	9-12 March, 2023

7. Invited Talks (as resource person)

Title of the talk	Faculty Name	Event/Institute/University/Place	Duration
Luminescent Quantum Dots for Biological Applications	Dr. Atanu Singha Roy	Refresher Course in Chemistry, NEHU Shillong (UGC-HRDC)	8th November 2022
Luminescent Quantum Dots for Biological Applications	Dr. Atanu Singha Roy	Synod College, Shillong (IUPAC - Global Women's Breakfast 2023)	14th February 2023
Role of HPC in Molecular Simulation	Dr. Amit Kumar Paul	The Workshop on High Performance Computing and its Multidisciplinary Applications, NIT Meghalaya	August 22-27, 2022
The Effect of Atmosphere (N_2) on the Association/Dissociation Reactions of Weakly Bound Aromatic Complexes at High Temperatures	Dr. Amit Kumar Paul	Theoretical Chemistry Meeting: Structure and Dynamics 2022	May 26-29, 2022
The Effect of Atmosphere (N_2) on the Association/Dissociation Reactions of Weakly Bound Aromatic Complexes at High Temperatures	Dr. Amit Kumar Paul	International Conference on Emerging Trends in Chemical Sciences (ETCS 2023), NEHU	March 2-4, 2023

8. Sponsored Project (Received/Ongoing/Completed)

Sl. No.	Title of the Project	Investigators (P.I. & Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	QM + MM Chemical Dynamics on Chemical Reactions and Non-Adiabatic Processes in Condensed Phase Molecular Systems	Dr. Amit K. Paul	SERB, DST	Rs. 36,58,000	2018-2021	Completed

Sl. No.	Title of the Project	Investigators (P.I. & Co-P.I.)	Funding Agency	Funding amount	Duration	Status
2	Synthesis of biocompatible silver and gold nanoparticles using dietary polyphenols as reducing agents: Further investigation into their binding efficacies with the carrier proteins, biomolecular detections, anti-bacterial properties and cell cytotoxicity	Dr. Atanu Singha Roy	SERB (CRG)	Rs. 25,12,400	2020-2023	Ongoing
3	Post Transition State Dynamics On Chemical Reactions and the effect of Solvation	Dr. Amit Kumar Paul	CSIR	Rs. 13,96,000	2019-2022	Completed
4	Multi-stimuli responsive smart crystalline material derived from organic molecular photoswitch	Dr. Naba Kamal Nath	DST-SERB-CRG	Rs. 31,72,400	2020-2023	Completed
5	An investigation into the molecular interaction of dietary polyphenols with hen egg white lysozyme using biophysical techniques	Dr. Atanu Singha Roy	SERB	Rs. 36,69,000	2016-2019	Completed
6	Molecular interactions of the antioxidant polyphenols and their copper complexes with human serum albumin and its glycosylated analogues	Dr. Atanu Singha Roy	CSIR	Rs. 6,90,000	2017-2020	Completed
7	On-the-Fly Chemical Dynamics Simulations in Gas and Condensed Phase Molecular Systems Using Machine Learning Approach	Dr. Amit Kumar Paul	SERB-DST	48,11,400	2022-25	Ongoing

9. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1.	Dr. Atanu Singha Roy	Chief Warden	July 2021-till date
2.	Dr. Atanu Singha Roy	CIF Chairman	February 2021-till date
3.	Dr. Atanu Singha Roy	Medical Committee (Member)	July 2021-till date
4.	Dr. Gitish Kishor Dutta	Dean RC	1/7/2020 till date
5.	Dr. Gitish Kishor Dutta	Member Secretary, Institute's intellectual property committee	3/12/2020-till date
6.	Dr. Amit Kumar Paul	President, Student Activity Centre	July 2021 - till date
7.	Dr. Amit Kumar Paul	PIC, Transit house & Guest house	February 2023 - till date
8.	Dr. Amit Kumar Paul	Member, Library Committee	July 2019 - till date
9.	Dr. Naba Kamal Nath	HoD, Chemistry	July 2021 till date
10.	Dr. Naba Kamal Nath	Member, CIIE	July 2022 till date

10. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Member of
1	Dr. Gitish K. Dutta	Life time member of CRSI and Indian Society for ElectroAnalytical Chemistry (ISEAC)
2	Dr. Amit Kumar Paul	Life time Member of CRSI, Indian Society for ElectroAnalytical Chemistry
		Life time Member of Indian Chemical Society
		American Chemical Society (ACS)

11. Any Other Notable Information:

1	Dr. Amit Kumar Paul	Recent Advances in Chemistry: Theoretical and Computational Aspects 2022 (Organized as a convener)	18-20 November, 2022
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12. Achievements, awards and recognition of the student and staff

A. Faculty Members

Sl. No.	Faculty Name	Role/Technical Assistance	Journal Name/Conference
1	Dr. Atanu Singha Roy	Reviewers	International Journal of Food Science and Technology/Food Chemistry/Journal of the Indian Chemical Society/Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy/Amino Acids/Journal of Molecular Liquids/Journal of Molecular Structure/Food and Function/ACS Bio & Med Chem Au
2	Dr. Amit Kumar Paul	Reviewers	International journal of chemical kinetics, Journal of Chemical Sciences
3	Dr. Naba Kamal Nath	Reviewers	Nature Communication, Crystal Growth and Design, CrystEngComm

13. Ph.D. Students (Best Poster/Paper Awards)

- Mahabul Haque: 3rd best poster award, 4th Research Conclave 2023, organized by NIT Meghalaya.
- Kakali Baruah: Best poster award in ISMC, 2022, organized by BARC, Mumbai.
- Jayshree Barman: Best poster award in EIHE 2023, organized by BARC, Mumbai and Best poster award (1st), 4th Research Conclave 2023, organized by NIT Meghalaya.
- Ankita Agarwal: Best poster award in international conference ETCS-23, organized by NEHU, Shillong.
- Pragyan Jyoti Hazarika: Best poster award in Crystal Engineering and Solid-State Chemistry-2023.
- Poonam Gupta: Award for best research work demonstration in 4th Research Conclave 2023, organized by NIT Meghalaya.
- Poonam Gupta: Award for best paper presentation in 4th Research Conclave 2023, organized by NIT Meghalaya.

14. Conference/symposium/workshop attended by the Ph.D. students

Name of the student	Name of the conference/symposium/workshop	Organizer(s)	Duration	Title of poster/oral presentation
Mahabul Haque	National Conference on Recent Advances in Chemistry: Theoretical and Computational Aspect	Department of Chemistry, NIT Meghalaya and NEHU	November 18-20, 2022	NA
	Frontiers in Chemical Sciences-2022	Department of Chemistry, IIT Guwahati	December 2-4, 2022	Synthesis of zinc sulphide quantum dots using green tea extract: Potential applications in protein binding, anti-bacterial activity, cell cytotoxicity and biosensing studies
	7th International Conference on Recent Advances in Material Chemistry (ICRAMC-2023)	Department of Chemistry, SRM Institute of Science and Technology	February 16-18, 2023	HSA-mediated Synthesis of CdTe Quantum Dots: Anti-bacterial, Cell Cytotoxicity studies and Biosensing Applications
	4th Research Conclave	NIT Meghalaya	February 28-March 1, 2023	Synthesis of zinc sulphide quantum dots using green tea extract: Potential applications in protein binding, antibacterial activity, cell cytotoxicity and biosensing studies

Name of the student	Name of the conference/ symposium/ workshop	Organizer(s)	Duration	Title of poster/oral presentation
	International Symposium on Emerging Trends in Chemical Sciences (ETCS-2023)	NEHU	March 2-4, 2023	Formation of Zinc Sulphide Quantum Dots using green tea extract: Applications into Protein binding, Bio-sensing, Anti-bacterial and Cell Cytotoxicity studies
Kakali Baruah	National Conference on Recent Advances in Chemistry: Theoretical and Computational Aspect.	Department of Chemistry NIT Meghalaya and NEHU	November 18-20, 2022	NA
	9th Interdisciplinary Symposium on Materials Chemistry (ISMC-2022)	Chemistry Division, Bhaba Atomic Research Centre, Mumbai and Society for Materials Chemistry, Mumbai	December 7-10, 2022	Biosynthesized Silver Nanoparticles for Lysozyme binding and Antibacterial activity.
	13th National Workshop on Fluorescence and Raman spectroscopy	IISER, Thiruvananthapuram, RGCBS and Fluorescence Society	January 6-11, 2023	Biocompatible silver nanoparticles: Exploration into the protein-corona formation, anti-bacterial efficacy and cell cytotoxicity studies
	4th Research Conclave	NIT Meghalaya	March 28-April 1, 2023	Investigation into the protein corona formation of human serum albumin on the surface of Turmeric and Curcumin stabilized gold nanoparticles using multi-spectroscopic techniques
	International Symposium on Emerging Trends in Chemical Sciences (ETCS-2023)	NEHU	March 2-4, 2023	Exploration into the protein-corona formation by turmeric extract and curcumin mediated silver nanoparticles with efficient anti-bacterial efficacy and cell cytotoxicity
Ankita Agarwal	International conference on Spectroscopy and dynamics of molecules and clusters	TIFR Hyderabad and IIIT Hyderabad	November 10-13, 2022	Post- transition state dynamics on the ozonolysis of catechol and the effect of solvent
	National Conference on Recent Advances in Chemistry: Theoretical and Computational Aspect	Department of Chemistry NIT Meghalaya and NEHU	November 18-20, 2022	Post- transition state dynamics on the ozonolysis of catechol and the effect of solvent
	4th Research Conclave	NIT Meghalaya	February 28-March 1, 2023	Post- transition state dynamics on the ozonolysis of catechol and product energy partitioning.
	International Symposium on Emerging Trends in Chemical Sciences (ETCS-2023)	NEHU	March 2-4, 2023	Post- transition state dynamics on the ozonolysis of catechol and the effect of solvation
Palash Jyoti Boruah	International conference on Spectroscopy and dynamics of molecules and clusters	TIFR Hyderabad and IIIT Hyderabad	November 10-13, 2022	
	National Conference on Recent Advances in Chemistry: Theoretical and Computational Aspect.	Department of Chemistry NIT Meghalaya and NEHU	November 18-20, 2022	Theoretical Understanding of an Electronically Controlled Photochemical Intramolecular C-N Coupling Reaction
	4th Research Conclave	NIT Meghalaya	February 28-March 1, 2023	

Name of the student	Name of the conference/ symposium/ workshop	Organizer(s)	Duration	Title of poster/oral presentation
	International Symposium on Emerging Trends in Chemical Sciences (ETCS-2023)	NEHU	March 2-4, 2023	
Jayshree Barman	Conference on Electrochemistry for Industry, Health and Environment (EIHE-2023)	B.A.R.C, Mumbai	7th-11th February, 2023	Promising dual-doped Porous Carbon Materials as Metal-Free Electrocatalyst for Oxygen Reduction Reaction
	4th Research Conclave	NIT Meghalaya	28th-1st March, 2023	

Department of Humanities and Social Sciences

1. Brief Introduction to the Department:

The main aim of the department is the holistic and all-round development of the technical graduates into socially responsible

individuals by providing allied knowledge essential to engineering students. The department is equipped with a modern Computer Assisted Language Learning Laboratory.

2. Programmes Offered: Ph.D. Programme

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining and Leaving	Ph.D. Guidance	Remarks
Dr. P. S. Mangang	Associate Professor	Ph.D.	English	01.06.2012 & Continuing	2 completed, 1 submitted, 6 On-going	HoD
Dr. Sunildro LS Akoijam	Visiting Faculty	Ph.D.	Management	14.12.2021 & 02.06.2022	NA	Spring Semester 2022
Dr. Khelsoril Wanbe	Assistant Professor (Adhoc)	Ph.D.	English	10.10.2022 & Continuing	NA	Autumn Semester 2022
Dr. Kelvin Mutum	Assistant Professor (Adhoc)	Ph.D.	Management	01.12.2022 & Continuing	NA	Spring Semester 2023

4. Administrative Responsibilities Held or Membership of Committees:

Name	Role	Duration
P. S. Mangang	Head of Department	Whole Year
	Chairman, Departmental Research Committee	Whole Year
	Chairman, Departmental Academic Committee	Whole Year
	Faculty-in-charge, Language Lab	Whole Year
	Member, Academic Programmes Committee	Whole Year
	Member, UG-PEC (Programme Evaluation Committee)	Whole Year
	Member, PG-PEC (Programme Evaluation Committee)	Whole Year
	Member, IQAC	Whole Year
	Member, Library Committee	Whole Year
	Member, Routine Committee	Whole Year
	Chief Editor of NITM Chronicle	Whole Year
	Member Secretary, Anti Ragging Squad committee	Nov 2022 till date
	Chairman, Seating Arrangement Committee	Feb 2023 till date

5. Membership of Professional Bodies:

Name of Faculty	Member of
P. S. Mangang	English Literary Circle Manipur
	English Language Teachers' Association of India
	English Language Teachers' Association of India, Meghalaya Chapter

6. Outreach Activities:

Name	Activities
P. S. Mangang	Member, Board of Studies, Department of English, Manipur University of Culture, Imphal
	Chairman of Doctoral Committee (DC) for 2 Research Scholars at NIT Mizoram
	External Member of Research Advisory Committee (RAC) for a Research Scholar of Tripura University
	Question paper setter for College of Horticulture and Forestry, Central Agricultural University, Arunachal Pradesh
	Examiner, Ph.D. Thesis, EFLU
	External Examiner for Ph.D. Viva Voce, EFLU
	Served as the e-Expert for the Pre-Submission Seminar of a Ph.D. Scholar of the Department of English, Tripura University
	Subject Expert for Enhancement Seminar at EFLU, Shillong Campus
Reviewer for <i>Journal of International Women's Studies</i>	

7. Ph.D. Scholars' Profile:

Name	Specialization	Supervisor	Remarks
Ms. Arundhati Ashangbam	Literature	Dr. P. S. Mangang	Oral Defence Evaluation scheduled for 03.04.2023
Ms. Ankita Bhowmick	Literature		Advanced Stage
Ms. Amanda Basaiawmoit	Literature		Advanced Stage
Ms. Santidora Nongpluh	Cultural Studies		Cleared Comprehensive Exam
Ms Bibiana Rynthiang	Literature		Cleared Comprehensive Exam
Ms. Th. Ayingbi Chanu	Literature		Undergoing Course Work
Ms. Ambika Rai	Communication		Undergoing Course Work

8. List of Publications in Journals/ Chapters in books:

1. Arundhati Ashangbam, **P. S. Mangang**, "The Holocaust and the *Chahi Taret Khuntakpa: A Critical Comparison*", *Pertanika Journal of Social Sciences & Humanities*, Volume 30, Issue 4, December 2022
2. Arundhati Ashangbam, **P. S. Mangang**, "Reliving Auschwitz: A Study of Jewish Identity in Levi's Testimonies", *Literary Voice*, Number 18, September 2022
3. Ankita Bhowmick, **P. S. Mangang**, "Black and Disabled Bodies in Literary Imagination: A Critique of Toni Morrison's Select Works", *IUP Journal of English Studies*, Volume 17, Issue 3, September 2022
4. Amanda Basaiawmoit, **P. S. Mangang**, "The Battle of Belonging: A Study of Contemporary Shillong Poets", *Rupkatha Journal on Interdisciplinary Studies in Humanities*, Volume 14, Number 2, June 2022
5. Ankita Bhowmick, **P. S. Mangang**, 'Women as a Site of Resistance in Toni Morrison's *The Bluest Eye* and *Sula*', in Singh, Manju et. al. (eds) *Resilience and Transformation for Global Restructuring*. UK: Ethics International Press Ltd., pp. 390-396, 2022

9. List of Presentations in Conferences:

1. Ankita Bhowmick & P. S. Mangang, 'Lessons Learned from Studying MeToo through Toni Morrison's *The Bluest Eye* and *Beloved*', at the 3rd International 'ARTEMIS' Congress on Humanities and Social Sciences, 25th March to 27th March 2023.
2. A. Bhowmick & P. S. Mangang, 'Black and Disabled Bodies in Literary Imagination: A Critique of Toni Morrison's Works', at the 4th Annual Research Conclave, organised by NIT Meghalaya, 28th February & 1st March 2023.
3. A. Bhowmick & P. S. Mangang, 'Manifold Facets of Resistance in Select Works of Toni Morrison' in the IASA 10th World Congress on Matters of Life: Human Scapes and Scopes, organised by Guru Gobind Singh Indraprastha University and International American Studies Association, 22nd to 24th November 2022.
4. A. Bhowmick & P. S. Mangang, 'Female Bodies as a Site of Resistance in Toni Morrison's *Sula* and *The Bluest Eye*', at the Two-Day National Conference on Genocides and Oppression: Interpretations, Intersections, and Interstices, organized by NIT Meghalaya, 18th & 19th November 2022.

5. Th. Ayingbi Chanu & P. S. Mangang, 'Plight of Displaced Children in Mary Hoffman's *The Color of Home* and Francesca Sanna's *The Journey*', at the Two-Day National Conference on Genocides and Oppression: Interpretations, Intersections, and Interstices, organized by NIT Meghalaya, 18th & 19th November 2022.
6. A. Bhowmick & P. S. Mangang, 'Violence and Use of Violent Language in the Literary Works of North East India', in the National Workshop cum Conference on 'Teaching English in Rural Areas of North East India: Using Innovative Bilingual Methods', organized by EFLU, Shillong Campus & ICSSR-NERC, 3rd & 4th November 2022.
7. Khelsoril Wanbe, 'The Educating and Entertaining Values of Rock Music', in the National Workshop cum Conference on 'Teaching English in Rural Areas of North East India: Using Innovative Bilingual Methods', organized by EFLU, Shillong Campus & ICSSR-NERC, 3rd & 4th November 2022.
8. Th. Ayingbi Chanu & P. S. Mangang, 'Displaced Children and

the Struggle to Acquire New Language in Mary Hoffman's *The Color of Home*', in the National Workshop cum Conference on 'Teaching English in Rural Areas of North East India: Using Innovative Bilingual Methods', organized by EFLU, Shillong Campus & ICSSR-NERC, 3rd & 4th November 2022.

9. A. Bhowmick & P. S. Mangang, 'Black Disabled Women and Resistance in Select Works of Toni Morrison' in 'A Three Day National Conference on Humanities and Social Sciences organized by Manipur University & ELCM, 10th to 12th June 2022.

10. Workshops/Conferences Organised:

1. Two-day National Conference on 'Genocides and Oppression: Interpretations, Intersections, and Interstices (COIN-2022), 19th & 20th November 2022, organized in collaboration with the Department of English Literature, EFLU, Shillong Campus.



5-Day Workshop on 'Fundamentals of Management' from 9th to 13th May 2022 (Monday to Friday)

11. Resource Persons/External Speakers/Subject Experts/ External Examiners Invited:

1. Prof. Th. Ratankumar Singh, Head, Department of English and Cultural Studies, Manipur University
2. Prof. Mousumi Guha Banerjee, Director, EFLU, Shillong Campus
3. Dr. Suranjana Choudhury, Assistant Professor, Department of English, NEHU
4. Dr. Rosy Yumnam, Assistant Professor, Department of English Language Education, EFLU, Shillong Campus
5. Dr. Sunildro LS Akoijam, Assistant Professor, Department of Management, NEHU, Tura Campus

6. Dr. Subhajit Sengupta, Associate Professor, Department of English and Cultural Studies, The University of Burdwan, West Bengal

12. Invited Talks Delivered:

P. S. Mangang, 'Teaching Basic Writing Skills to Learners with Special Needs' in the National Workshop cum Conference on 'Teaching English in Rural Areas of North East India: Using Innovative Bilingual Methods', organized by EFLU, Shillong Campus & ICSSR-NERC, 3rd & 4th November 2022

13. Awards/Achievements:

Ms. Ankita Bhowmick (P19HS001) received the Third Prize in Oral Presentation (Humanities and Social Sciences) at the 4th Annual Research Conclave, organised by NIT Meghalaya, 28th February & 1st March 2023

Department of Mathematics

1. Brief Introduction to the Department:

The Department of Mathematics was established in 2012 with the inception of National Institute of Technology Meghalaya. The department offers Ph.D. and 2 year-M.Sc. programmes in Mathematics. The department also supports all the engineering departments by offering undergraduate and postgraduate level courses in Mathematics to the B. Tech., M. Tech., and Ph.D. students over a number of semesters. The department has been organizing seminars and summer internship programs for students and research scholars. The department has at present six regular faculty members and one adjunct professor. The faculties are

actively engaged in research, teaching, training and administrative work. The main objective of the department is to attract the students of science and engineering, and to provide them with academically coherent programmes, with courses that range from the fundamental to the advanced. The department has a FIST sponsored mathematics laboratory with computers, workstation equipped with software such as MATLAB, MATHEMATICA, etc. to facilitate faculty, students for their research and laboratory-oriented courses.

2. Programmes Offered:

- 2-year M. Sc. programme
- Ph. D. programme

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Dr. Saikat Mukherjee	Associate Professor	Ph.D.	Functional Analysis	25-07-2013	Completed: 01 Ongoing: 02
Dr. Tikaram Subedi	Assistant Professor	Ph.D.	Abstract Algebra	01-06-2012	Completed: 01 Ongoing: 02
Dr. Manideepa Saha	Assistant Professor	Ph.D.	Linear Algebra	22-07-2013	Completed: 01 (As Co-supervisor) Ongoing: 03
Dr. Bidyasagar Kumbhakar	Assistant Professor	Ph.D.	Fluid Dynamics	20-07-2015	Completed: 01 Submitted: 01 Ongoing: 02
Dr. Adarsha K. Jena	Assistant Professor	Ph.D.	Statistics	01-10-2019	Ongoing: 01
Dr. Timir Karmakar	Assistant Professor	Ph.D.	Fluid Dynamics	27-01-2020	Ongoing: 01

4. List of Publications:

a) Journals:

1. Osamu Sano, **Timir Karmakar** and G. P. Raja Sekhar, Viscous flow around three-dimensional macroscopic cavities in a granular material: asymptotic theory for two sufficiently distant spherical cavities of arbitrary configuration, *Journal of Fluid Mechanics* (Cambridge University Press), 2023. doi:10.1017/jfm.2023.312.
2. **Timir Karmakar**, Swarup Barik and G. P. Raja Sekhar, Multiscale Analysis of Concentration Distribution in Unsteady Couette-Poiseuille Flows Through a Porous Channel, *Proceedings of The Royal Society A* (The Royal Society), 479, 20220494, 2023.
3. Suman Dowerah, **Saikat Mukherjee**, Weaving phase retrieval and weaving norm retrieval, *Int. J. Appl. Comput. Math.*, 8:198, 2022. <https://doi.org/10.1007/s40819-022-01419-w>
4. Ajit Kumar Gupta, **Saikat Mukherjee**, Induced homeomorphism and Atsujii hyperspaces, *Russ Math.*, 66(10), 8-15, 2022. <https://doi.org/10.3103/S1066369X22100061>
5. Suman Dowerah, **Saikat Mukherjee**, Phase retrieval and norm retrieval in tensor product space, *J. Pseudo-Differ. Oper. Appl.*, 14, 1, 2023. <https://doi.org/10.1007/s11868-022-00497-0>
6. Ajit Kumar Gupta, **Saikat Mukherjee**, On nonempty intersection properties in metric spaces, *Journal of Computational Analysis & Applications*, 31(1), 117-126, 2023.

7. Suman Dowerah, **Saikat Mukherjee**, Norm retrieval by vectors and projections, *Journal of Computational Analysis & Applications*, 31(2), 236-243, 2023.
8. B. Ghosh, B. Barman and **M. Saha**, Multiple dynamics in a delayed predator-prey model with asymmetric functional and numerical responses, *Mathematical Methods in Applied Sciences*, 2022, doi:10.1002/mma.882.
9. A. Mustafa and **M. Saha**, A generalized projection iterative method for solving non-singular linear systems, *Mathematical Foundations of Computing*, 2022, Vol. 5(4), 343-350. doi: 10.3934/mfc.2022009.
10. J. Chakravarty and **M. Saha**, Generalization of Interval Jacobi and Gauss-Seidel Methods for Interval Linear System, *Journal of Computational Analysis and Applications*, 2023, Vol. 31(3), 345-365.
11. M. Das, **B. Kumbhakar** and A. J. Chamkha, Significance of Navier's slip and Arrhenius energy function in MHD flow of Casson nanofluid over a Riga plate with thermal radiation and non-uniform heat source, *Int. J. Mod. Phys. B*, 2023 (Accepted).
12. S. Nandi, **B. Kumbhakar** and G. S. Seth, Statistical and numerical analysis of unsteady hybrid nanoliquid flows over an elongating surface with oblique Lorentz force: A comparison of Cu-Al₂O₃/H₂O, Cu-Al₂O₃/CH₃OH and Cu-Al₂O₃/H₂O-EG, *Int. J. Mod. Phys. B*, 2023 (Accepted).
13. M. Das and **B. Kumbhakar**, Attributes of Hall current and radiation absorption in unsteady tangent hyperbolic nanofluid flow over a stretching surface with activation energy: A numerical study, *Proc. Inst. Mech. Eng. E: J. Process Mech. Eng.*, 2022, DOI: <https://doi.org/10.1177/09544089221147386>.
14. S. Nandi, **B. Kumbhakar** and N. C. Roy, Featuring the Hall effect and variable thermal conductivity on magnetized hybrid nanoliquid flow for three distinct shapes of nanoparticles: A comparative study, *Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)*, Vol-103(1), Article ID: e202100458, 2023.
15. **B. Kumbhakar** and S. Nandi, MHD oscillatory flow of hybrid nanofluid along a vertical plate with ramped wall temperature, heat source and thermal radiation: an exact solution, *Heat Transfer*, Vol.-51(8), pp. 7890-7909, 2022.
16. T. Siva, S. Jangili and **B. Kumbhakar**, Analytical solution to optimize the entropy generation in EMHD flow of non-Newtonian fluid through a microchannel, *Pramana - Journal of Physics*, Vol.-96:168, 2022.
17. **B. Kumbhakar**, S. Nandi and A. J. Chamkha, Unsteady hybrid nanofluid flow over a convectively heated cylinder with inclined magnetic field and viscous dissipation: A multiple regression analysis, *Chinese Journal of Physics*, Vol.-79, pp. 38-56, 2022.
18. T. Siva, S. Jangili, **B. Kumbhakar** and P. K. Mandal, Unsteady electromagnetohydrodynamic flow of couple stress fluid through a microchannel: A theoretical analysis, *European Journal of Mechanics / B Fluids*, Vol.-95, pp. 83-93, 2022.
19. Debraj Roy, Sanjiv Subba and **Tikaram Subedi**, Domain Property of rings relative to Jacobson radical, *Annali Del Universita Di Ferrara*, 2023 (Accepted).
20. Sanjiv Subba and **Tikaram Subedi**, LNzs-rings, *Bulletin da Sociedade Paranaense de Matematica*, 2023 (Accepted).
21. Sanjiv Subba, **Tikaram Subedi** and Ardeline M. Buhphang, Pointwise semicommutative rings, *Mathematical Notes*, 2023 (Accepted)

b) Book Chapters:

Sl. No.	Author Name	Chapter Title	Publisher	ISBN No	Pages	Year
1	B. Kumbhakar , M. Das and J. Singh	A Computational Investigation of the Characteristics of Velocity Slips and Convective Boundary Conditions in Maxwell Nanofluid Flow over a Permeable Stretching Surface with Activation Energy	Springer	978-3-031-29959-9	138-154	2023

5. Conferences / Workshops / Seminars / Trainings Attended by faculty members:

Sl. No.	Name of Student	Name of the Programme attended	Organised by	Duration
1	Ajit Kumar Gupta (P17MA002)	Annual Foundation School - III	IIT Guwahati	June 20- July 16, 2022
		5th International Conference on Mathematical Modelling, Applied Analysis and Computation-2022 (ICMMAAC-22)	JECRC University, Jaipur	August 4–6, 2022
2	Thota Siva (P18MA001)	4th Research Conclave 2023	NIT Meghalaya	February 28-March 01, 2023.
3	Ashif Mustafa (P18MA002)	4th Research Conclave 2023	NIT Meghalaya	February 28-March 01, 2023.
4	Manik Das (P18MA003)	International Online Workshop on “Advanced Numerical Techniques for Differential Equations (ANTDE-22)”,	Department of Mathematics, MNIT Jaipur	6-10 June 2022,
		5th International Conference on Mathematical Modelling, Applied Analysis and Computation-2022 (ICMMAAC-22)	JECRC University, Jaipur	August 4–6, 2022
5	Aritra Narayan Hisabia (P18MA004)	5-day online GIAN course on ‘Matrix Classes in Solving Linear Complementarity Problem’	Department of Mathematics, NIT Meghalaya	December 12-16, 2022
		4th Research Conclave 2023	NIT Meghalaya	February 28-March 01, 2023.
6	Suman Dowerah (P19MA001)	5th International Conference on Mathematical Modelling, Applied Analysis and Computation-2022 (ICMMAAC-22)	JECRC University, Jaipur	August 4-6, 2022
		International Conference on Nonlinear Analysis and Applications-2022 (ICNAA 2022)	Assam Don Bosco University, Assam	November 22–23, 2022
		National Conference on “Advances in Mathematical Sciences” (NCAMS-2022)	Department of Mathematics, Gauhati University	December 22-23, 2022
		4th Research Conclave 2023	NIT Meghalaya	February 28-March 01, 2023.
7	Sanjiv Subba (P19MA002)	Robotic Process Automation	C-DAC, Kolkata in association with CIIE and Center for Robotics and Mechatronics, NIT Meghalaya	March 20-24, 2023
		International Conference on Algebra, Analysis and Applications	Department of Mathematics, Manipal Institute of Technology, MAHE, Udupi	January 06 - 08, 2023
		4th Research Conclave 2023	NIT Meghalaya	February 28-March 01, 2023.
8	Jahnabi Chakravarty (P20MA001)	5th International Conference on Mathematical Modelling, Applied Analysis and Computation-2022 (ICMMAAC-22)	JECRC University, Jaipur	August 4–6, 2022
		International Conference on Nonlinear Analysis and Applications-2022 (ICNAA 2022)	Assam Don Bosco University, Assam	November 22–23, 2022
		4th Research Conclave 2023	NIT Meghalaya	February 28-March 01, 2023.
9	Bankitdor M Nongrum (P22MA008)	Bombay Workshop on Statistics and Probability	Department of Mathematics, IIT Bombay	January 3-6, 2023

6. Invited Talks Delivered:

- a) **Dr. Timir Karmakar** delivered an invited talk as 'A. M. Mathai Award Winner' lecture in the 88th Annual Conference of the Indian Mathematical Society: An International Meet, BIT Mesra, December 27-30, 2022.
- b) **Dr. Timir Karmakar** delivered an invited talk as an expert in the workshop "Mathematical Modelling of Real-World Applications (MMRWA-2023)" at PDEU, Gandhinagar.
- c) **Dr. Manideepa Saha** has delivered a resource person talk in "Two Day National Webinar on Some Emerging Areas in Pure Mathematics" at Department of Mathematics, St. Anthony's College, Shillong, Meghalaya during September 16-17, 2022.

7. Sponsored Project

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Iterative methods for solving non-square linear systems	Dr. Manideepa Saha	DST-SERB	17,05,200	3 Years	Completed
2	On LU-factorization of Generalized M-matrices	Dr. Manideepa Saha	DAE-NBHM	14,33,600	3 Years	Completed
3	Modeling of endothelial glycocalyx (EGL) and transport of low-density lipoprotein (LDL) in artery: anisotropic porous medium approach	Dr. Timir Karmakar	DST-SERB	13,73,372	2 Years	Ongoing

8. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Timir Karmakar	Warden of Polo Boys Hostel	01.07.2022-Till Date
2	Dr. Saikat Mukherjee	Chairman, Medical & Covid Response Committee	Till June 30, 2022
		Chairman, Examination Committee	01.07.2022- Till date
3	Dr. Manideepa Saha	Professor in-Charge, Centre of International Relations	Full year
4	Dr. Bidyasagar Kumbhakar	Head, Department of Mathematics	Full year
5	Dr. Adarsha Kumar Jena	Warden of New boys Hostel	25.03.2022- Till Date
6	Dr. Tikaram Subedi	Convener, Examination Malpractice Committee	02-06-2022- Till Date

9. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Member of
1	Dr. Saikat Mukherjee	Society for Industrial and Applied Mathematics (SIAM), American Mathematical Society (AMS), Indian Mathematical Society (IMS).
2	Dr. Manideepa Saha	Society for Industrial and Applied Mathematics (SIAM), SIAM Activity Group on Linear Algebra, American Mathematical Society (AMS), Indian Mathematical Society (IMS).
3	Dr. Bidyasagar Kumbhakar	Indian Society of Theoretical and Applied Mechanics (ISTAM) Society of Applied Mathematics, IIT(ISM) Dhanbad
4	Dr. Timir Karmakar	Indian Society of Theoretical and Applied Mechanics (ISTAM) Indian Mathematical Society (IMS)
5	Dr Adarsha Kumar Jena	Indian Mathematical Society (IMS) International Indian Statistical Association (IISA)

10. List of achievements and activities during the Year 2022-23:

- Dr. Timir Karmakar** received the prestigious “A. M. Mathai Award” for the year 2022 awarded by The Indian Mathematical Society.
- Dr. Manideepa Saha** has organized a 5-day GIAN course on “Matrix Classes in Solving the Linear Complementarity Problem” during December 12-16, 2022.
- The department conducted an invited talk on the topic “Wave interaction with a flexible plate of variable thickness in presence of vertical porous plates” by Dr. Rupanita Gayen, Associate Professor, Department of Mathematics, IIT Kharagpur on May 11, 2022.
- Dr. Bidyasagar Kumbhakar** has been recognized and awarded by NIT Meghalaya for his excellent research contribution as young faculty member for the year 2022-2023 on Institute

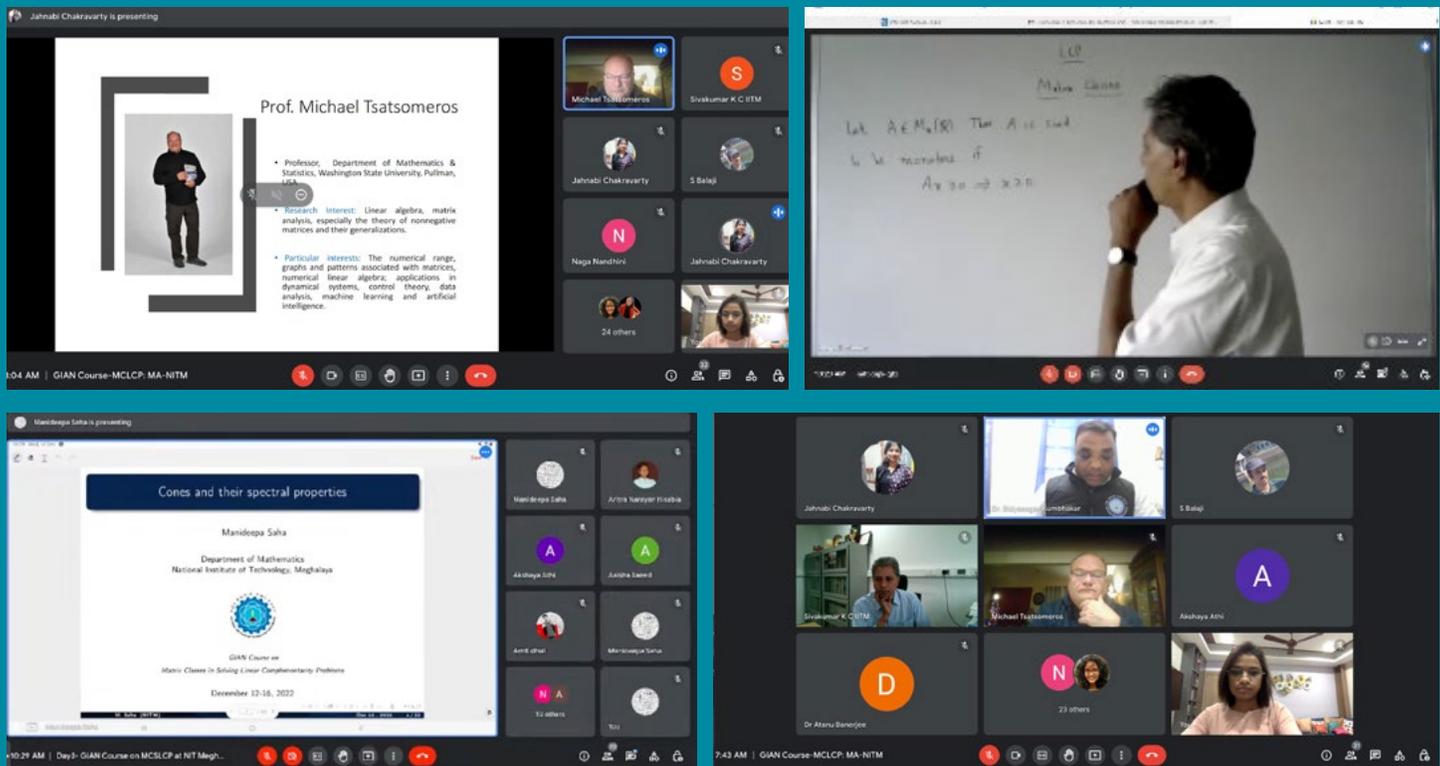
Day.

- Research Scholars **Binandita Barman (P16MA002)** and **Susmay Nandi (P17MA001)** of the Mathematics Department have been awarded the Ph.D. degree in Mathematics by NIT Meghalaya.
- Research Scholar **Manik Das (P18MA003)** received the best oral presentation award in 5th International Conference on Mathematical Modelling, Applied Analysis and Computation (ICMMAAC-2022) during August 4-6, 2022. JECRC University, Jaipur, India.
- Research Scholar **Manik Das (P18MA003)** has been awarded by NIT Meghalaya for his excellent research contributions for the year 2022-2023 on Institute Day.

11. Any Other Notable Information:

Research Scholars **Ajit Kumar Gupta (P17MA002)** and **Manik Das (P18MA003)** of the Mathematics Department have submitted their Ph.D. thesis.

12. Department activities







Department of Physics

1. Brief Introduction to the Department:

The Department of Physics was established in 2012 and comprised 6 faculty, 2 non-teaching staff members, and 32 Ph.D. scholars. The Department of Physics, with its induction, has evolved by offering two years full-time M.Sc Physics program. The department has also progressed in furnishing the Doctor of Philosophy program, and so far, the degree has been awarded to 5 nos. of aspirants. In addition, the department supports the engineering branches of the institute by floating the foundation courses for B.Tech (1st year) and advanced science electives courses like Quantum Computing and Nanoelectronics. The DST

supports the department under the FIST Scheme, Government of India. Under this scheme, Department has developed sophisticated instruments like RF/DC sputtering and Raman spectroscopy at the NITM Sohra campus with a class 100 clean room facility. Faculty members working within Theory and Experimental Condensed Matter Physics, Applied Optics, Nuclear & Particle Physics, and Smart Materials. The department has over 200 peer-reviewed articles and 7 projects from various funding agencies.

2. Programmes Offered:

- Master of Science (Physics)
- Doctor of Philosophy (Physics)

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Prof. Ayon Bhattacharjee	Professor	PhD	Experimental Condensed Matter Physics	24 July 2013	4 ongoing, 10 awarded
Dr. Arpita Nath	Assistant Professor	PhD	Laser Matter Interaction	03 October 2013	3 Ongoing
Dr. K. Senthilkumar	Assistant Professor	PhD	Solar Cell, DFT, Ion Beam modification of the materials	14 July 2015	3 Ongoing, 1 awarded
Dr. Tribedi Bora	Assistant Professor	PhD	Experimental Condensed Matter Physics	06 July 2015	3 ongoing, 1 thesis submitted
Dr. W. L. Reenbohn	Assistant Professor	PhD	Nonequilibrium Statistical Mechanics	02 November 2015	3 Ongoing
Dr Alekha. C. Nayak	Assistant Professor	PhD	Particle Physics, Astroparticle Physics	16 October 2019	3 Ongoing

4. List of Publications:

1. S. Sarmah, K.P. Patra, P. K. Maji, S Ravi, T Bora, A comparative study on the structural, magnetic and dielectric properties of magnesium substituted cobalt ferrites, *Ceram. Int.* 49 (2023) 1444,2. S. Sarmah, R. Borah, P.K. Maji, S. Ravi, T. Bora,
2. Effect of Al³⁺ substitution on structural, magnetic and dielectric properties of cobalt ferrite synthesized by sol-gel method and its correlation with cationic distribution, *Phys. B Condens. Matter.* 639 (2022) 414017
3. Arpan Das, Tuhin Malik, and Alekha C. Nayak, Dark matter admixed neutron star properties in the light of gravitational wave observations: a two fluid approach, *Phys.Rev.D* 105 (2022) 12, 123034
4. Pravin Kumar Natwariya, Alekha C. Nayak, and Tripurari Srivastava, Constraining Spinning Primordial Black Holes With Global 21 cm Signal, *Mon.Not.Roy.Astron.Soc.* 510 (2021) 4236
5. Influence of an external magnetic field on laser-induced plasma and cavitation bubbles in submerged targets, A Phukan, A Nath, *Journal of Laser Applications* 35 (1), 012011,2023
6. An empirical experimental investigation on the effect of an external electric field on the behavior of laser-induced cavitation bubbles, A Phukan, SM Kharphanbuh, A Nath, *Physical Chemistry Chemical Physics* 25 (3), 2477-2485,2023

7. Comparative study of pulsed laser-induced breakdown at a metal-liquid interface at two liquid temperatures using a beam-deflection probe, A Phukan, PK Baruah, A Khare, A Nath. *Journal of Modern Optics*, 69, 931-940, 2022
8. Magnetic field assisted nucleation dynamics of laser induced manganese oxide nanoparticles in water, SM Kharphanbuh, A Phukan, A Nath, *Journal of Physics D: Applied Physics* 55 (37), 375002, 2022
9. Synthesis of Nanoparticles via Pulsed High-Power Laser in Liquid, A Nath, PK Baruah, A Khare, *Tailored Functional Materials: Springer proceedings in materials*, 521-534, 2022.
10. Device modelling and study of AZO/i-ZnO/ZnS/CZTS-bilayer solar cell for different series and shunt resistances, S. Mazumder, P. Mazumder, and K. Senthikumar, *Solar Energy*, 245 (2022) 46–57
11. Observation of new mesophases and detailed QM analysis of terephthalylidene-bis-[4-n-decylaniline] liquid crystal molecule, D Gupta, P Kalita, A Bhattacharjee, *Journal of Molecular Structure* 1269, 133815, 2022
12. Interactions of a biological macromolecule with thermotropic liquid crystals: Applications of liquid crystals in biosensing platform P Kalita, RK Singh, A Bhattacharjee, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 278, 121347 1 2022
13. Detection of human serum albumin by room temperature nematic liquid crystals based on polarising microscopy, molecular docking and Raman spectroscopy P Kalita, A Bhattacharjee, *Liquid Crystals* 49 (6), 886-898 2022
14. Interactions investigated by the spectroscopic, microscopic and molecular docking studies for liquid crystal-based biosensor P Kalita, RK Singh, A Bhattacharjee, *Liquid Crystals* 49 (3), 297-311 4 2022
15. Thermotropic liquid crystals in the detection of albumins through a microscopic, spectroscopic and computational approach P Kalita, RK Singh, A Bhattacharjee, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 265, 120374 1 2022
16. Enhanced blue-shift of the optical band gap in Cd-doped ZnO nanoparticles A Ghosh, N Kumari, SP Choudhury, S Tewari, A Bhattacharjee, *Materials Today: Proceedings* 68, 215-222

5. Conferences / Workshops / Seminars / Trainings Attended (Faculty):

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Tribedi Bora	30th National Conference on Condensed Matter of Physics "Condensed Matter days (CMDAYS 2022), 1, NIT Nagaland	4th to 16th December 2022

6. Conferences / Workshops / Seminars / Trainings Attended (Students):

Sl. No.	Name of Student	Name of the programme attended	Duration
1	Onus Manner	1. 30th National Conference on Condensed Matter of Physics "Condensed Matter days (CMDAYS 2022), NIT Nagaland	4th to 16th December 2022
		2. National Seminar on Ferroelectrics and Dielectrics (XXII NSFD – 2022), VIT-AP University	17th-19th December 2022
		3. The 2022 Around-the-Clock Around-the-Globe Magnetism Conference (ATCATG), IEEE Magnetism Society	31st August 2022
2	Sanchia Mae Kharphanbuh	30th National Conference on Condensed Matter of Physics "Condensed Matter days (CMDAYS 2022), 1, NIT Nagaland	4th to 16th December 2022

7. Invited Talks Delivered:

- a. By Dr. Tribedi Bora in 30th National Conference on Condensed Matter of Physics "Condensed Matter days (CMDAYS 2022), 14th to 16th December 2022, NIT Nagaland
- b. By Alekha Nayak at PG Department of Physics, Dhenkanal Auto College, Orissa, National seminar on Hunt for dark matter, 15th December, 2022

8. Conferences / Workshops organized:

- Interactive Session for Development of Scientific Research Culture, 26th Oct 2022 organized by Dr. T. Bora
- Hands-On Training on Characterization Tools and Techniques for Materials Sciences, 8th-14th Nov 2022 organized by Dr. T. Bora & Dr. K. Senthilkumar.

9. Projects:

Sl. No.	Title of the Project	Investigators (P.I. / Co P.I)	Funding Agency	Funding amount	Duration	Status
1	Bound on sterile neutrino decay width and mixing angle with active neutrino using global 21-cm absorption signal, SERB- DST, (SRG/2021/002291)	Dr Alekha C. Nayak	DST-SERB	1127522 /-	2 years	Ongoing
2	Photocurrent performance of ion implanted Iron Pyrite (FeS ₂) thin film as hole transport layer for the CZTS based solar cell	Dr. K. Senthilkumar	IUAC	10,50,000/-	3 years	Ongoing
3	Fabrication of 2D Materials for Energy Harvesting Devices	Dr. K. Senthilkumar [Project coordinator]	DST-FIST	Rs. 160 Lacs	5-years	ongoing
4	Transport of a dimer in an inhomogeneous ratchet with spatially varying friction coefficient	Dr. W. L. Reenbohn	DST - SERB	35,03,791	3 years	Ongoing
5	Studies on Orthoconic Antiferroelectric liquid crystals	Prof. A Bhattacharjee	DST - SERB	20,0208/-	3 years	Completed
6	Lab in a Shoebox	Prof. A Bhattacharjee	DIC	110000/-	1 year	Completed
7	A study SnO ₂ nanoflakes doped liquid crystals	Prof. A Bhattacharjee	TEQIP Minor Project	195000/-	2 years	Completed
8.	Fluid Dynamical Aspects in nucleation of laser produced nanoparticles in liquids	Dr. Arpita Nath	DST-SERB-ECR	Rs 5166893/-	3 year	Completed
9.	Exploring High Density Magnetic Medium in Nanocrystalline Spinel Ferrites for Magnetic Recording System	Dr. Tribedi Bora	DST-SERB		3 years	Completed
10.	Surface Waves from Electric Spark Generated Bubbles	Dr. Arpita Nath	TEQIP Minor Project	190000/-	2 years	Completed
11.	Defect induced electron-phonon interaction in ZnO nanoparticles	Dr. K. Senthilkumar	UGC-DAE Consortium for Scientific Research	175000/-	3 years	Completed

10. Student Awards Won/ Recognition received at the national and international level:

Ms Sanchia Mae Kharphanbuh received best poster presentation award in 30th National Conference on Condensed Matter of Physics Condensed Matter days (CMDAYS 2022), NIT Nagaland held on 4th to 16th December 2022.

11. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Alekha Nayak	Warden Umpling Boys Hostel	2 years
2	Dr. Tribedi Bora	Convener, Internal Complaints Committee	01-07-2022 to 30-06-2024
3	Dr. K. Senthilkumar	HoD Physics	since 1st July 2022
4	Prof. A Bhattacharjee	Dean Faculty Welfare	since 1st July 2020

12. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Member of
1	Dr. Tribedi Bora	Magnetic Society of India-Life Member Physics Academy of the North East-Life Member
2	Dr. K. Senthilkumar	Energy Science Society of India (ESSI) 0309201301L
3	Dr. Arpita Nath	Plasma Science and Society of India (PSSI) Indian Society of Atomic and Molecular Physics (ISAMP)
4	Dr Ayon Bhattacharjee	IEEE Indian Liquid Crystal Society International Liquid Crystal Society

13. Any Other Notable Information (including Journal Reviewer):

Sl. No.	Name of Faculty	Notable Information
1	Dr. Tribedi Bora	As a reviewer: 1. Material Letters, and 2. Materials Today: Proceedings Organized
2	Dr. Alekha C. Nayak	Reviewer 1) <i>Proceedings of the Royal Society A</i> 2) <i>International Journal of Modern Physics A</i>
3	Dr. Arpita Nath	Reviewer: 1. Advanced Materials 2. Applied Surface Science 3. Data in Brief 4. High power laser science and engineering 5. Journal of manufacturing process 6. Ocean Engineering
4	Dr. K. Senthilkumar	Reviewer: Journal of Raman Spectroscopy, Solid State Solidi (A) Editorial board member: <i>American Journal of Modern Energy</i>



Fig: Air Shower



Fig: Wet Chemical Bench



Fig: Sputtering



Fig: Raman Instrument

Computer Centre

The Computer Centre at NIT Meghalaya is a vital part of the institute. It provides support to all departments and sections, and it offers technical services to all users. The Computer Centre's internet facilities, such as Google Meet and Microsoft Teams, have made it possible for the institute to continue its academic activities, including interviews, online tests, and online admissions. The Computer Centre also provides VPN connections for research scholars to work remotely from home.

A workshop was held for postgraduate students and research scholars at the National Institute of Technology Meghalaya to teach them about parallel computing. The workshop was conducted using the High Performance Computing resources that had been installed at NIT Meghalaya. The workshop covered the basics of parallel computing, as well as how to use MATLAB for parallel computing. The workshop was a success, and the participants learned a lot about parallel computing and MATLAB. Also, a 1(One) Day workshop on Microsoft Office Tools has been organized by the Microsoft team and the Computer Centre to all the staff/faculties and students of NIT Meghalaya.

A new Smart Data Centre using the state of the art technologies for monitoring and secured network infrastructure has been inaugurated at NIT Meghalaya Permanent campus which will be able to host all the institute servers. The data center is designed by efficiently integrating power and distribution systems, thermal management, security, IT management, and other critical components.

Progress has been made in the ICT infrastructure at Sohra, including the completion of tasks such as laying fiber cables along the boundary wall and establishing building-to-building connectivity with rack installation.

Network and Connectivity: The Centre manages the campus network and provides intra-campus connectivity through high-speed fibre links to all hostels over Shillong city. The total bandwidth capacity of 1Gbps has been maintained by NKN (National Knowledge Network) through the underlying network of BSNL and a redundant link of 100 Mbps through Powergrid.



Image: New Data Centre at Sohra Campus

Facility Management: It manages central computing facilities including the campus network, central host servers, computing facilities like computers in the centre. It also carries out assessment of facilities, both software and hardware, based on the needs of its users, and makes recommendations for new facilities as necessary for the enhancement of the existing facilities.

Administrative Data Processing Systems: It provides infrastructure and technical support for the maintenance of all electronic data processing systems used in administrative offices and departments. Some of the Office Management tools which has enhance collaboration and automate the workload are provided by the centre are:

Microsoft Office 365: Microsoft Office 365 is a suite of

productivity apps that includes Word, Excel, PowerPoint, Outlook, and OneNote.

Google Workspace: Google Workspace is a suite of productivity apps that includes Gmail, Docs, Sheets, Slides, and Calendar.

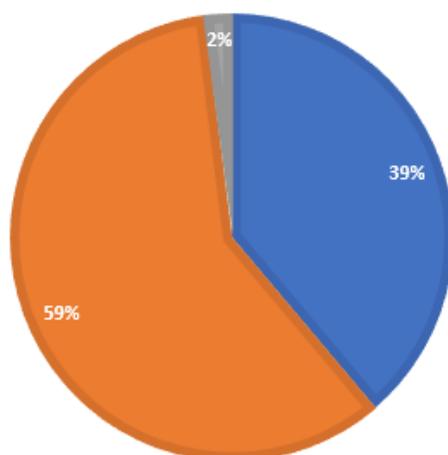
Time tracking software: Time tracking software helps to track student time and attendance.

Learning, Teaching and Research: Many educational packages and computer-aided learning software are used to enhance the learning capabilities of the students through online mode and delivering lectures and conducting interviews.

The pie chart below represents the Computer Centre manpower resource utilization for the year 2022-23.

CC RESOURCE PERSON UTILIZATION YEAR 2022-2023

■ Office/Staff/Faculty call request ■ Website related Work ■ CC Technical work



Staffs

1	Medarisha H. Thangkhiew	Technical Assistant
2	Bandonlang Wahlang	Technical Assistant
3	Arkinsan Wankhar	Technical Assistant
4	Michael Wattle Sangma	Technical Assistant
5	Marveen Rangslang	Technician
6	Ts Thotdharrin Damian	Technician
7	Pynshngainlang Tariang	Laboratory Attendant

Central Instruments Facility (CIF)

1. Brief Introduction to the CIF:

The quality and high-end research is greatly hindered due to insufficient facilities presently available at the institute for conducting experimental and characterization works for different departments. Our faculties and students are taking help from the facilities at IITs and CSIR laboratories located in far off distance. Many times, it is not possible due to multifarious unavoidable reasons. Keeping these issues in mind, the institute has established a Central Instruments Facility (CIF) within the

workshop building in the permanent campus with necessary high-end research tools and equipments (e.g. Powder X-Ray Diffractometer, Fatigue Fracture Testing Machine, Field Emission Scanning Electron Microscopy [FESEM], Metallic 3D printer etc) for carrying out quality research and consultancy work in the premises of the institute itself at the Permanent Campus at Sohra. Considering the increasing numbers of the faculty members, research scholars and the students who are aggressively engaged in their research works, the CIF has been built up in 2021 and the same was inaugurated on April 01, 2022 by the Director of the Institute.

2. Faculty Profiles (CIF Core Team Members and Instrument-in-Charge):

Name	Designation/ Responsibilities	Qualification	Specialization
Dr. Atanu Singha Roy (Dept. of Chemistry)	Assistant Professor (CIF Chairman)	Ph.D.	Biophysical Chemistry
Dr. Bikash Kumar Sarkar (Dept. of Mechanical Engineering)	Assistant Professor, Faculty-in-Charge of Metal 3D printer, PIC Center of Robotics and Mechatronics (CIF Core Team Member)	Ph.D.	Hydraulic system and control, Mechatronics and Robotics
Dr. Dibyendu Adak (Dept. of Civil Engineering)	Assistant Professor, Faculty-in-Charge of FESEM instrument (CIF Core Team Member)	Ph.D.	Structural Engineering
Dr. Shubhankar Majumdar (Dept. of Electrical and Communication Engineering)	Assistant Professor, Faculty-in-Charge of Electrochemical Workstation (CIF Core Team Member)	Ph.D.	RF, High Speed and Power, Semiconductor Devices, VLSI circuit design and Modeling, Low cost Energy efficient system for Agriculture & Health Sector
Dr. K. Senthilkumar (Dept. of Physics)	Assistant Professor (CIF Core Team Member)	Ph.D.	DFT, Semiconductor Defects, Heterojunction Solar Cell.
Dr. Adarsha Jena (Dept. of Mathematics)	Assistant Professor (CIF Core Team Member)	Ph.D.	Statistics
Dr. Ksh Milan Singh (Dept. of Electrical Engineering)	Assistant Professor (CIF Core Team Member)	Ph.D.	Digital Signal Processing, Ultrasonic Vibration Measurement
Dr. Akhileendra Pratap Singh (Dept. of Computer Science and Engineering)	Assistant Professor (CIF Core Team Member)	Ph.D.	Service Oriented Network, Architecture, Computer Network, Wireless Sensor, Network
Dr. Gitish K. Dutta (Dept. of Chemistry)	Associate Professor (Dean RC), Faculty-in-Charge of PXRD instrument	Ph.D.	Organic and Hybrid Materials
Dr. Tanmoy Bose (Dept. of Mechanical Engineering)	Assistant Professor Faculty-in-Charge of FFTM instrument	Ph.D.	Machine Design
Dr. Biplab Debnath (Dept. of Mechanical Engineering)	Assistant Professor Faculty-in-Charge of Gas Chromatography (GC)	Ph.D.	Thermal Engineering, Alternative Fuels, Diesel Engine
Dr. Susmita Sharma (Dept. of Civil Engineering)	Assistant Professor Faculty-in-Charge of Atomic Absorption Spectroscopy (AAS)	Ph.D.	Geomaterials Characterization, Soil-contaminant interaction, Biogeotechnology, Ground Improvement Technique, Water pollution and treatment, Valorization of Waste

3. Technical Assistant:

Name	Designation/ Responsibilities	Qualification	Date of Joining
Mr. Souradeep Bhowmick (Dept. of Mechanical Engineering)	Technical Assistant	B.E. in Mechanical Engineering	14-12-2021
Mr. Balateiskhem Syiemlieh (Dept. of Chemistry)	Technical Assistant	M.Sc. Chemistry	27-12-2021

4. Laboratory Set Up Completed:

Sl. No.	Major Instrument(s)	Location	Instrument Cost (INR)	AMC Value after warranty (INR)	Remarks
1	Powder X-Ray Diffraction (PXRD) Make: MIS Rigaku Corporation, Japan Model: Rigaku SmartLab	Central Instruments Facility (CIF), Room 1	1,64,85,000/-	5,25,000/-	Installed/Working
2	Field Emission Scanning Electron Microscope (FESEM) with EDS Model: Gemini SEM 360 Make: CARL ZEISS	Central Instruments Facility (CIF), Room 1	3,91,41,178/-	22,59,075/-	Installed
3	Metallic 3D Printer Make: Desktop Metal Inc. Model: Studio 2.0	Central Instruments Facility (CIF), Room 2	2,97,92,439/-	63,00,000/-	Installed/Working
4	Multichannel Electrochemical Workstation Make: Orignalys Electrochem and Orignalys France Model: OGF05A; OGF01A; OGF01S Electrochemical workstation	Central Instruments Facility (CIF), Room 2	25,93,500/-	1,26,000/-	Installed/Working
5	Fatigue Fracture Testing Machine (FFTM) Make: MTS Systems Corporation, USA and Model: Landmark 370.10	Central Instruments Facility (CIF), Room 3	2,95,99,500/-	34,49,250/	Installed/Working
6	Gas Chromatography Make: Thermo Fisher Scientific Model: Trace 1610	Central Instruments Facility (CIF), Room 2	37,04,234/-*	*Included	Installed/Working
7	Atomic Absorption Spectroscopy (AAS) Make: Thermo Fisher Scientific Model: iCE 3300 AA Spectrometer (wide PMT)	Central Instruments Facility (CIF), Room 1	Euro 22,525/- (2016 from CE Dept.)	--	Shifting from Bijni complex (CE) to CIF Lab. and installation started in a phase wise manner

5. Future Plan:

The Committee is planning to install the following instruments very soon in the CIF Laboratories:

1. Atomic Absorption Spectroscopy (AAS) [Existing facility of the institute, the same will be shifted to the CIF laboratory in the month of May 2023]
2. Rheometer
3. BET Surface Analyzer
4. TGA-DSC-STA
5. Transmission Electron Microscope (TEM)
6. Particle Size Analyzer and DLS

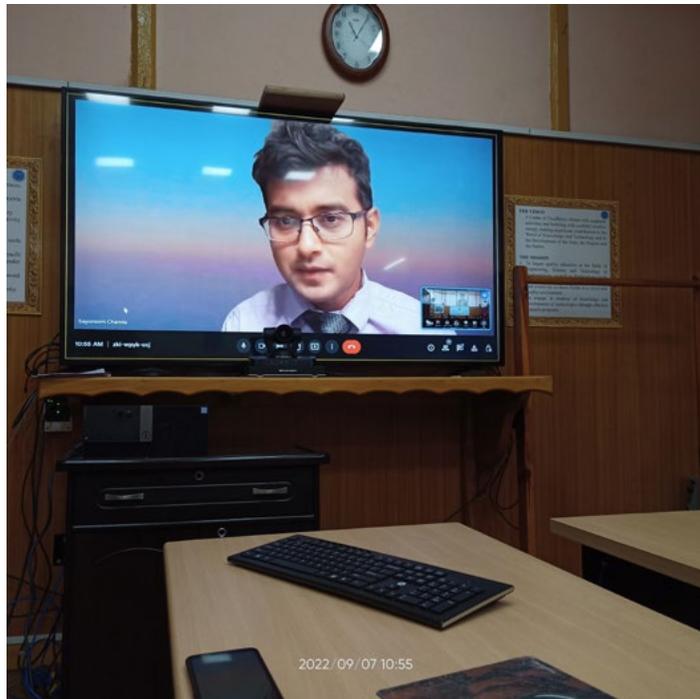
Centre for Innovation Incubation and Entrepreneurship

Core Committee Members:

- | | | |
|---------------------------|---|----------|
| 1. Prof. Gayadhar Panda | - | Chairman |
| 2. Dr. Smrutirekha Sahoo | - | Member |
| 3. Dr. Bunil Balabantaray | - | Member |
| 4. Dr. Naba Kamal Nath | - | Member |
| 5. Dr. Ksh. Milan Singh | - | Member |

Expert talk events organized by CIIE, NIT Meghalaya during 2022 to 2023:

1. Expert Talk for Dr. Sayansom Chanda, CEO Plexflo, "How to Start a Start-up" on 7th September 2022



- Expert Talk for Dr. Rajiv Kangabam, Manager-BRTC, KIIT-TBI on “Biotechnology Ignition Grant- North East (BIG-NE)” on 21st September 2022

Special Call
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Biotechnology
Ignition
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Focused on **NORTH EAST REGION**
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Incubation Centres across NER

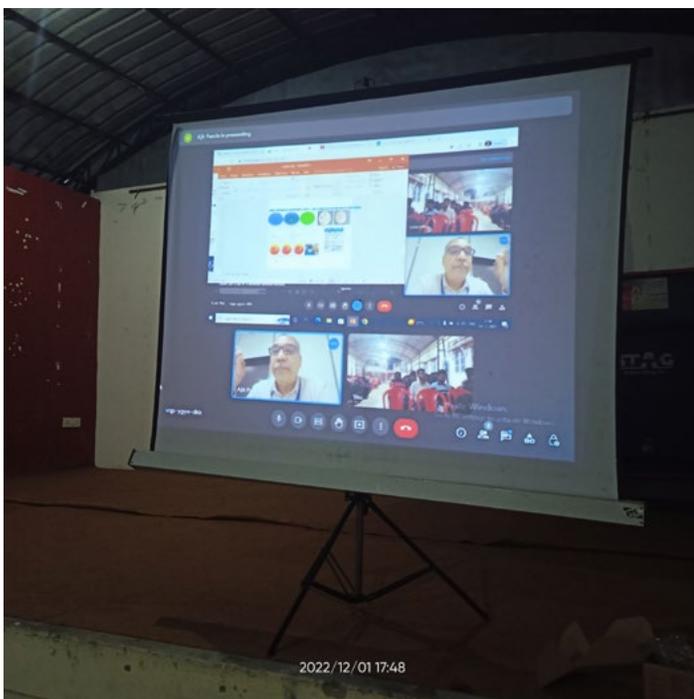
APPLICATION WINDOW 15th Aug to 31st Oct, 2022 (5:30 PM)

APPLY ONLINE:
www.birac.nic.in

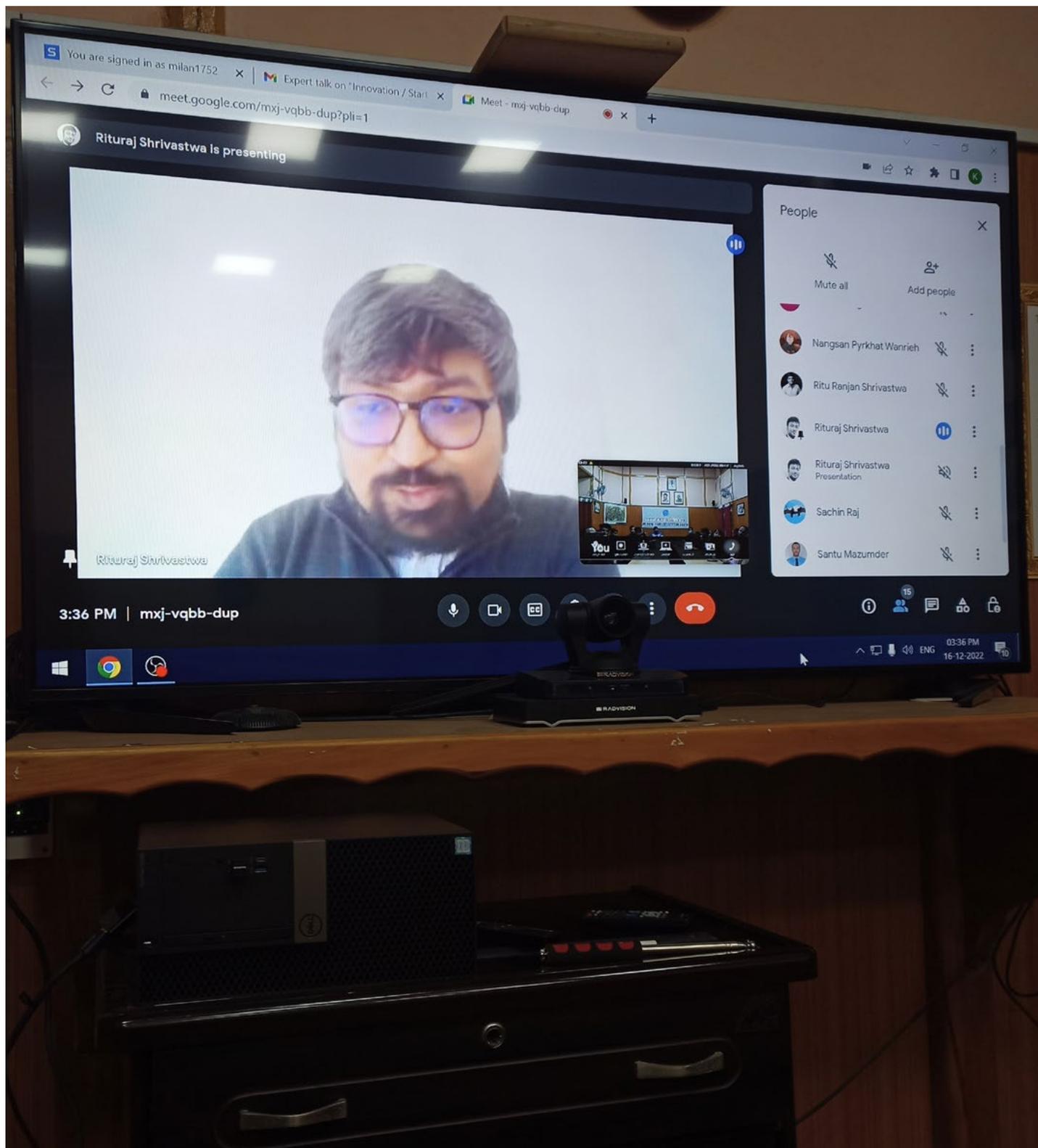
For queries, write to us:
bigner@kitiincubator.in | biracbig.dbt@nic.in



- Expert Lecture for Professor Ajit Panda, Senior Director at VDN Technologies on “Training, Research, Incubation leads to Industry, and Entrepreneurship” during Induction Program-2022 under CIIE, NIT Meghalaya on 1st December 2022.



4. Expert Lecture for Dr. Ritu Raj, Directeur Technique on "Startup and Entrepreneurship" under CIIE, NIT Meghalaya on 16th December 2022.



Centre for International Relations

1. Brief Introduction to the Center:

The Center for International Relations at NIT Meghalaya was established in 2017. The center is a comprehensive unit committed to developing, promoting and implementing international education initiatives for our students, faculty members and staffs. The center also takes care of admission of international students through various agencies like ICCR, Study-in-India, DASA etc. There are 29 international students currently studying undergraduate and postgraduate program(s) in various

departments of NIT Meghalaya, and 4 international students graduated from NIT Meghalaya.

2. Courses Offered:

Two Short Term Bridge courses under SII - UKIERI programme:

- Finishing college training program for engineers (6 weeks)
- Industrial Robotics & Mechatronics (4 weeks)

3. Faculty Profile:

Name	Designation	Qualification	Specialization
Dr. Manideepa Saha	Faculty-in-Charge	Ph.D	Mathematics

4. List of achievements and activities during the Year 2021-22:

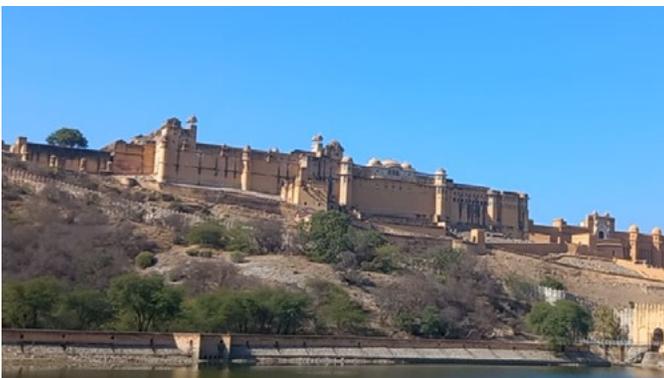
- 10 international students got admission at NIT Meghalaya in various program at NIT Meghalaya, among which six got through Study in India whereas five got through ICCR, during AY 2022-23.
- 4 international students graduated in 2022, among which 3 are completed BTECH program, and 1 completed MTECH program.
- **City & Heritage Walk** was conducted for international students studying under Study in India (SII) Program at NIT Meghalaya. The program was organized under the Study in India (EdCIL & MoE) program to facilitate acclimatizing international students to India's culture and heritage. The tour was conducted during January 21-30, 2023. Sixteen international students accompanied by two faculty members, namely Dr. Amit Kumar Paul & Dr. Akhilendra Pratap Singh and one staff, namely Mr. Anderson Rapsang, joined the tour and visited the various places of Delhi, Agra and Jaipur. A few photographs of the tour are attached below..



City & Heritage Walk: Delhi and Mathura visit by International Students under SII Program



City & Heritage Walk: Delhi and Mathura visit by International Students under SII Program



City & Heritage Walk: Agra and Jaipur visit by International Students under SII Program

Center for Robotics and Mechatronics

1. Brief Introduction to the Center:

The center started in the year of 2017, with faculty members from various departments like, Mechanical Engineering, Electrical Engineering, Electronics and Communication Engineering and Computer Science Engineering. The Center was officially

inaugurated by Chairman, BoG, Shri Sajjan Bhajanka, Chairman, Century Plyboards (India) Ltd on 1st April 2019.

2. Program Offered:

The Center for Robotics and Mechatronics offered finishing school programs for UK graduate students under the UKIERI program.

3. Faculty Profile:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remarks
Dr. Rabindra Narayan Mahapatra	Associate Professor,	PhD	Design and manufacturing	28-12-2017	02	Nil
Dr. Bikash Kumar Sarkar	Assistant Professor and PIC	PhD	Fluid Power and Control, Robotics	21-08-2013	09	Completed 3, Submitted 1, Ongoing 5
Dr. Kishore Debnath	Assistant Professor, ME	PhD	Manufacturing	16-07-2015	03	3 Sponsored projects
Dr. Satyendra Singh Yadav	Assistant Professor, EC	PhD	Wireless Communications, Signal Processing for 5G Systems and Beyond, Machine Learning, Parallel (GPU) Computing	10-2019	Nil	Nil
Dr. Shubhankar Majumdar	Assistant Professor, EC	PhD	Microelectronics Device fabrication, Sensor	13-12-2017	02	3 Sponsored projects 5 State Government Projects 2 Ongoing PhD
Dr. Bunil Kumar Balabantaray	Assistant Professor, CSE	PhD	Robotics, Computer Vision and Digital Heritage, AI/ML	14-12-2017	05	Full Time - 4 and 4 Part time Ph. D. scholars
Dr. Rakesh Roy	Assistant Professor, EE	PhD	Power System Control, Smart Grid, Optimization, Cyber-Security	19 June 2012	03	1. Sponsored Research projects: 2 2. Sponsored consultancy: 1

4. List of Publications:

a. Journals:

- Champatiray, C., Samal, S., Bahubalendruni, M. V. A. R., Mahapatra, R. N., Mishra, D., & Balabantaray, B. K. (2022). Modified cat swarm optimization for Optimal Assembly Sequence Planning Problems. *International Journal of Performability Engineering*, 18(4), 289-297.
- Sahu, M. P. K., Mahapatra, R. N., & Mishra, U. S. (2022). Impact of Sustainable Supply Chain Management Practices on Organization's Operational Performance: An Empirical Study on Indian Steel Sector. *Journal of Optoelectronics Laser*, 41(4), 728-732.
- Choudhury, M. R., Rao, G. S., Debnath, K., & Mahapatra,

- R. N. (2022). Analysis of force, temperature, and surface roughness during end milling of green composites. *Journal of Natural Fibers*, 19(13), 5019-5033.
4. Gorrepotu, S. R., Debnath, K., & Mahapatra, R. N. (2023). Multi-response Optimization of the Chemical Treatment Process Parameters Influencing the Tensile, Flexural, Compression, and Shear Properties of the Injection Moulded Green Composites. *Journal of Polymers and the Environment*, 31(1), 112-130.
 5. Champatiray, C., Bahubalendruni, M. R., Mahapatra, R. N., & Mishra, D. (2023). Optimal robotic assembly sequence planning with tool integrated assembly interference matrix. *AI EDAM*, 37, e4.
 6. Vinod, J., Sarkar, B. K., & Sanyal, D. (2022). Flow control in a small Francis turbine by system identification and fuzzy adaptation of PID and deadband controllers. *Renewable Energy*, 201, 87-99.
 7. Venkaiah P, Sarkar BK, Chaterjee A. Pitch control of electrohydraulic semi-rotary-actuated wind turbine with actuator and valve fault using generalized power-based exponential rate reaching law sliding mode controller. Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering. 2023;0(0). doi:10.1177/09596518231154632
 8. Kumar N, Venkaiah P, Sarkar BK, Maity S. Wind turbine electrohydraulic transmission system control for maximum power tracking with pump fault. Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering. 2023;0(0). DOI:10.1177/09596518231155691
 9. Hrishikesh Dutta & Kishore Debnath & Deba Kumar Sarma, 2022. "Preliminary Investigation Of Powder-Mixed Microelectrical Discharge Drilling Of Cfrp Composite," Surface Review and Letters (SRL), World Scientific Publishing Co. Pte. Ltd., vol. 29(08), pages 1-11, August. DOI: 10.1142/S0218625X22501116
 10. Das, A., Gautam, A., Panda, A., Das, S. R., Debnath, K., Ramakrishna, C., & Patel, S. K. (2022). Comparative performance evaluation between uncoated and TiAlN+ AlCrN coated carbide tools in hard turning of AISI H11 steel. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 09544089221110430.
 11. Davis, R., Singh, A., Debnath, K., Sabino, R. M., Popat, K., Soares, P., ... & Borgohain, B. (2022). Enhanced micro-electric discharge machining-induced surface modification on biomedical Ti-6Al-4V alloy. *Journal of Manufacturing Science and Engineering*, 144(7).
 12. Yadav, S. K., Singh, A., & Debnath, K. (2022). Investigation of machining characteristics during micro-hole fabrication in CFRP composite by ECDM process. *Engineering Research Express*, 4(3), 035055.
 13. Rao, G. S., Paul, R., Singh, S., & Debnath, K. (2022). Influence of Conventionally Drilled and Additively Fabricated Hole on Tensile Properties of 3D-Printed ONYX/CGF Composites. *Journal of Materials Engineering and Performance*, 1-13.
 14. Choudhury, M. R., Rao, G. S., Debnath, K., & Mahapatra, R. N. (2022). Analysis of force, temperature, and surface roughness during end milling of green composites. *Journal of Natural Fibers*, 19(13), 5019-5033.
 15. Dutta, H., Debnath, K., & Sarma, D. K. (2022). Experimental Investigation of Parametric Effects and Characterization of the Machined Surface in μ ED-milling of CFRP Composite. *Arabian Journal for Science and Engineering*, 47(12), 16341-16353.
 16. Gorrepotu, S. R., Debnath, K., Mahapatra, R. N., & Srivatsan, T. S. (2022). A critical review on mechanical and morphological characteristics of injection molded biodegradable composites. *Polymer Composites*, 43(12), 8634-8672.
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 19. Davis, R., Singh, A., Debnath, K., Soares, P., Och, S. H., Keshri, A. K., & Terry, H. A. (2023). Enhanced abrasive-mixed- μ -EDM performance towards improved surface characteristics of biodegradable Mg AZ31B alloy. *The International Journal of Advanced Manufacturing Technology*, 124(7-8), 2685-2700.
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- Information System Modeling and Design (IJISMD), 13(6), 1-21.
22. Gangwar, S., Prasad, I. B., Yadav, S. S., Pal, V., & Kumar Patra, S. (2022). HSCR: Hierarchical structured cluster routing protocol for load balanced wireless sensor networks. *Software: Practice and Experience*.
 23. Bandari, S. K., Yadav, S. S., & Mani, V. V. (2022). Analysis of GFDM in generalized α - μ fading channel: A simple probability density function approach for beyond 5G wireless applications. *AEU-International Journal of Electronics and Communications*, 153, 154260.
 24. Gnaneshwar, C., Singh, M. K., Yadav, S. S., & Balabantaray, B. K. (2022). Analysis of image forgery detection using convolutional neural network. *International Journal of Applied Systemic Studies*, 9(3), 240-260.
 25. Sarkar, D., Yadav, S. S., Pal, V., & Kumar, N. (2023). Intelligent Reflecting Surface Aided NOMA-HARQ Based IoT Framework for Future Wireless Networks. *IEEE Transactions on Vehicular Technology*.
 26. S. Gangwar, Yogita, I. B. Prasad, S. S. Yadav, V. Pal and N. Kumar, "GTFR: A Game Theory Based Fuzzy Routing Protocol for WSNs," in *IEEE Sensors Journal*, doi: 10.1109/JSEN.2023.3248226.
 27. Kattekola, N., & Majumdar, S. (2022). A novel design of N-bit approximate comparator for image processing applications. *Circuit World*, (ahead-of-print).
 28. G. Bhargava, S. Majumdar, G. Gugliandolo, G. Campobello, N. Donato and G. Crupi, "Design and Validation of a Low-Cost Antenna-Based Solution for Microwave Imaging of RCC Structure," in *IEEE Sensors Letters*, vol. 7, no. 4, pp. 1-4, April 2023, Art no. 3500604, doi: 10.1109/LSENS.2023.3260972.
 29. Bhargava, G., & Majumdar, S. (2023). Pre Distortion: An Effective Solution for Power Amplifier Linearization. *RF Circuits For 5G Applications: Designing with mmWave Circuitry*, 223-239.
 30. Identification of discriminant Features from Stationary Pattern of Nucleotide Bases and their Application to Essential Gene Classification, Ranjeet Kumar rout, Saiyed Umer, Monika Khandelwal, Smitarani Pati, Saurav Malik, Bunil Kumar Balabantaray, Hong Qin. *Frontiers in Genetics* 14,2023,630
 31. Obscene image detection using transfer learning and feature fusion Sonali Samal, Rajashree Nayak, Swastik Jena, Bunil Ku Balabantaray *Multimedia Tools and Applications* 2023 1-29
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 33. LPNet: A lightweight CNN with discrete wavelet pooling strategies for colon polyps classification Pallabi Sharma, Dipankar Das, Anmol Gautam, Bunil Kumar Balabantaray *International Journal of Imaging Systems and Technology* 33,2022 495-510
 34. Li-SegPNet: Encoder-decoder Mode Lightweight Segmentation Network for Colorectal Polyps Analysis Pallabi Sharma, Anmol Gautam, Pallab Maji, Ram Bilas Pachori, Bunil Kumar Balabantaray. *IEEE Transactions on Biomedical Engineering* 70,2023 1330 - 1339
 35. GM Harshvardhan, Aanchal Sahu, Mahendra Kumar Gourisaria, Pradeep Kumar Singh, Wei-Chiang Hong, Vijander Singh, Bunil Kumar Balabantaray, On the dynamics and feasibility of transferred inference for diagnosis of invasive ductal carcinoma: A perspective *IEEE Acces* 10 ,2022 30870 - 30889
 36. Manish Kumar Singh, Satyendra Singh Yadav, Bunil Kumar Balabantaray, Analysis of Image Forgery Detection using Convolutional Neural Network Chiluveru naneswar, *International Journal of Applied Systemic Studies* 09, 2022 240 - 260
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- b. Conferences:**
1. Gorrepotu, S. R., Debnath, K., Mahapatra, R. N., & Srivatsan, T. S. (2022). A critical review on mechanical and morphological characteristics of injection molded biodegradable composites. *Polymer Composites*, 43(12), 8634-8672.
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 4. Ashish B Khelkar, K. Syrti, Rajat Subhra Das, Bikash Kumar Sarkar. (2022). Augmenting the Thermal Performance of Solar Air Heater with Absorber Plate Roughened with Pin-Fins. *2022 7th International Conference on Mechanical Engineering and Robotics Research (ICMERR)*

5. B. B. Ghosh, B. K. Sarkar and R. Saha, "Positional Error Estimation of the Parallel Manipulator for Control Application," 2022 7th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland, 2022, pp. 137-143, doi: 10.1109/ICMERR56497.2022.10097725.
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7. Rao, G. S., Debnath, K., & Mahapatra, R. N. (2022). FEA-Based Prediction of Tensile and Flexural Properties of Green Composites Under Different Fiber Loading. In *Advances in Simulation, Product Design and Development: Proceedings of AIMTDR 2021* (pp. 217-230). Singapore: Springer Nature Singapore.
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9. K. Debnath, S. R. Gorrepotu and N. R. Posinasetti, "Life Cycle Assessment (LCA) of Flax-Based Green Composite Product Fabricated by Injection Moulding Process," 2022 7th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland, 2022, pp. 168-174, doi: 10.1109/ICMERR56497.2022.10097823.
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16. G. Bhargava, P. K. Rath and S. Majumdar, "GaN-based Class-F Power Amplifier for 5G Applications," 2022 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON), Bangalore, India, 2022, pp. 1444-1449, doi: 10.1109/MAPCON56011.2022.10047615.
17. E. Sankararao, R. Gandhi, A. Chakraborti and R. Roy, "Comparative Analysis of Model Predictive and Hysteresis Current Control for PMSM drive Application," 2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Jaipur, India, 2022, pp. 1-6, doi: 10.1109/PEDES56012.2022.10080791.
18. A Deep Learning based Approach to Stock Market Price Prediction using technical indicators Nirupama Parida, Bunil Kumar Balabantaray, Rajashree Nayak, Jitendra Kumar Rout 2023 International Conference on Advances in Intelligent Computing and Applications (AICAPS) 1st to 3rd FEBRUARY 2023
19. Batch Image Encryption and Compression using Chaotic Map Infused Autoencoder Network S.Das, A.Gautam, S.Thokchom, B.K. Balabantaray 2022 IEEE 9th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON) Dec 2022
20. AVENet: Attention based VGG16 with ELM for obscene image classification S. Samal, S. Pandit, B.K. Balabantaray, A.K. Sahani, R. Nayak 3rd International Conference on Frontiers in Computing and Systems (COMSYS-2022) 19th - 21st December 2022
21. ED-NET: Educational Teaching Video Classification Network A. Gautam, S. Hazra, R.Verma, P. Maji, B.K. Balabantaray International Conference on Computer Vision and Machine Intelligence, IIIT Allahabad, Prayagraj, INDIA 12-13 August 2022
22. IFChatbot: Convolutional Neural Network based chatbot for Image Forgery Detection and Localization N. Manna, S. Kumar, R. Kakar, S. Nayak, J. K Rout, and B.K. Balabantaray 2022 IEEE India Council International Subsections Conference (INDISCON) July 15-17, 2022

23. SAU-NET: Scale Aware Polyp Segmentation using Encoder-Decoder Network A. Gautam, S. Das, P. Sharma, P. Maji and B. K. Balabantaray 2022 IEEE Region 10 Symposium (TENSYP) 1ST - 3RD JULY 2022
24. Melanoma Detection using Advanced Deep Neural Network P. Sharma, A. Gautam, R. Nayak, B.K. Balabantaray 2022 4th International Conference on Energy, Power and Environment (ICEPE) 29 April - 1 May 2022

5. Patents:

1. A SYSTEM AND METHOD FOR PROCESSING A QUANTUM INFORMATION WITH MSTVTD IN A QUANTUM COMMUNICATION 202231007098 D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj Filed 10 Feb 2022
2. A SYSTEM AND METHOD FORQUANTUM COMMUNICATION BY OBJECT TELEPORTATION IN VARIANTS SPACE TIME DOMAIN 202231052979 D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj Filed 16 Sep 2022
3. An Integrated Cloud-based Terrestrial Navigation System and Method thereof :Filed and Published in Journal of Intellectual Property India (Journal No46/2022), Department of Industrial Policy & Promotions, Government of India 202231065525A J.R.K Kumar Dabbakuti, Dr. Rangababu Peesapati, Dr. Bunil Kumar Balabantaray and Dr. Kiran Kumar Anumandla J.R.K Kumar Dabbakuti, Dr. Rangababu Peesapati, Dr. Bunil Kumar Balabantaray and Dr. Kiran Kumar Anumandla Filed 18 Nov2022.

6. Conference/ Workshop/ Seminar/ Lecture Organized:

- a. 20-03-2023 - 25-03-2023, Robotic process automation sponsored by CDAC Kolkata.
- b. Harvesting Wind Energy Potential in Different Sites Integrated with Wind Turbine Selection through Stastical Simulation. By Prof. A. Sarkar, IIT BHU. On 20/02/2023.



7. Conferences / Workshops / Seminars / Trainings Attended by faculty members:

Sl. No.	Name of Faculty	Name of the program attended	Duration
1	Dr. Bunil Kumar Balabantaray	Robotic process automation	20-03-2023 - 25-03-2023
2	Dr. Bunil Kumar Balabantaray	Cultural heritage preservation using machine learning	13 Jun 2022- 26 Jun 2022
3	Dr. Bunil Kumar Balabantaray	ATAL FDP on IoT Applications with Blockchain Techniques	17 Jul 2021-21 Jul 2021

8. Projects:

a. Sponsored Projects:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount (INR)	Duration	Status
1	Deep Learning Approach for Preservation of Cultural Heritage	Dr. Bunil Kumar Balabantaray	SERB, Department of Science and Technology (DST), Government of India	2391340	3 years	ongoing
2	Prediction, Detection and monitoring System for Landslide in Hilly Region	Dr. Shubhankar Majumdar	Department of Science & Technology (International Bilateral Cooperation Division)	626000 +\$50000 (Japanese side)	2 Years	On-going
3	Tensiometer based automated IoT system for irrigation	Dr. Shubhankar Majumdar	DST-DDP	16,84,941.00	2 Years	On-going
4	Cloud-assisted Data Analytics based Real-Time Monitoring and Detection of Water Leakage in Transmission Pipelines using Wireless Sensor Network for Hilly Regions	Dr. Shubhankar Majumdar	MoEF&CC under (NMHS)	44,70,880	3 Years	On-going

b. Consultancy:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount (INR)	Duration	Status
1	An artificial intelligence approach to solve waste management challenges	Dr. Bunil Kumar Balabantaray	Ficha, France	5000000	3 years	Ongoing. The project funding is dynamic i.e., it depends on the number of AI engineers working. 2022-2025
2	Enhancement of Dermo Choice Application- UI Refinement, Computation API and Privacy Policy	Dr. Bunil Kumar Balabantaray	CHOWIS, SOUTH KOREA	205200	3 Months	Ongoing

9. Laboratories Setup:

Sl. No.	Laboratory	Major Equipment & Software	Location	Cost (Rupees in lakhs)
1	Centre for Robotics & Mechatronics	Intel Real Sense Depth Camera Model: 82635D4351DK5P Make: INTEL	Centre for Robotics & Mechatronics	30,240.00

10. Administrative Responsibilities Held:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. B. K. Sarkar	1. Centre-In-Charge, Centre for Robotics & Mechatronics 2. NBA coordinator, ME Department 3. Convener, Routine committee 4. Convener, Ranking and accreditation committee 5. Member, CSAB 6. Ph D coordinator, ME Department	On-going
2	Dr. R. N. Mahapatra	Registrar in charge	On-going
3	Dr. K. Debnath	Head of the Department, ME	July 2022 - till date
4	Dr. Shubhankar Majumdar	1. NBA Departmental Committee. 2. Warden of Lapalang Boy's Hostel-1. 3. Faculty Advisor of B. Tech. EC-2018 batch 4. Faculty Incharge of Coding Club 5. Convener of Innovation & Entrepreneurship Club	On-going
5	Dr. Bunil Kumar Balabantaray	1. Institute Internship 2. Warden, KT Hostel 3. Convener, Volunteer Sub-Committee, Convocation 2019 4. Member, Technical Committee, SAC 5. Convener, NBA Preparation Committee 6. Member, CCMT-2019 and CCMT-2020 7. Member, Outcome Based Education, Steering Committee 8. Member, Institute Start-up Committee under TEQIP-III	1. July 2018 to till continuing. 2. Dated: 06.08.2019 3. From 23.09.2019 till continuing 4. From 23.01.2018 to till continuing 5. From April 2019 to till continuing 6. From 04.12.2018 to till continuing 7. From 08.09.2018 to till continuing 8. From 08.09.2018 to till continuing

11. Membership of Professional Bodies:

Sl. No.	Name of Faculty	Member of
1	Dr. Bikash Kumar Sarkar	1. ASME Member 100784361, 2016 2. IEEE, IEEE Control Systems Society Member 92662020, 2016 3. NSFMP Life Member, LM631 4. ISHMT Life Member, 1064
2	Dr. R. N. Mahapatra	1. ISTE, Life member 2. ACSIT, Member
3	Dr. Shubhankar Majumdar	1. Institute of Electrical and Electronics Engineers (IEEE) - 927753442. 2. Electrochemical Society (ECS) - 406059 3. Union Radio-Scientifique Internationale (URSI) - M1838573204 4. International Association of Engineers (IAENG) - 208814 (Lifetime)
4	Dr. Bunil Kumar Balabantaray	1. ISTE (LM), 2. Soft Computing Research Society, India., Associate Member (UACEE), 3. Institute of Research Engineers and Doctors, (Membership No: AM10100057923)

Centre for Technology Enabled Learning

1. BRIEF INTRODUCTION TO THE CTEL:

The fantastic growth of Information technology (IT) over the last few decades has changed almost every part of our daily life. In order to exploit the technology to benefit our society in a major way, it is necessary to devote time and attention to engineering, expansion, as well as spreading of quality education in related areas. As part of a national initiative from the Ministry of Human Resource Development, the present endeavor has been mainly towards providing the required infrastructure and connectivity to the institutions of higher education like IITs and NITs. The objective is to create and manage a rich pool of digital resources and utilize them to provide quality certification programme and courses, which can be used by the universities as well as government and non-government organizations.

In its quest to make quality higher education accessible to the masses, the Government of India has been very keen to use the technological resources that are being developed to achieve the mission. As a major step in this direction, it had launched the National Mission on Education through Information and Communication Technology (NMEICT) in 2009 to allow eminent teachers and experts in the country to pool their collective wisdom for the benefit of every Indian individual who is willing to learn.

This will greatly help in reducing the digital divide, which has traditionally plagued our society. In addition to quality content generation, the mission also aims to promote research in critical areas relating to imparting education to the masses.

In the present context, it has been felt that there is a need to extend the reach of the mission to the north-eastern states of the country where reach ability of quality higher education is severely hampered due to unfriendly terrains, societal orientations, etc. As the first step in this direction, the Centre for Technology Enabled Learning (CTEL) has been set up in the NIT Meghalaya Campus, which will allow teachers to develop content, spread awareness in various regions of the north-east, and join the national initiative in a big way. The Centre strives to become the gateway of the north-east to achieve the goals of the national mission.

A state-of-the-art studio has been set up in the centre where facilities for both content creation and content distribution are being provided. Faculty members of the Institute as well eminent experts from other institutions and organizations are being approached to develop technically high-quality video contents, which will be made available to the students through on-line streaming technology. Through this studio, faculty members of NIT Meghalaya and also neighboring Institutes can participate in developing contents and directly assist in national initiatives like NPTEL and SWAYAM.

2. STAFF DETAILS:

Sl. No.	NAME	DESIGNATION
1.	Dr. Pradeep Kumar Rathore	Professor-In-Charge
2.	Mr. Sanju Mizar	Technical Assistant

3. ACTIVITIES IN CTEL

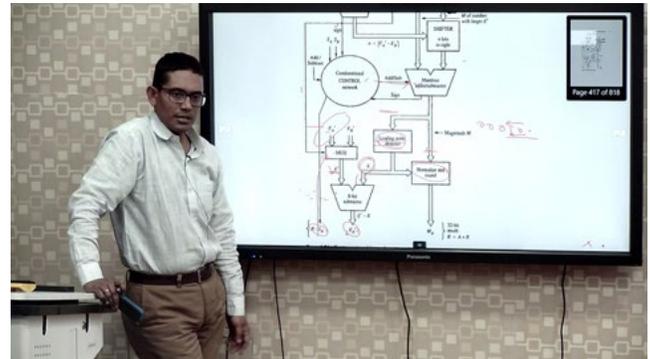
- Ph.D. Defense Seminar
- Invite Talk/ Guest Lecture
- Course Lecture Recording
- Other Activities.



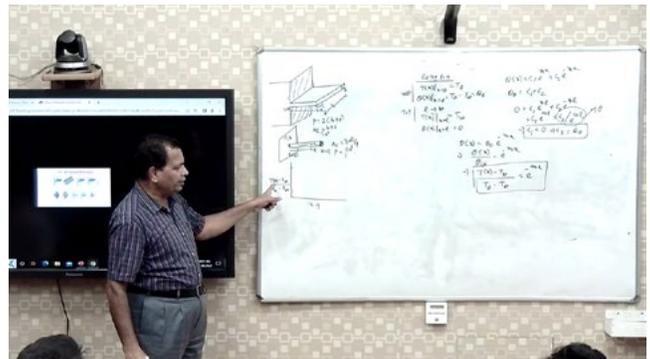
CTEL FACILITIES

4. LIST OF ITEMS/EQUIPMENT THAT HAVE BEEN INSTALLED AT CTEL RECORDING ROOM:

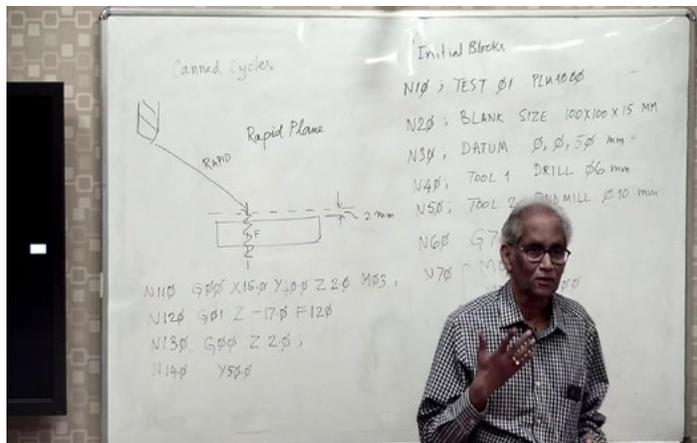
Panasonic LED Screen 65" Display cum White Board, Ma240 Audio Mixing Amplifier, Digital Wireless Head Worn Microphone Set, Digital Wireless Head Held Microphone Set, Lumens PTZ Camera, Crestron Air board Whiteboard Capture, Digital Graphics Engine, HDMI Switcher, HD Scaling Auto Switcher and HDMI, Media Presentation Controller along with Table top Kit, Magnetic Whiteboard of Size 6ft by 4ft, Digital Metallic Podium, Light Fixture.



Dr. Diptendu Sinha Roy, Department of Computer Science & Engineering



Prof. Harish Chandra Das, Department of Mechanical Engineering



Prof. Posinasetti Nageswara Rao
Department of Technology,
University of Northern Iowa



Students Attending Workshop

5. LECTURES RECORDED AT CTEL (1st April 2022 – 31st March 2023)

Sl No.	Department	Name of the Faculty	Total no. of Lectures
1	Computer Science & Engineering	Dr. Vipin Pal	15
		Dr. Bunil Kumar Balabantaray	4
		Dr. Diptendu Sinha Roy	11
2	Mechanical Engineering	Dr. Harish Chandra Das	16
TOTAL			46

6. DETAILS OF LECTURES BY SPEAKERS FROM OTHER ORGANIZATIONS

Sl No.	Department & Organization	Name & Designation	Total no. of Lectures
1	Department of Technology, University of Northern Iowa	Prof. Posinasetti Nageswara Rao, Professor	22

7. LIST OF OTHER ACTIVITIES AT CTEL

Sl. No	Date	Name of the Student/ Faculty/Staff	Department	Activities
1	13-04-2022	Himashree Mahanta	CY	Pre-Submission Seminar
2	13-05-2022	Sk Samir Ahamed	CY	Pre-Submission Seminar
3	17-05-2022	Dr. P Ramesh Babu	ME	Presentation
4	20-05-2022	Dr. Ch V Ramarao	EC	Project Presentation
5	23-05-2022	Sushanta Gogoi	EC	Pre-Submission Seminar
6	23-05-2022	Himashree Mahanta	CY	ODEC Seminar
7	24-05-2022	Aabir Das	ME	Pre-Submission Seminar
8	25-05-2022	Dr. Paonam Sudeep Mangang	HS	Seminar
9	25-05-2022	Vasujeet Singh and Pruthiviraj	ME	Progress Seminar
10	26-05-2022	Dr. Ch V Ramarao	EC	Project Presentation
11	26-05-2022	Chirag Gupta	EC	Progress Seminar
12	27-05-2022	Suehana Das, Russell Cooper Banks, Anmol Gautum, Mrinal Bisoi, Micheal Tongbram, Akshut Chadhuary, Samart Sarkar, Bilman Shira	CS	M. Tech Presentation
13	27-05-2022	Md. Arir	CS	Pre-Submission Seminar
14	27-05-2022	G.Ashishkumar	CS	Progress Seminar
15	27-05-2022	Rabindra	CS	Enhancement Seminar
16	30-05-2022	O Manner	PH	Progress Seminar
17	30-05-2022	Sikha	PH	Progress Seminar
18	30-05-2022	Bhargab	ME	Seminar
19	31-05-2022	Arunabh Choudhury	ME	Progress Seminar
20	31-05-2022	S Dutta	ME	Progress Seminar
21	31-05-2022	Eilyash Ahmed	PH	Progress Seminar
22	03-06-2022	Dr. P Ramesh Babu	ME	Presentation
23	06-06-2022	Karmey Hissey	CE	Pre-Submission Seminar
24	13-06-2022 to 26-06-2022	Dr. Bunil Kumar Balabantaray	CS	Karyashala High End Workshop
25	11-07-2022	Priyanki Kalita	PH	ODEC Seminar
26	13-07-2022	Siddheswar Rudra	CY	Pre-Submission Seminar
27	15-07-2022	Ansari	ME	Enhancement Seminar

Sl. No	Date	Name of the Student/ Faculty/Staff	Department	Activities
28	26-07-2022	Gitumoni Kalita	CY	ODEC Seminar
29	29-07-2022	Rashad Mustafa	ME	ODEC Seminar
30	01-08-2022 to 05-08-2022	Dr. Saikat Mukherjee	ME	Examination
31	04-08-2022	Sushmay Nandi	MA	ODEC Seminar
32	05-08-2022	Sonali And Prashant	CS	Registration Seminar
33	12-08-2022	Dheeman	ME	Progress Seminar
34	12-08-2022	Nirupama And Ajay Parida	CS	Registration Seminar
35	18-08-2022	Sharat Sarmah	CY	Pre-Submission Seminar
36	20-08-2022	Dr. Bunil Kumar Balabantaray	CS	Session on Agricultural
37	22-08-2022 to 27-08-2022	Dr. Yogita	CS	FDP Workshop on HPC
38	31-08-2022	Anjali and Mustafa	CE	Registration Seminar
39	05-09-2022	Sk Samir Ahemed	CY	ODEC Seminar
40	12-09-2022	Jerry sangma	CS	Pre-Submission Seminar
41	15-09-2022	Sudeshna and Dron	PH	Presentation
42	21-09-2022	Dr. Amit K Paul	SAC	Vote casting
43	21-09-2022	Dr. Ksh Milan Singh	EE	Expert Talk Online Mode
44	21-09-2022	Avishkek Goswami	CE	Registration Seminar
45	21-09-2022	Ashish B khelkar	ME	Registration Seminar
46	23-09-2022	C Panday	CS	Registration Seminar
47	24-09-2022	Binidita Barman	MA	ODEC Seminar
48	24-09-2022	Pushpak Das and Sambit	CS	Registration Seminar
49	26-09-2022	Arundhati	HS	Pre-Submission Seminar
50	26-09-2022	Debbarni Sarkar	EC	Registration Seminar
51	27-09-2022	Shyamoshree	EC	Registration Seminar
52	27-09-2022	Debraj Rana	EC	Registration Seminar
53	29-09-2022 and 30-09-2022	Dr. T Bora	PH	Presentation
54	14-10-2022	Manas Ranjan	ME	Enhancement Seminar
55	17-10-2022	Ch Sreekumar	CS	Registration Seminar
56	17-10-2022	Vaibhav Tiwari	CS	Registration Seminar
57	20-10-2022	Manas Ranjan	ME	Enhancement Seminar
58	21-10-2022	Mashusudan Nayak	CS	Registration Seminar
59	26-10-2022	Dr. T Bora	PH	Interactive Session for development of Scientific Research Culture
60	27-10-2022	Gitumoni Kalita	CY	Pre-Submission Seminar
61	28-10-2022	Dr. Rajat Subhra Das	Placement Cell	Recruitment
62	01-11-2022	Athul Nath	CE	Registration Seminar
63	01-11-2022	Kamal Das	CS	Registration Seminar
64	01-11-2022	Dr. A Ch Nayak	PH	CVD Essay Writing
65	02-11-2022	Pulakesh Gogoi	CY	Registration Seminar
66	02-11-2022	Saumitra Gangwar	CS	Enhancement Seminar
67	03-11-2022	Dr. A Ch Nayak	PH	COGNITA Quiz

Sl. No	Date	Name of the Student/ Faculty/Staff	Department	Activities
68	09-11-2022 to 12-11-2022	Dr. K Senthilkumar	PH	Workshop
69	16-11-2022	Dr. Rajat Das	Placement Cell	Recruitment
70	19-11-2022	Dr. Sudeep	HS	COIN 2023
71	24-11-2022	Pallabi Sharma	CS	Pre-Submission Seminar
72	25-11-2022	Richard B Lyngkhoi	CE	Registration Seminar/ Progress Seminar
73	25-11-2022	Sushant Gogoi	EC	ODEC Seminar
74	28-11-2022	Karma Hissay	CE	ODEC Seminar
75	29-11-2022	Dheeman	ME	Progress Seminar
76	29-11-2022	Mr. Mostafa and Ms. Anjali's	CE	Progress Seminar
77	29-11-2022	Dr. Satyandra	EC	Progress Seminar
78	30-11-2022	A Chaduary, S Dutta, G Surya Rao and Prithivi	ME	Progress Seminar
79	30-11-2022	Krishna Das	CE	Progress Seminar
80	30-11-2022	Ms. Ankita Bhowmick and Ms. Amanda Basaiawmoit	HS	Progress Seminar
81	01-12-2022	Anup J Das	ME	Progress Seminar
82	01-12-2022	Avishak Gosawami	CE	Progress Seminar
83	01-12-2022	Manas Rnajan	ME	Progress Seminar
84	02-12-2022	Ashish B Khelkar	ME	Progress Seminar
85	05-12-2022	Onus Manner	PH	Progress Seminar
86	05-12-2022	Shyamoshree	EC	Progress Seminar
87	06-12-2022	Chiranjibi	ME	Progress Seminar
88	06-12-2022	Nazir Uddin	CY	Registration Seminar
89	06-12-2022	Rishika	CY	Progress Seminar
90	07-12-2022	Shika Sharma	PH	Presentation practice
91	07-12-2022	Suresh Penchala	EC	Progress Seminar
92	07-12-2022	Ria Deb	Cy	Registration Seminar
93	07-12-2022	Palash	CY	Progress Seminar
94	08-12-2022	Arindom Bora	CE	Progress Seminar
95	08-12-2022	Shibshankar Si	PH	Registration Seminar
96	08-12-2022	Shika Sharma	PH	Pre-Submission Seminar
97	09-12-2022	Manik Das	MA	Pre-Submission Seminar
98	12-12-2022 to 16-12-2022	Dr. M Saha	MA	GAIN Course
99	13-12-2022	G A Prabhakar	EC	Pre-Submission Seminar
100	14-12-2022	Hanuman	ME	ODEC Seminar
101	15-12-2022	Moirangthem Santoshkumar Singh	EC	Pre-Submission Seminar
102	19-12-2022	Souvik Das	CE	Registration Seminar
103	09-01-2023 to 20-01-2023	Dr. D S Roy	CS	Recent Trends in Realizing Smart Sustainable Cities: Harnessing the Internet of Things based (IoT), Software Defined Networks (SDN) & Services

Sl. No	Date	Name of the Student/ Faculty/Staff	Department	Activities
104	24-01-2023	Akash Chandrabhan	ME	ODEC Seminar
105	27-01-2023	Rajesh M	EC	Registration Seminar
106	27-01-2023	Sharat Sarmah	CY	ODEC Seminar
107	31-01-2023	Abhnandan Kailta	EC	Progress Seminar
108	03-02-2023	Prof. M Shahrul & Prof. Mylene	EC	Foreign Talk
109	06-02-2023	Aisih Nath	CE	Registration Seminar
110	08-02-2023	Dr. D S Roy	CS	Pre-Submission Seminar
111	13-02-2023	Eliyas Ahmed	PH	ODEC Seminar
112	20-02-2023	Mr. Neeraj Kumar	ME	ODEC Seminar
113	20-02-2023	Dr. Bikash Kumar Sarkar	ME	Expert Talk
114	21-02-2023	Dr. P Sudeep Mangang	HS	Progress Seminar
115	22-02-2023	Mr. Ajit K Gupta	MA	Pre-Submission Seminar
116	23-02-2023	Siddheswar Rudra	CY	ODEC Seminar
117	24-02-2023 to 24-02-2023	Dr. Shaik Affijulla	EE	ISSETA 2023
118	01-03-2023	Dr. Bunil Kumar Balabantaray	CS	4 th Research Conclave
119	20/03/2023 to 24/03/2023	Dr. Anup Dandapat	EC	Workshop CDAC Kolkatta

8. LECTURE HALL

The existing Lecture Hall has been upgraded to a smart classroom for online teaching and learning purposes. The entire system is to be established for CTEL Expansion by the upgradation of the Lecture Hall to Smart Classroom. This facility is also being used for conducting invited lectures, student and faculty seminars and conferences etc.



9. LIST OF EQUIPMENT THAT HAVE BEEN INSTALLED AT LECTURE SMART CLASSROOM

Multi touch 86" Display, Digital Wireless Head Worn Microphone Set, Lumens Tracking Camera for Presenter, HDMI to USB Converter for Soft VC, 4 Wall Mount Speaker, Amplifier cum Mixer, 8Port Network Switch, Rack Mount 1000VA Online UPS, Wall Mount Rack 12 U Network Rack



10. LIST OF OTHER ACTIVITIES AT LECTURE HALL

Sl No	Date	Name of the Student/ Faculty/Staff	Department	Activities
1	01-04-2022	Ms. Ambika Rai	Academic	Pareeksha pe Charcha
2	27-07-2022	Dr. Atanu Banerjee	EE	1st meeting of 'The Cloud' -our Faculty & Officer's Club
3	01-08-2022	Dr. Atanu Banerjee	EE	Farewell event
4	31-08-2022	Ms. Ambika Rai	Academic	OFFLINE Workshop Techniche 2022
5	15-09-2022	Dr. Atanu Banerjee	EE	Engineer's Day
6	08-11-2022	Dr. K Senthilkumar	PH	Hand-On Training on Characterization Tools and Techniques for Materials Science
7	19-11-2022 to 20-11-2022	Dr. Paonam Sudeep Mangang	HS	COIN 2023
8	02-02-2023	Dr. Atanu Banerjee	EE	IIT Gandhi Nagar, for Higher studies
9	28-02-2023 to 01-03-2023	Dr. Bunil Kumar Balabantaray	CS	4 th Research Conclave

ANNUAL ACCOUNTS 2022-23





कार्यालय प्रधान महालेखाकार (लेखापरीक्षा)
मेघालय, शिलांग - 793 001
OFFICE OF THE
PRINCIPAL ACCOUNTANT GENERAL (AUDIT),
MEGHALAYA, SHILLONG – 793 001.

No AMG-I/NIT/8-5/2023-24/1074

Dated: 08.02.2024

To,

The Secretary to the Government of India,
Ministry of Education,
Room No.122 - C, Shastri Bhavan,
New Delhi – 110 001

Sub: Separate Audit Report on the accounts of the of the National Institute of Technology (NIT), Meghalaya Shillong for the year 2022-23

Sir,

I am to forward herewith the Separate Audit Report on the accounts of the of the National Institute of Technology (NIT), Meghalaya Shillong for the year 2022-23. and a set of audited Annual Account of NIT for the year 2022-23.

2. The Hindi version of the Separate Audit Report will be prepared by the NIT
3. The Separate Audit Report and the Annual Accounts sent may please be placed before both Houses of Parliament as soon as possible. The date(s) of placing of the Report and Accounts may please be intimated and ten copies of the Report, placed before Parliament, may please be sent to this office for records.
4. The Separate Audit Report may please be treated as Confidential till it is placed before the Parliament.

Kindly acknowledge receipt.

Yours faithfully,

Sd/-

Encl: As stated above.

Principal Accountant General (Audit)

Memo No.AMG.I/NIT/8-5/2023-24/1075

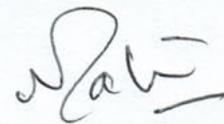
Dated 08 February 2024

Copy of the Separate Audit Report on the accounts of the National Institute of Technology (NIT), Shillong for the year 2022-23 are forwarded for information and necessary action to :-

The Director,
National Institute of Technology (NIT),
Bijini Complex, Laitumkhrah,
Shillong - 793003

2. Necessary arrangement may please be made for preparation of Hindi version of the Separate Audit Report and issue of the same to the Government of India, Ministry of Education with copy to this office.
3. The date(s) of placing the Separate Audit Report and Annual Accounts before both Houses of Parliament may please be intimated.
4. The Separate Audit Report sent herewith may please be treated as confidential till it is placed before both Houses of Parliament.

Kindly acknowledge receipt.



Deputy Accountant General/AMG-I

Separate Audit Report of the Comptroller and Auditor General of India on the accounts of National Institute of Technology (NIT), Meghalaya for the year ended 31 March 2023

We have audited the attached Balance Sheet of the National Institute of Technology (NIT), Meghalaya as at 31 March 2023, the Income and Expenditure Account and Receipts and Payments Account for the year ended on that date under Section 19(2) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 read with Section 22(2) of the National Institute of Technology (NIT) Act, 2007. These financial statements are the responsibility of the NIT's Management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller & Auditor General of India (CAG) on the accounting treatment only with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms, etc. Audit observations on financial transactions with regard to compliance with the Law, Rules & Regulations (Propriety and Regularity) and efficiency-cum-performance aspects, etc., if any, are reported through Inspection Reports/CAG's Audit Reports separately.

3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test basis, evidences supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

4. Based on our audit, we report that:

I. We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit.

II. The Balance Sheet and Income and Expenditure Account/Receipt and Payment Account dealt by this Report have been drawn in the revised format of accounts prescribed by Ministry of Education, Government of India for Central Educational Institutions.

III. In our opinion, proper books of accounts and other relevant records have been maintained by the NIT as required under Section 22(1) of the NIT Act, 2007 in so far as it appears from our examination of such books.

IV. We further report that:

A. Balance Sheet

Sources of Fund

Current Liabilities (Schedule- 3)

Receipts against Sponsored Projects (Schedule- 3a)

NIT R&D Account- ₹ 6.46 crore

A.1. The above head includes an amount of ₹ 62.99 lakh, being the share of the Institute out of the amount received from Consultancy projects undertaken by Faculties of the Institute. However, the share of the Institute was wrongly shown as part of Receipts against Sponsored Projects. This has resulted in understatement of Income from Consultancy and overstatement of Receipts against Sponsored Projects - NIT R&D Account by ₹ 62.99 lakh. The Deficit for the year is also overstated by ₹ 62.99 lakh.

Application of Funds

Fixed Assets (Schedule: 4)

Tangible Assets: ₹5.37 Crore

A.2. The Institute during the year capitalised an amount of ₹ 6.07 crore paid against the work order issued (July 2022) to M/s Netcom Solutions for Supply, Installation, Testing & Commissioning of Campus ICT Infrastructure at its Permanent Campus in Sohra. However, the work was yet to be completed as on 31.03.2023 and hence any amount paid should have been shown under Capital work in Progress and not as Fixed Assets. The Institute has however shown the amount paid as Fixed Assets resulting in overstatement of Computer & Peripherals, Buildings, Electrical Installations and Depreciation by ₹ 2.17 crore, ₹ 0.69 crore, ₹ 2.52 crore and ₹ 0.69 crore respectively as well as the understatement of Capital Work in Progress by ₹ 6.07 crore. The Deficit for the year is also overstated by ₹ 0.69 crore.

A.3. The Institute during the year purchased various assets valuing ₹ 44.31 lakh which were wrongly booked as Revenue Expenditure under Administrative and General Expenses and Repairs & Maintenance. This has resulted in understatement of Computer & Peripherals, Electrical Installation, Building, Scientific & Laboratory Equipment and Depreciation by ₹ 15.18 lakh, ₹ 8.96 lakh, ₹ 2.30 lakh, ₹ 12.47 lakh and ₹ 5.40 lakh respectively as well as overstatement of Administrative and General Expenses- Recurring Expenses for Departments and Repairs & Maintenance- Others by ₹ 24.41 lakh and ₹ 19.90 lakh respectively. The Deficit for the year is also overstated by ₹ 38.19 lakh.

Intangible Assets**E-Journals-₹ 1**

A.4. The Institute during the year paid an amount of ₹ 1.27 crore for subscription to E-Journals which were however booked under Administrative Expenses- Recurring expenses for Departments instead of under Intangible Assets. This has resulted in understatement of E-Journals by ₹ 0.76 crore, Depreciation by ₹ 0.51 crore and overstatement of Administrative Expenses- Recurring expenses for Departments by ₹ 1.27 crore. The Deficit for the year is also overstated by ₹ 0.76 crore.

Capital Work in Progress-₹ 311.05 crore.

A.5. The Institute during the year paid an amount of ₹ 8.99 crore as advance to Contractors for providing electricity supply and electrical works at the New Campus of the Institute which was booked under Capital Work in Progress. However, the Contractors were yet to start any work as on 31.03.2023 against the advance paid. Hence, the Institute should have shown the amount paid as Advances instead of Capital Work in Progress. This has resulted in understatement of Advances and overstatement of Capital Work in Progress by ₹ 8.99 crore.

B: Income and Expenditure Account**Expenditure****Academic Expenses (Schedule- 16)****Recurring Contingency -₹ 20.74 lakh**

B.1. The above head includes an amount of ₹ 12.90 lakh being the amount paid to NEEPCO Ltd. towards consultancy charges for construction of water storage at the Institute's Permanent Campus in Sohra. Since the expenditure was incurred by the Institute for construction works, the same should have booked as Capital Expenditure and not as Revenue Expenditure. The wrong booking of the expenses has resulted in overstatement of Academic Expenses and understatement of Capital Work in Progress by ₹ 12.90 lakh.

C: General:**Current Assets (Schedule- 7)****Cash and Bank Balances****In Current Accounts - ₹ 24.77 crore****In Savings Accounts - ₹ 33.02 crore**

C.1. On examination of the Bank Reconciliation Statement (BRS) prepared by the Institute, it was observed that there were huge balances of unreconciled balances/ stale cheques. The Institute should identify the reasons for these unreconciled balances/ stale cheques and pass necessary rectification entries in the Accounts.

D: Grants-in-Aid:

D.1. The opening balance of Grants-in-Aid was ₹ 72.74 crore. During the year 2022-23, an amount of ₹ 65.89 crore was received. Out of available balance, an amount of ₹ 109.12 crore was utilised, leaving an unspent balance of ₹ 29.51 crore as on 31 March 2023 as depicted in the books of account.

V. Subject to our observations in the preceding paragraphs, we report that the Balance Sheet, Income and Expenditure Account and Receipts and Payments Account dealt with by this report are in agreement with the books of accounts; and

VI. In our opinion and to the best of our information and according to the explanations given to us, the said financial statements read together with the Accounting Policies and Notes on Accounts, and subject to the significant matters stated above and other matters mentioned in **Annexure** to this Audit Report give a true and fair view in conformity with accounting principles generally accepted in India:

(a) In so far as it relates to the Balance Sheet, of the state of affairs of the National Institute of Technology (NIT), Meghalaya as at 31 March 2023; and

(b) In so far as it relates to Income and Expenditure Account of the Deficit for the year ended on that date.

Place: Shillong**Date:****For and on behalf of the C&AG of India**

Pr. Accountant General (Audit)
Meghalaya, Shillong

ANNEXURE

1. Adequacy of Internal Audit System

The Institute has set up an Internal Audit Wing, however, the scope of the wing is limited to scrutiny of bills before making payments. Further, the Internal Audit Wing has not been given full responsibility for conducting audits.

2. Adequacy of Internal Control System

The following deficiencies in Internal Control System were observed:

- (i) The Institute paid an amount of ₹ 87,110 twice for Supply, Installation, Testing & Commissioning of Chemical Earthing for Fatigue Fracture Testing Machine.
- (ii) The Institute has not developed any manual relating to Accounts and Audit.
- (iii) The Institute had 12 dormant accounts (1 current account and 11 savings accounts) with a total balance of ₹ 10.07 lakh which were yet to be closed down.

3. System of Physical Verification of Fixed Assets

The Institute has not conducted physical verification of Fixed Assets during the year.

4. System of Physical Verification of Inventories

The Institute has not conducted physical verification of Inventories/ Consumables during the year.

5. Regularity in payment of statutory dues:

The Institute has been regular in payment of statutory dues.



Sr. Audit Officer/AMG-I

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

BALANCE SHEET AS AT 31ST MARCH 2023

[Amount in ₹]

SOURCES OF FUNDS	Schedule	Current Year	Previous Year
CORPUS/CAPITAL FUND	1	3884773588.67	3365413536.54
DESIGNATED/ EARMARKED / ENDOWMENT FUNDS	2	123984921.00	119161853.00
CURRENT LIABILITIES & PROVISIONS	3	586522518.59	956719958.18
TOTAL		4595281028.26	4441295347.72
APPLICATION OF FUNDS			
FIXED ASSETS	4		
Tangible Assets		528832960.13	349984574.17
Intangible Assets		5371552.77	18765541.77
Capital Works-In-Progress		3110525890.00	2826643844.62
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5		
Long Term		0.00	0.00
Short Term		0.00	0.00
INVESTMENTS - OTHERS	6	0.00	0.00
CURRENT ASSETS	7	915109222.33	1208728110.23
LOANS, ADVANCES & DEPOSITS	8	35441403.02	37173276.93
TOTAL		4595281028.25	4441295347.72

SIGNIFICANT ACCOUNTING POLICIES	23
CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS	24

For NIT Meghalaya

Director

Registrar

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2023

[Amount in ₹]

Particulars	Schedule	Current Year	Previous Year
INCOME			
Academic Receipts	9	48632243.09	42438111.50
Grants / Subsidies	10	529948209.25	441457028.59
Income from investments	11	0.00	42771181.00
Interest earned	12	3745013.00	2086509.00
Other Income	13	13620354.00	14128596.00
Prior Period Income	14	0.00	1280970.28
TOTAL (A)		595945819.34	544162396.37
EXPENDITURE			
Staff Payments & Benefits (Establishment expenses)	15	278220209.25	247300432.00
Academic Expenses	16	63911630.80	45566401.74
Administrative and General Expenses	17	82929587.00	77061166.40
Transportation Expenses	18	17841622.00	4893826.00
Repairs & Maintenance	19	86629949.00	64971228.00
Finance costs	20	65211.57	59578.45
Depreciation	4	105039981.60	50759578.86
Other Expenses	21	0.00	0.00
Prior Period Expenses	22	350000.00	1604396.00
TOTAL (B)		634988191.22	492216607.45
Balance being excess of Income over Expenditure (A-B)		-39042371.88	51945788.92
Transfer to / from Designated Fund			
Building fund			
Others (specify)			
Balance Being Surplus / (Deficit) Carried to Capital Fund		-39042371.88	51945788.92
Significant Accounting Policies	23		
Contingent Liabilities and Notes to Accounts	24		

For NIT Meghalaya

Director

Registrar

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE- 1 CORPUS/CAPITAL FUND

[Amount in ₹]

Particulars		Current Year	Previous Year
	Balance at the beginning of the year	3365413536.54	2699003378.62
Add:	Contributions towards Corpus/Capital Fund	0.00	0.00
Add:	Adjustments of Previous years	0.00	0.00
Add:	Grants from UGC, Government of India and State Government to the extent utilized for capital expenditure	558402424.00	614464369.00
Add:	Assets Purchased out of IRG		
Add:	Assets Purchased out of Sponsored Projects, where ownership vests in the institution	0.00	0.00
Add:	Assets Donated/Gifts Received	0.00	0.00
Add:	Depreciation for prior period	0.00	0.00
Add:	Excess of Income over expenditure transferred from the Income & Expenditure Account	-39042371.88	51945788.92
(Deduct)	B/F Unutilized Grant transferred to Current Liabilities	0.00	0.00
Total		3884773588.67	3365413536.54
(Deduct)	Deficit transferred from the Income & expenditure Account	0.00	0.00
	Balance at the year end	3884773588.67	3365413536.54

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 2 - DESIGNATED/ EARMARKED / ENDOWMENT FUNDS

[Amount in ₹]

Particulars	Fund wise Breakup		Total Current Year (A1+A2)	Fund wise Breakup		Total Previous Year (A1+A2)
	Internal Resources Fund A1	Corpus Fund A2		Internal Resources Fund A1	Corpus Fund A2	
A.						
a) Opening balance	94017762.00	25144091.00	119161853.00	94017762.00	20022076.00	114039838.00
b) Additions during the year	0.00	1141413.00	1141413.00		1692749.00	1692749.00
c) Income from investments made of the funds	0.00	0.00	0.00	0.00	3429266.00	3429266.00
d) Accrued Interest on investments/Advances	0.00	0.00	0.00	0.00	0.00	0.00
e) Interest on Savings Bank a/c	0.00	3681655.00	3681655.00	0.00	0.00	0.00
f) Other additions (Specify nature)	0.00	0.00	0.00	0.00	0.00	0.00
Total (A)	94017762.00	29967159.00	123984921.00	94017762.00	25144091.00	119161853.00
B.						
Utilisation/Expenditure towards objectives of funds						
ii) Capital Expenditure	0.00	0.00	0.00	0.00	0.00	0.00
ii) Revenue Expenditure	0.00	0.00	0.00	0.00	0.00	0.00
Total (B)	0.00	0.00	0.00	0.00	0.00	0.00
Closing balance at the year end (A - B)	94017762.00	29967159.00	123984921.00	94017762.00	25144091.00	119161853.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 3- CURRENT LIABILITIES & PROVISIONS

[Amount in ₹]

Particulars	Current Year	Previous Year
A. CURRENT LIABILITIES		
1. Deposits from staff	6440800.75	7641506.25
2. Deposits from students	20572095.00	21827319.00
3. Sundry Creditors	0.00	0.00
a) For Goods & Services	0.00	0.00
b) Others	0.00	0.00
4. Deposit-Others (including EMD, Security Deposit) (As per Annexure 'A')	20189183.05	15225801.05
5. Statutory Liabilities (GPF, TDS, WC TAX, CPF, GIS, NPS): (As per Annexure 'B')		
a) Overdue	0.00	0.00
b) Others	6816888.78	6272641.78
6. Other Current Liabilities		
a) Salaries	0.00	0.00
b) Receipts against sponsored projects (As Per Annexure 3a)	65960784.98	65532431.26
c) Receipts against sponsored fellowships & scholarships	2722246.00	2632430.00
d) Unutilised Grants (As Per Annexure 3c)	295104509.42	727416839.67
e) Grants in advance	0.00	0.00
f) Other funds	4178456.00	3802456.00
g) Other liabilities (As per Annexure 'C')	90044621.61	53305618.17
Total (A)	512029585.59	903657043.18
B. PROVISIONS		
1. For Taxation	0.00	0.00
2. Gratuity	32158658.00	11999294.00
3. Superannuation Pension	0.00	0.00
4. Accumulated Leave Encashment	42334275.00	41063621.00
5. Trade Warranties/Claims	0.00	0.00
6. Others - Provision for Expenses	0.00	0.00
Total (B)	74492933.00	53062915.00
Total (A+ B)	586522518.59	956719958.18

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 3(a) - SPONSORED PROJECTS

[Amount in ₹]

SI No.	Name of Project	Opening Balance		Receipts / Recoveries during the year	Total	Expenditure during the year	Closing Balance	
		Credit	Debit				Credit	Debit
1	2	3	4	5	6	7	8	9
1	NIT R&D Account	64932228.77	0.00	44248437.00	109180665.77	44576240.98	64604424.79	0.00
2	Sponsored Project/NMHS-PMU/Vipin	5621.54	0.00	0.00	5621.54	0.00	5621.54	0.00
3	Sponsored Project - CE/02 (Khwirakpam)	6539.50	0.00	170.00	6709.50	0.00	6709.50	0.00
4	PHD-Visvesvaraya	201969.59	0.00	5799.00	207768.59	70.80	207697.79	0.00
6	Sponsored Project/Chem/Parash		802.36	14.00	-788.36	527.00	0.00	-1315.36
8	Sponsored Project/DeITY/K. Datta	1238.00	0.00	32.00	1270.00	0.00	1270.00	0.00
11	Sponsored Project/SMDP/Dandapat	29187.00	0.00	796.00	29983.00	0.00	29983.00	0.00
12	RECPTL	257384.13	0.00	6709.00	264093.13	35775.00	228318.13	0.00
13	Sponsored Project/Gitish K Dutta	97318.98	0.00	2528.00	99846.98	0.00	99846.98	0.00
14	Sponsored Project/Rajarshi Ray	943.75	0.00	22.00	965.75	527.00	438.75	0.00
15	Sponsored Project/MEITY	0.00	0.00	776474.50	776474.50	0.00	776474.50	0.00
	Total	65532431.26	802.36	45040981.50	110572610.40	44613140.78	65960784.98	-1315.36

Notes:

- The Projects may be listed agency-wise, with sub-totals for each agency.
- The total of Col. 8 (Credit) will appear under the above head on the liabilities side of the Balance Sheet (Schedule 3).
- The total of Col. 9 (Debit) will appear as Receivables in Schedule 8, Loans, Advances and Deposits, on the Assets side of the Balance Sheet.

SCHEDULE 3(b) - SPONSORED FELLOWSHIPS AND SCHOLARSHIPS

SI No.	Name of Sponsor	Opening Balance		Transactions during the year		Closing Balance	
		Credit	Debit	Credit	Debit	Credit	Debit
1	2	3	4	5	6	7	8
1	Scholarship - Top Class	1789769.00	0.00	0.00	0.00	1789769.00	0.00
2	External Individual Scholarships	932477.00	0.00	0.00	0.00	932477.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00
	Total	2722246.00	0.00	0.00	0.00	2722246.00	0.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 3(c) - UNUTILIZED GRANTS FROM UGC, GOVERNMENT OF INDIA AND STATE GOVERNMENTS

[Amount in ₹]

	Particulars	Current Year	Previous Year
A	Recurring Grants: Government of India		
	Balance B/F	55695142.28	82243170.47
	Add: Receipts during the year	216500000.00	191793000.00
	Add: Refunds	17679.00	0.00
	Total (a)	272212821.28	274036170.47
	Less: Refunds	0.00	1793166.60
	Less: Utilized for Revenue Expenditure	275281441.00	216547861.59
	Less: Utilized for Capital Expenditure	0.00	0.00
	Total (b)	275281441.00	218341028.19
	Unutilized carried forward (a-b)	-3068619.72	55695142.28
B	Capital Grants: Government of India		
	Balance B/F	656647650.06	1010559372.06
	Add: Receipts during the year	203200000.00	302200000.00
	Total (a)	859847650.06	1312759372.06
	Less: Refunds	187405.00	41647353.00
	Less: Utilized for Revenue Expenditure	0.00	0.00
	Less: Utilized for Capital Expenditure	558402424.00	614464369.00
	Total (b)	558589829.00	656111722.00
	Unutilized carried forward (a-b)	301257821.06	656647650.06
C	Salary Grants: Government of India		
	Balance B/F	15074047.33	17358640.33
	Add: Receipts during the year	239200000.00	235361000.00
	Total (a)	254274047.33	252719640.33
	Less: Refunds	2691971.00	12736426.00
	Less: Utilized for Revenue Expenditure	254666768.25	224909167.00
	Less: Utilized for Capital Expenditure	0.00	0.00
	Total (b)	257358739.25	237645593.00
	Unutilized carried forward (a-b)	-3084691.92	15074047.33
	Grand Total (A+B+C+D)	295104509.42	727416839.67

Capital Grant :

Additions made to respective assets via adjustments/credits to CWIP have not been considered as grant utilisation since net additions made to CWIP have been considered as utilisation of grant already.

Recurring Grant :

Employer's share towards NPS has been added to Recurring Grant as per budget given by Ministry.

Salary Grant:

Employer's share towards NPS has been subtracted from Salary Grant as per budget given by Ministry.

Expenses have been taken after reduction of credits made to respective heads.

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 4 FIXED ASSETS

[Amount in ₹]

S.No.	Assets Heads	Gross Block			Depreciation			Net Block					
		Opening Balance	Additions	Adjustments	Net Addition	Closing Balance	Opening Balance	Prior Period Depreciation	Depreciation for the Year	Deductions/Adjustment	Closing Balance	Balance as on 31.03.2023	Balance as on 31.03.2022
1	Land	2000000.00			0.00	2000000.00	0.00	0.00	0.00	0.00	2000000.00	2000000.00	
2	Buildings	35966360.00	34374142.00		0.00	70340502.00	2106257.20	0.00	1406810.04	0.00	3513067.24	66827434.76	33860102.80
(a)	Buildings - Permanent Campus	35966360.00	0.00			35966360.00	2106257.20	0.00	719327.20	0.00	2825584.40	33140775.60	33860102.80
(b)	Buildings - Permanent Campus	0.00	34374142.00			34374142.00	0.00	0.00	687482.84	0.00	687482.84	33686659.16	0.00
3	Roads & Bridges	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Tubewells & Water Supply	446375.00			0.00	446375.00	62494.00	0.00	8928.00	0.00	71422.00	374953.00	383881.00
5	Sewerage & Drainage	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Electrical Installation and equipment	15544922.00	30777031.00		0.00	46321953.00	2752322.00	0.00	2316098.00	0.00	5068420.00	41253533.00	12792600.00
7	Plant & Machinery	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Scientific & Laboratory Equipment	332195042.00	142778633.00	-358800.00	142419833.00	474614875.00	103161696.00	0.00	37969190.00	0.00	141130886.00	333483989.00	229033346.00
9	Office Equipment	67651227.00	1411686.00		0.00	69062913.00	39527622.90	0.00	5179718.00	0.00	44707340.90	24355572.10	28123604.10
10	Audio Visual Equipment	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Computers & Peripherals	108699259.00	42744994.00		358800.00	151803053.00	91848012.80	0.00	30360611.00	0.00	122208623.80	29594429.20	16851246.20
12	Furniture, Fixtures & Fittings	65226915.00	9580524.00		0.00	74807439.00	39121691.93	0.00	5610558.00	0.00	44732249.93	30075189.07	26105223.07
13	Vehicles	3243960.00			0.00	3243960.00	2409390.00	0.00	324396.00	0.00	2733786.00	510174.00	834570.00
14	Library Books & Scientific Journals	8886404.00	397428.00		0.00	9283832.00	8886403.00	0.00	39743.00	0.00	8926146.00	357686.00	1.00
15	Small Value Assets	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total (A)	639860464.00	262064438.00		0.00	901924902.00	289875889.83	0.00	83216052.04	0.00	373091941.87	528832960.13	349984574.17
16	Capital Work in Progress (B)	2826643844.23	315212996.00	-31330951.00	283882045.00	3110525889.23	0.00	0.00	0.00	0.00	0.00	3110525890.00	2826643844.23

S.No.	Intangible Assets	Opening Balance	Additions	Deductions	Net Addition	Closing Balance	Opening Balance	Prior Period Depreciation	Amortization for the Year	Deductions/Adjustments	Closing Balance	Balance as on 31.03.2023	Balance as on 31.03.2022
17	Computer Software	77543309.00	8429941.00	0.00	8721289.00	86264598.00	74099004.00	0.00	6932820.00	0.00	81031824.00	5232774.00	3444305.00
18	E-Journals	87177839.00			-2,91,348	8,68,86,491	7,20,23,136	-2,91,348	1,48,63,354.00		8,65,95,142	1	1,51,54,703
19	Patents	249800.00				2,49,800	83,267		27,756		1,11,022	1,38,778	1,66,533
Total (C)		164970948.00	8429941.00	0.00	8429941.00	173400889.00	146205406.67	-291348.00	21823929.56	0.00	167737988.23	5371552.77	18765541.33
	Grand Total (A+B+C)	3.63.14.75.256.23	58.57.07.375	-3.13.30.951	55.43.76.424	4.18.58.51.680	43.60.81.297	-2.91.348	10.50.39.982	-	54.08.29.930	3.64.47.30.403	3.19.53.93.960

Note:

- The figure in Column "Deductions" under Gross Block against the head Capital Work in Progress represents the transfer from Work in Progress to Assets during the year; The figures in column "Additions during the year under Gross Block against Assets 1 to 14 include transfer from Work in Progress during the year, as well as further acquisitions during the year
- Depreciation on Library books & Journals have been charged on net addition made during the year. As the opening balance of net block of the asset was at nominal value.

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 5 : INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS

[Amount in ₹]

	Current Year	Previous Year
1 In Central Government Securities	0.00	0.00
2 In State Government Securities	0.00	0.00
3 Other approved Securities	0.00	0.00
4 Shares	0.00	0.00
5 Debentures and Bonds	0.00	0.00
6 Term Deposits with Banks	0.00	0.00
7 Others (to be specified)	0.00	0.00
Total	0.00	0.00

SCHEDULE 6: INVESTMENTS — OTHERS

	CURRENT YEAR	PREVIOUS YEAR
1 In Central Government Securities	0.00	0.00
2 In State Government Securities	0.00	0.00
3 Other approved Securities	0.00	0.00
4 Shares	0.00	0.00
5 Debentures and Bonds	0.00	0.00
6 Others	0.00	0.00
TOTAL	0.00	0.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 7: CURRENT ASSETS

[Amount in ₹]

	Current Year	Previous Year
1. Stock:		
a)Stores and Spares	0.00	0.00
b)Loose Tools	0.00	0.00
c)Publications	0.00	0.00
d)Laboratory chemicals, consumables and glass ware	0.00	0.00
e)Building Material	0.00	0.00
f)Electrical Material	0.00	0.00
g)Stationery	0.00	0.00
h)Water supply material	0.00	0.00
2. Sundry Debtors:		
a)Debts Outstanding for a period exceeding six months	0.00	0.00
b)Others	0.00	0.00
3. Cash and Bank Balances		
a) With Scheduled Banks:		
In Current Accounts	247715567.39	117863545.16
In term deposit Accounts	337173771.00	778858241.00
In Savings Accounts	330219883.94	312006324.07
b) With non-Scheduled Banks:		
In term deposit Accounts	0.00	0.00
In Savings Accounts	0.00	0.00
c) Cash in hand:	0.00	0.00
4. Post Office- Savings Accounts	0.00	0.00
TOTAL	915109222.33	1208728110.23

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 8 - LOANS, ADVANCES & DEPOSITS

[Amount in ₹]

	Current Year	Previous Year
1. Advances to employees: (Non-interest bearing)		
a)Salary	0.00	0.00
b)Festival	0.00	0.00
c)Medical Advance	0.00	0.00
d)Other - PDA Advance	280882.93	134638.93
e)Other - LTC Advance	17000.00	100700.00
f) Loan to Sponsored Projects	822866.00	0.00
2. Long Term Advances to employees: (Interest bearing)		
a)Vehicle loan	0.00	0.00
b)Home loan	0.00	0.00
c)Others (to be specified)	0.00	0.00
3. Advances and other amounts recoverable in cash or in kind or for value to be received:		
a)On Capital Account	16750545.10	16432340.64
b)To Suppliers	4882144.00	0.00
c)Others - Travelling Advance	0.00	0.00
d)Others - Temporary Advance	0.00	0.00
e)Advance - Imprest	30000.00	0.00
f)Advance against Projects	0.00	0.00
g) TDS	4296742.00	
4. Prepaid Expenses		
a) Repairs and Maintenance	1727014.00	5557967.00
b)Other expenses -Leased Line Charges	198540.00	198540.00
c) Rent	0.00	2583846.00
5. Deposits		
a)Telephone	0.00	0.00
b)Lease Rent	0.00	0.00
c)Electricity	0.00	0.00
d)AICTE, if applicable	0.00	0.00
f)Others	1552330.00	3506122.00
6. Income Accrued:		
a)On Investments from Earmarked/ Endowment Funds	0.00	0.00
b)On Investments-Others	0.00	0.00
c)On Loans and Advances	0.00	0.00
d)Others (includes income due unrealized) (Term Deposits)	2206446.00	6040126.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 8 - LOANS, ADVANCES & DEPOSITS

[Amount in ₹]

	Current Year	Previous Year
7. Other - Current assets receivable from UGC/sponsored projects		
a) Debit balances in Sponsored Projects	1315.36	802.36
b) Debit balances in Sponsored Fellowships & Scholarships	0.00	0.00
c) Grants Receivable	0.00	0.00
d) Other receivables from UGC	0.00	0.00
e) Caution Money - B Tech	9000.00	9000.00
f) CCMT 2017	300.00	300.00
g) CCMT Admission Expenses 2016	25361.00	25361.00
h) CSAB Refund	146000.00	146000.00
i) External Agency Funds- For exams, conference, seminar, etc.	57383.63	0.00
8. Claims Receivable		
Sundry Receivables	2437533.00	2437533.00
TOTAL	35441403.02	37173276.93

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 9 - ACADEMIC RECEIPTS

[Amount in ₹]

		Current Year	Previous Year
A. FEES FROM STUDENTS			
A. Academic			
1	Enrollment and Registration Fee	1480000.00	1568200.00
2	Application Fee	0.00	1336503.00
3	Summer Term Course Fee	0.00	56000.00
4	Laboratory and Internet Fee	3924000.00	4371500.00
5	Library Fee	1909500.00	1811100.00
6	Provisional Certificate Fee	0.00	349000.00
7	Student Activity Fee	3108500.00	3402500.00
8	International Student Fee	0.00	2627000.00
9	CCMT/CSAB Fee	0.00	0.00
10	Tuition Fees	32825643.09	22916608.50
	Total (A)	43247643.09	38438411.50
B. Examinations			
	1 Examination Fee and Grade Fee	1480000.00	1922850.00
	Total (B)	1480000.00	1922850.00
C. Other Fees			
	1 Identity Card Fee	14100.00	52350.00
	2 Hostel Admission Fee	0.00	33000.00
	3 Fine	153000.00	164000.00
	4 Transportation Fee	3643500.00	1677500.00
	5 Thesis Submission Fee	0.00	150000.00
	6 Degree Certificate Fee	94000.00	0.00
	Total (C)	3904600.00	2076850.00
D. Sale of Publications			
	1.Sale of Admission forms	0.00	0.00
	2.Sale of syllabus and Question Paper, etc.	0.00	0.00
	3.Sale of prospectus including admission forms	0.00	0.00
	Total (D)	0.00	0.00
E. Other Academic Receipts			
	1.Stipend/means-cum-merit scholarship	0.00	0.00
	2.Registration fees (Academic Staff College)	0.00	0.00
	Total (E)	0.00	0.00
	Grand Total (A+B+C+D+E)	48632243.09	42438111.50

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 10 — GRANTS / SUBSIDIES (IRREVOCABLE GRANTS RECEIVED)

[Amount in ₹]

Particulars	Recurring		Capital		Salary		Total	Recurring		Capital		Salary		Previous Year Total
	Govt. of India		Govt. of India		Govt. of India			Govt. of India		Govt. of India		Govt. of India		
Balance B/F	55695142.28		656647650.06		15074047.33		727416839.67	82243170.47	1010559372.06	17358640.33		1110161182.86		
Add: Receipts during the year	216500000.00		203200000.00		239200000.00		658900000.00	191793000.00	302200000.00	235361000.00		729354000.00		
Add: Refund to UGC Balance	17679.00		0.00		0.00		17679.00							
Total	272212821.28		859847650.06		254274047.33		1386334518.67	274036170.47	1312759372.06	252719640.33		1839515182.86		
Less: Refund to UGC Balance	0.00		187405.00		2691971.00		2879376.00	1793166.60	41647353.00	12736426.00		56176945.60		
Less: Utilised for Capital expenditure (A)	0.00		558402424.00		0.00		558402424.00	0.00	614464369.00	0.00		614464369.00		
Balance	272212821.28		301257821.06		251582076.33		825052718.67	272243003.87	656647650.06	239983214.33		1168873868.26		
Less: Utilized for Revenue Expenditure (B)- Amount transferred to Income & Expenditure Account	275281441.00		0.00		254666768.25		529948209.25	216547861.59	0.00	224909167.00		441457028.59		
Balance C/F (C)	-3068619.72		301257821.06		-3084691.92		295104509.42	55695142.28	656647650.06	15074047.33		727416839.67		

A-Appears as addition to Corpus/Capital Fund (Schedule-1) as well as additions to Fixed Assets during the year.

B-Appears as income in the Income & Expenditure Account.

C-(I) Appears under Current Liabilities-Unspent Grant in the Balance Sheet and will become the opening balance next year (Schedule 3).

(II) Represented by Bank balances, Investments and Advances on the assets side.

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 11- INCOME FROM INVESTMENTS

[Amount in ₹]

Particulars	Earmarked / Endowment Funds		Other Investments	
	Current Year	Previous Year	Current Year	Previous Year
1. Interest				
a. On Government Securities	0.00	0.00	0.00	0.00
b. Other Bonds/Debentures	0.00	0.00	0.00	0.00
2. Interest on Term Deposits	0.00	0.00	0.00	42771181.00
3. Income accrued but not due on Term Deposits/Interest bearing advances to employees	0.00	0.00	0.00	0.00
4. Interest on Savings Bank Accounts	0.00	0.00	0.00	0.00
5. Others (Specify)	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	42771181.00
Transferred to Earmarked/Endowment Funds	0.00	0.00		
Balance	0.00	0.00		

SCHEDULE 12: INTEREST EARNED

[Amount in ₹]

Particulars	Current Year	Previous Year
1. On Savings Accounts with scheduled banks	3745013.00	2086509.00
2. On Loans		
a. Employees/Staff	0.00	0.00
b. Others	0.00	0.00
3. On Debtors and Other Receivables	0.00	0.00
Total	3745013.00	2086509.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 13- OTHER INCOME

[Amount in ₹]

	Current Year	Previous Year
A. Income from Land & Buildings		
1.Hostel Seat Rent	7465000.00	8352729.00
2.Rental Income	16000.00	0.00
3.Hostel Electricity and Water Charges	2704500.00	1955500.00
4.Hostel Establishment Fee	2769000.00	3097500.00
Total	12954500.00	13405729.00
B. Sale of Institute's publications	0.00	0.00
C. Income from holding events		
1.Gross Receipts from annual function/ sports carnival	0.00	0.00
Less: Direct expenditure incurred on the annual function/ sports carnival	0.00	0.00
2.Gross Receipts from fetes	0.00	0.00
Less: Direct expenditure incurred on the fetes	0.00	0.00
3.Gross Receipts for educational tours	0.00	0.00
Less: Direct expenditure incurred on the tours	0.00	0.00
4.Overhead Charges	0.00	0.00
Total	0.00	0.00
D. Others		
1. Income from consultancy		0.00
2. RTI fees		558.00
3. Income from Royalty	0.00	0.00
4. Sale of application form (recruitment)	0.00	0.00
5. Misc. receipts (Sale of tender form)	0.00	0.00
6. Profit on Sale/disposal of Assets	0.00	0.00
a)Owned assets	0.00	0.00
b)Assets received free of cost	0.00	0.00
7. Grants/Donations from Institutions, Welfare Bodies and International Organizations	0.00	0.00
8. Others		
a) Miscellaneous	266042.00	451669.00
b) External Scholarship	375088.00	270640.00
c) Sample Charges	24724.00	0.00
Total	665854.00	722867.00
Grand Total (A+B+C+D)	13620354.00	14128596.00

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SCHEDULE 14 - PRIOR PERIOD INCOME

[Amount in ₹]

Particulars	Current Year	Previous Year
1.Academic Receipts	0.00	0.00
2.Remuneration	0.00	42000.00
3.Interest earned	0.00	908023.00
4. Other Income	0.00	330947.28
Total	0.00	1280970.28

SCHEDULE 15 — STAFF PAYMENTS & BENEFITS (ESTABLISHMENT EXPENSES)

[Amount in ₹]

	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a)Salaries and Wages	217245251.25	0.00	217245251.25	217748440.00	0.00	217748440.00
b)Allowances and Bonus	5399643.00	0.00	5399643.00	2054422.00	0.00	2054422.00
c)Contribution to Provident Fund	0.00	0.00	0.00	0.00	0.00	0.00
d)Contribution to Other Fund (specify)	0.00	0.00	0.00	0.00	0.00	0.00
e)Staff Welfare Expenses	0.00	0.00	0.00	0.00	0.00	0.00
f)Retirement and Terminal Benefits	44033268.00	0.00	44033268.00	26100194.00	0.00	26100194.00
g)LTC facility	2736577.00	0.00	2736577.00	1307606.00	0.00	1307606.00
h)Leave Encashment	5003778.00	0.00	5003778.00	0.00	0.00	0.00
i)Guest Faculty	69166.00	0.00	69166.00	0.00	0.00	0.00
j)Honorarium	0.00	0.00	0.00	139000.00	0.00	139000.00
k) Gratuity (Provision)	0.00	0.00	0.00	-2925985.00	0.00	-2925985.00
l) Others - Medical Expenses	3732526.00	0.00	3732526.00	2876755.00	0.00	2876755.00
TOTAL	278220209.25	0.00	278220209.25	247300432.00	0.00	247300432.00

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SCHEDULE 16 - ACADEMIC EXPENSES

[Amount in ₹]

	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a)Laboratory expenses		0.00	0.00		0.00	0.00
b)Field work/Participation in Conferences	21662.00	0.00	21662.00		0.00	0.00
c)Expenses on Seminars/Workshops		0.00	0.00	56500.00	0.00	56500.00
d) Honararium (Foreign Examiners, etc)	1458950.80	0.00	1458950.80	490994.28	0.00	490994.28
e)Examination	0.00	0.00	0.00	0.00	0.00	0.00
f)Student Welfare expenses	0.00	0.00	0.00	0.00	0.00	0.00
g)Admission expenses	0.00	0.00	0.00	0.00	0.00	0.00
h)Convocation expenses	1808329.00	0.00	1808329.00	852478.00	0.00	852478.00
i) Publications		0.00	0.00	0.00	0.00	0.00
j)Stipend/means-cum-merit scholarship	50687689.00	0.00	50687689.00	41793282.00	0.00	41793282.00
k)Subscription Expenses	787500.00	0.00	787500.00	0.00	0.00	0.00
l) Others				0.00		
i) Recurring Contingency	2073753.00	0.00	2073753.00	961900.00	0.00	961900.00
ii) Students Activities	5043731.00	0.00	5043731.00	497708.46	0.00	497708.46
iii) Other Academic Activities	50000.00	0.00	50000.00		0.00	0.00
iv) Consumables	534869.00	0.00	534869.00	642000.00	0.00	642000.00
v) CSAB Administrative expenses	383400.00	0.00	383400.00		0.00	0.00
vi) Medical Expenses - Students	977097.00	0.00	977097.00	271539.00	0.00	271539.00
vii) CCMT - Admission expenses	84650.00	0.00	84650.00	0.00	0.00	0.00
TOTAL	63911630.80	0.00	63911630.80	45566401.74	0.00	45566401.74

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SCHEDULE 17 - ADMINISTRATIVE AND GENERAL EXPENSES

[Amount in ₹]

	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
A. Infrastructure						
a)Electricity and power	7080938.00	0.00	7080938.00	4367823.00	0.00	4367823.00
b)Water charges	2712870.00	0.00	2712870.00	1398680.00	0.00	1398680.00
c)Insurance	0.00	0.00	0.00	0.00	0.00	0.00
d)Rent, Rates and Taxes (including property tax)	40261325.00	0.00	40261325.00	59033508.00	0.00	59033508.00
Total (A)	50055133.00	0.00	50055133.00	64800011.00	0.00	64800011.00
B. Communication						
e)Communication and Transportation	1973538.00	0.00	1973538.00	2170816.40	0.00	2170816.40
f)Telephone, Fax and Internet Charges	689187.00	0.00	689187.00	321122.00	0.00	321122.00
Total (B)	2662725.00	0.00	2662725.00	2491938.40	0.00	2491938.40
C. Others						
g)Printing and Stationery (consumption)		0.00	0.00	163800.00	0.00	163800.00
h)Travelling and Conveyance Expenses/TA/DA	1351597.00	0.00	1351597.00	541719.00	0.00	541719.00
i)Meeting Expenses	845558.00	0.00	845558.00	577970.00	0.00	577970.00
j)Auditors Remuneration	442565.00	0.00	442565.00	0.00	0.00	0.00
k)Professional Charges	1216020.00	0.00	1216020.00	492451.00	0.00	492451.00
l) Advertisement and Publicity	988737.00	0.00	988737.00	1488072.00	0.00	1488072.00
m)Magazines & Journals	0.00	0.00	0.00	0.00	0.00	0.00
n)Others (as per details below)			0.00			0.00
Consumables - Transit House	63500.00	0.00	63500.00	0.00	0.00	0.00
Accommodation Expenses	277974.00	0.00	277974.00	0.00	0.00	0.00
Contingencies	662301.00	0.00	662301.00	159852.00	0.00	159852.00
Recruitment Expenses	0.00	0.00	0.00	614692.00	0.00	614692.00
Miscellaneous Expenses	974796.00	0.00	974796.00	471378.00	0.00	471378.00
Institute Day expenses (Annual Day)	1396557.00	0.00	1396557.00	648061.00	0.00	648061.00
Recurring expenses for Departments	21989127.00	0.00	21989127.00	4500284.00	0.00	4500284.00
Postage and Telegram	2997.00	0.00	2997.00	2148.00	0.00	2148.00
Patent Administration Charges	0.00	0.00	0.00	108790.00		108790.00
Institute Overhead	0.00	0.00	0.00		0.00	0.00
Total (C)	30211729.00	0.00	30211729.00	9769217.00	0.00	9769217.00
	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL (A+B+C)	82929587.00	0.00	82929587.00	77061166.40	0.00	77061166.40

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 18 TRANSPORTATION EXPENSES

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
1 Vehicles (owned by Institution)						
a) Running expenses	214567.00	0.00	214567.00	173294.00	0.00	173294.00
b) Repairs & maintenance	0.00	0.00	0.00	0.00	0.00	0.00
c) Insurance expenses	0.00	0.00	0.00	0.00	0.00	0.00
2 Vehicles taken on rent/lease						
a) Rent/lease expenses	17627055.00	0.00	17627055.00	4720532.00	0.00	4720532.00
3 Vehicle (Taxi) hiring expenses	0.00	0.00	0.00	0.00	0.00	0.00
Total	17841622.00	0.00	17841622.00	4893826.00	0.00	4893826.00

SCHEDULE 19 — REPAIRS & MAINTENANCE

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a) Buildings	0.00	0.00	0.00	0.00	0.00	0.00
b) Furniture & Fixtures	0.00	0.00	0.00	0.00	0.00	0.00
c) Plant & Machinery	0.00	0.00	0.00	0.00	0.00	0.00
d) Office Equipment	0.00	0.00	0.00	0.00	0.00	0.00
e) Computers	0.00	0.00	0.00	0.00	0.00	0.00
f) Laboratory & Scientific equipment	0.00	0.00	0.00	0.00	0.00	0.00
g) Audio Visual equipment	0.00	0.00	0.00	0.00	0.00	0.00
h) Cleaning Material & Services	0.00	0.00	0.00	0.00	0.00	0.00
i) Book binding charges	0.00	0.00	0.00	0.00	0.00	0.00
j) Gardening	0.00	0.00	0.00	0.00	0.00	0.00
k) Estate Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
l) Others - Security and Cleaning	71551652.00	0.00	71551652.00	60585342.00	0.00	60585342.00
m) Others - Repairs and Maintenance	15078297.00	0.00	15078297.00	4385886.00	0.00	4385886.00
Total	86629949.00	0.00	86629949.00	64971228.00	0.00	64971228.00

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SCHEDULE 20 — FINANCE COSTS

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a) Bank charges	65211.57	0.00	65211.57	59578.45	0.00	59578.45
b) Others (specify)	0.00	0.00	0.00	0.00	0.00	0.00
Total	65211.57	0.00	65211.57	59578.45	0.00	59578.45

SCHEDULE 21 - OTHER EXPENSES

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a) Provision for Bad and Doubtful Debts/Advances	0.00	0.00	0.00	0.00	0.00	0.00
b) Irrecoverable Balances Written - off	0.00	0.00	0.00	0.00	0.00	0.00
c) Grants/Subsidies to other institutions/organizations	0.00	0.00	0.00	0.00	0.00	0.00
d) Others (specify)	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00

SCHEDULE 22: PRIOR PERIOD EXPENSES

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
1 PDA expenses	0.00	0.00	0.00	431165.00	0.00	431165.00
2 Salary expenses	0.00	0.00	0.00	610656.00	0.00	610656.00
3 Rent	350000.00	0.00	350000.00	0.00	0.00	0.00
4 Transportation expenses	0.00	0.00	0.00	0.00	0.00	0.00
5 Repairs & Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
6 Communication and Transport	0.00	0.00	0.00	562575.00	0.00	562575.00
6 Depreciation- As per Schedule 4	0.00	0.00	0.00	0.00	0.00	0.00
Total	350000.00	0.00	350000.00	1604396.00	0.00	1604396.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 23

SIGNIFICANT ACCOUNTING POLICIES

1. BASIS FOR PREPARATION OF ACCOUNTS

The accounts are prepared under the Historical Cost Convention unless otherwise stated and generally on the Accrual method of accounting.

2. REVENUE RECOGNITION

2.1 Fees from Students (except Tuition Fees), Sale of Admission Forms, Royalty and Interest on Savings Bank account are accounted on cash basis. Tuition Fees collected separately for each semester is accounted on accrual basis.

2.2 Income from Land, Buildings and Other Property and Interest on Investments are accounted on accrual basis.

3. FIXED ASSETS AND DEPRECIATION

3.1 Fixed assets are stated at cost of acquisition including inward freight, duties and taxes and incidental and direct expenses related to acquisition, installation and commissioning.

3.2 Gifted / Donated assets are valued at the declared value where available; if not available, the value is estimated based on the present market value adjusted with reference to the physical condition of the asset. They are set-up by credit to Capital Fund and merged with the Fixed Assets of the Institution. Depreciation is charged at the rates applicable to the respective assets.

3.3 Books received as gifts, are valued at selling prices printed on the books. Where they are not printed, the value is based on assessment.

3.4 Fixed assets are valued at cost less accumulated depreciation. Depreciation on fixed assets is provided on Straight line method, at the following rates:

Tangible Assets:

1. Land	0%
2. Site Development	0%
3. Buildings	2%
4. Roads & Bridges	2%
5. Tube wells & Water Supply	2%
6. Sewerage & Drainage	2%
7. Electrical Installation and equipment	5%
8. Plant & Machinery	5%
9. Scientific & Laboratory Equipment	8%
10. Office Equipment	7.5%
11. Audio Visual Equipment	7.5%
12. Computers & Peripherals	20%
13. Furniture, Fixtures & Fittings	7.5%
14. Vehicles	10%
15. Library Books & Scientific Journals	10%

Intangible Assets (amortization):

- | | |
|---------------------------|---------|
| 1. E-Journals | 40% |
| 2. Computer Software | 40% |
| 3. Patents and Copyrights | 9 years |

3.5 No depreciation has been charged on group of asset whose opening WDV is Re. 1 except any new additions in such group of assets whereby depreciation has been charged at prescribed rate for the whole year.

3.6 Where an asset is fully depreciated, it will be carried at a residual value of Re.1 in the Balance Sheet and will not be further depreciated.

3.7 Assets created out of Earmarked Funds and funds of Sponsored Projects, where the ownership of such assets vests in the Institution, are setup by credit to Capital Fund and merged with the Fixed Assets of the Institution. Depreciation is charged at the rates applicable to the respective assets. Assets created out of Sponsored Project funds, where the ownership is retained by the sponsors but held and used by the Institution are separately disclosed in the Notes on Accounts.

3.8 Assets, the individual value of each of which is Rs. 2000 or less (except Library Books) are treated as Small Value Assets, 100% depreciation is provided in respect of such assets at the time of their acquisition. However physical accounting and control are continued by the holders of such assets.

4. Intangible Assets: Patents and Copyrights, E Journals and Computer Software are grouped under Intangible Assets.

4.1 Patents: The expenditure incurred from time- to time (application fees, legal expenses etc.) for obtaining Patents is temporarily capitalised and shown as part of Intangible Assets in Balance Sheet. If application for patents is rejected, the cumulative expenditure incurred on the particular patents is written off to the Income & Expenditure Account in the year the application is rejected.

The expenditure on Patents granted is written off over a life of 9 years on a conservative basis.

4.2 Electronic Journals (E- Journals) are separated from Library Books in view of the limited benefit that could be derived from the on-line access provided. E-Journals are not in a tangible form, but temporarily capitalized and in view of the magnitude of the expenditure and the benefits derived in terms of perpetual knowledge acquired by the Academic Departments, Teachers and Research Scholars; Depreciation is provide in respect of E-Journals at a higher rate of 40% as against depreciation of 10% provided in respect of Library Books.

4.3 Expenditure on acquisition of software has been separated from computers and peripherals, as apart from being intangible assets, the rate of obsolescence in respect of these is very high. Depreciation is provided in respect of software at a higher rate of 40% as against depreciation of 20% provided in respect of Computers & Peripherals.

5. RETIREMENT BENEFITS

Retirement benefits i.e., gratuity and leave encashment are provided on the basis of actuarial valuation. Capitalized Value of pension and gratuity received from previous employers of the Institution's employees, who have been absorbed in the Institution, is credited to the respective Provision Accounts. Pension contribution received in respect of employees on deputation is also credited to the Provision for Pension Account. The Actual payments of Pension, Gratuity and Leave encashment are debited in the Accounts to the respective provisions. Other retirement benefits viz. Deposit Linked Insurance, Contribution to New Pension Scheme, Medical reimbursement to retired employees and Travel to Home Town on retirement is accounted on accrual basis (actual payments plus outstanding bills at the end of the year).

6. INVESTMENTS

- Long term investments are carried at their cost or face value whichever is lower. However any permanent diminution in their value as on the date of the Balance Sheet is provided for.
- Short term investments are carried at their cost or market value (if quoted) whichever is lower.

7. EARMARKED/ENDOWMENT FUNDS

The following long terms funds are earmarked for specific purposes. Each of the funds has a separate bank account. Those with large balances also have investments in Government Securities, Debentures and Bonds and Term Deposits

with Banks. The assets created out of Earmarked Funds where the ownership Vests in the Institution, are merged with the assets of the Institution by crediting an equal amount to the Capital Fund. The balance in the respective funds is carried forward and is represented on the assets side by the balance at Bank, Investments and accrued interest.

7.1 Corpus Fund was established in 2012. Institution's share of Consultancy fees and contributions from Research Projects are treated as additions to Corpus Fund. Income from investments of the fund is added to the Fund. The Corpus Fund is utilized for both Revenue and Capital expenditure based on the guidelines issued by the Board of Governor of the Institution from time to time. The assets created out of the Corpus Fund are merged with the assets of the Institution by crediting an equal amount to the Capital Fund. The balance in the Corpus Fund which is carried forward is represented by the balance in Bank Accounts, Investment in Fixed Deposits and Accrued Interest on Investment.

8. GOVERNMENT AND GOI GRANTS

8.1 Government Grants are accounted on realization basis. However, where a sanction for release of grant pertaining to the financial year is received before 31 " March and the grant is actually received in the next financial year, the grant is accounted on accrual basis and an equal amount is shown as recoverable from the Grantor.

8.2 To the extent utilized towards capital expenditure, (on accrual basis) government grants and grants from GOI are transferred to the Capital Fund.

8.3 Government and GOI grants for meeting Revenue Expenditure (on accrual basis) are treated, to the extent utilized, as income of the year in which they are realized.

8.4 Unutilized grants (including advances paid out of such grants) are carried forward and exhibited as a liability in the Balance Sheet.

9. INVESTMENTS OF EARMARKED FUNDS AND INTEREST INCOME ACCRUED ON SUCH INVESTMENTS:

To the extent not immediately required for expenditure, the amounts available against such funds are invested in approved Securities & Bonds or deposited for fixed term with Banks, leaving the balance in Savings Bank Accounts.

Interest received, interest accrued and due and interest accrued but not due on such investments are added to the respective funds and not treated as income of the Institution.

10. SPONSORED PROJECTS

10.1 In respect of ongoing Sponsored Projects, the amounts received from sponsors are credited to the head "Current Liabilities and Provisions -Current Liabilities -Other Liabilities -Receipts against ongoing sponsored projects." As and when expenditure is incurred /advances are paid against such projects, or the concerned project account is debited with allocated overhead charges, the liability account is debited. Overhead charges recovered from projects are credited to the corpus fund in accordance with the decision of the Board of Governors and Finance Committee of the Institute.

10.2 In addition to the Earmarked Fund for the Junior Research Fellowships funded by the Institute Grants Commission, Fellowships and Scholarships are also sponsored by various organizations. These are accounted in the same way as Sponsored Projects except that the expenditure generally is only on disbursement of Fellowships and Scholarships, which may include allowances for contingent expenditure by the Fellows and scholars.

10.3 The Institution itself also awards Fellowships and Scholarships, which are accounted as Academic expenses.

11. INCOME TAX

The income of the Institution is exempt from Income Tax under Section 10(23c) of the Income Tax Act. No provision for tax is therefore made in the accounts.

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 24

CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS

1. CONTINGENT LIABILITIES:

- 1.1 As on 31st March, 2023, 1 numbers of Court Case filed against the Institution, by former / present employees, tenants and contractors and arbitration cases with contractors, were pending for decisions. The suits filed by employees were establishment - related viz promotions, increments, pay scales, termination etc. The quantum of the claims is not ascertainable. The Claim in the suits and arbitration cases by contractors amounted To Rs. 5.06 lakhs (Previous Year Rs. NIL)
- 1.2. Letters of credit established by the Bank on behalf of the Institution and outstanding on 31.03.22 Rs. **NIL**
- 1.3 Disputed demands in respect of Income Tax Rs. NIL (Previous Year Rs **NIL**).

2. FIXED ASSETS:

- 2.1 Additions in the year to Fixed Assets in Schedule 4 include Assets purchased out of Capital Grants Government of India (OS- 35)The Assets have been created by establishing Credit to Capital Fund to the tune of equivalent fund.
- 2.2 Fixed assets as set out in Schedule 4 do not include assets purchased out of funds of sponsored projects, held and used by the Institution, as project contracts include stipulations that all such assets purchased out of projects funds will remain the property of the sponsors.

The details of such assets are:-

Assets	Rate of Depreciation	Original cost as on 1.4.2022	Additions during the year	Total	Notional Depreciation on opening balance	Notional Depreciation on additions during the year	Total Notional Depreciation	Total Book value on 31. 3. 2023
		A	B	C=A+B	D	E	F=D+E	G=C-F
Tangible Assets								
Scientific Equipment	8%	75,01,166.00	196040.00	7697206.00	6,00,093.28	15683.20	615776.48	7081429.52
Computer	20%	8,665.00	446420.00	455085.00	1733.00	89284.00	91017.00	364068.00
Furniture	7.50%	10,830.00	-	10,830.00	812.25	-	812.25	10,017.75
Total		7520661.00	642460.00	8163121.00	602638.53	104967.20	707605.73	7455515.27

3. PATENTS:

An accounting policy in respect of expenditure on Patents is in place as approved by the Board of Governors of the Institute. The accounting for patents have been done as per the policy and depreciation provided for as per rates prescribed.

4. DEPOSIT LIABILITIES:

The amount outstanding as Earnest Money Deposit & Security Deposits amounts to Rs.20189183.05 as on 31.03.2023.

5. EXPENDITURE IN FOREIGN CURRENCY:

- Travel– Nil
- Others – 9.62 lakhs

6. SUSPENSE ACCOUNT

As on 31st March, 2023 standing at **NIL**.

7. CURRENT ASSETS, LOANS, ADVANCES AND DEPOSITS

In the opinion of the Management, the current assets, Loans, Advances and Deposits have a value on realization in the ordinary course, equal at least to the aggregate amount shown in the Balance Sheet.

8. The details of balances in Saving Bank Accounts, Current Accounts and Fixed Deposit Accounts with Banks are enclosed as attachment '**D**' to the **Schedule of Current Assets**.
9. Previous year's figures have been regrouped and re-classified wherever necessary.
10. Figures in the Final accounts have been rounded off to the nearest rupee.
11. Schedules 1 to 22 and underlying annexure are annexed to and form an integral part of the Balance Sheet at 31stMarch, 2023 and the Income & Expenditure account for the year ended on that date.

12. CURRENT LIABILITIES:

Tuition Fee received in advance for the month of April 2022 to June 2023 has been shown as "Fees received in Advance- Tuition Fee" under Current liabilities in Schedule - 9. All other Academic Receipts have been booked on cash basis.

13 CAPITAL COMMITMENTS

The value of contracts remaining to be executed on Capital Account and not provided for amounts to **Rs. 216.27 Lakhs as on 31.03.23.**

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

ANNEXURE A : DETAILS OF EMD & SECURITY DEPOSIT AS ON 31-03-2023

[Amount in ₹]

S.No	Name of the Firm / Company	Amount
1	Earnest Money Deposit	3941015.00
2	PBG	88100.00
3	Security Deposit	16160068.05
Total		20189183.05

ANNEXURE B : DETAILS OF STATUTORY LIABILITIES AS ON 31-03-2023

[Amount in ₹]

Sl.No.	Particulars	Amount
1	TDS - Contracts	286924.48
2	VAT	27967.00
3	TDS - Pay and Allowances	2561075.00
4	TDS - GST	822370.00
5	Professional Tax Payable	366600.00
6	Labour Cess	820144.00
7	GST	168886.30
8	Forest Royalty	1762922.00
Total		6816888.78

ANNEXURE C : DETAILS OF OTHER LIABILITIES AS ON 31-03-2023

[Amount in ₹]

Sl.No.	Particulars	Amount
1	Audit Remuneration Payable	851474.00
2	Book Purchase	3339645.00
3	Bank Interest payable to MHRD	25265355.00
4	Communication & Transportation payable	28043.00
5	CSAB Administrative Charges	505515.00
6	Electricity Charges Payable	1256312.00
7	Excess Fee Refundable	798060.00
8	External Agency Funds- For exams, conference, seminar, etc.	0.00
9	Hostel Mess Fees	13733603.00
10	NSDL Service Charges payable	5679.00
11	PDA Advance (2018-19)	400.00
12	Postage and Telegram payable	2997.00
13	Rent Payable	13999296.00
14	Returned Cheques	539069.10
15	Salary Payable	16629601.00
16	Security, Cleaning Charges Payable	6011838.00
17	Stale Cheques	370100.51
18	Sundry Receipts	202760.00
19	SVNIT Surat	124375.00
20	Telephone Expenses Payable	419415.00
21	Tuition fee refundable to SC/ST	2083335.00
22	Vehicle Hiring Charges payable	3509709.00
23	Temporary Advance (2016-17)	1440.00
24	Water Charges Payable	366600.00
Total		90044621.61

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

ANNEXURE D : DETAILS OF BALANCES IN SAVINGS BANK / CURRENT / FIXED DEPOSIT ACCOUNTS WITH BANKS AS ON 31-03-2023

[Amount in ₹]

Sl.No.	Particulars	Purpose	Account No.	Amount
	Current Bank Accounts			
	Bank of India	Project	503010210000005	5621.54
	Indian Bank		7267841597	22174.25
	Union Bank of India	Transit House	101221010000038	15921.34
	State Bank of India	SBI Collect - Fees Collection	35711256956	95406500.09
	State Bank of India	Holding Account	41218128544	31098616.25
	State Bank of India	Main Account	32047142365	121166733.92
	Total (A)			247715567.39
	Savings Bank Accounts			
	Canara Bank	General Account	1184101015456	13787680.00
	ICICI Bank	NITM Fee (IRG)	332701000053	84920135.00
	ICICI Bank	Corpus Fund	747701000081	128603283.00
	ICICI Bank	Sustainability Fund	332701000955	4461074.00
	State Bank of India	Hostel Mess Account	37768297245	9305160.78
	State Bank of India	SBI FITI	40036592826	6962.00
	State Bank of India	SBI Power Jyoti - Fees Collection	34973520929	428431.00
	State Bank of India	Recruitment	38070817950	2577498.46
	State Bank of India	Project and Consultancy	37935741794	29983.00
	State Bank of India	MEITY	40002051159	776474.50
	UCO Bank	Fees Account	23730110003381	16167108.46
	UCO Bank	Project - Khwairakam	23730110013106	6709.50
	UCO Bank	Project - Paresh	23730110015872	-1315.36
	UCO Bank	Project - K Dutta - DEITY	23730110016640	1270.00
	UCO Bank	Project- RECPTL	23730110019580	228318.13
	UCO Bank	Project - Visvesvaraya	23730110015353	207697.89
	UCO Bank	Research and Development	23730110010280	64637981.85
	UCO Bank	Gitish K Dutta	23730110015209	12028.83
	UCO Bank	Gitish K Dutta	23730110015889	87818.15
	UCO Bank	Rajarshi Ray	23730110016657	438.75
	Indian Overseas Bank	General Account	05410001042010	3975146.00
	Total (B)			330219883.94
	Term Deposits			
	UCO Bank			17936415.00
	Canara Bank			105802084.00
	ICICI Bank			73000000.00
	Indian Overseas Bank			62054425.00
	RBL			19000000.00
	Yes Bank			57000000.00
	Investement - Trainee Teachers			2380847.00
	Total (C)			337173771.00
	Total (A+B+C)			915109222.33

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2023

[Amount in ₹]

RECEIPTS		Current Year	Previous Year	PAYMENTS		Current Year	Previous Year
I.	Opening Balance			I.	Expenses		
	a) Cash Balances				a) Staff Payments & Benefits	232432172.00	191426399.00
	b) Bank Balance				b) Academic Expenses	60569381.80	45659136.48
	i. In Current accounts	117863545.16	122280855.11		c) Administrative Expenses	77794102.00	63082241.40
	ii. In Deposit accounts	312006324.07	1023848616.00		d) Transportation Expenses	14331913.00	3374719.00
	iii. Savings accounts	778858241.00	333946188.02		e) Repairs & Maintenance	76762318.00	65004566.00
II.	Grants Received				f) Prior period expenses	350000.00	562575.00
	a) From Government of India	658900000.00	729354000.00		g) Finance Cost	65211.57	59578.45
	b) From State Government	0.00		II.	Payments against Earmarked/ Endowment Funds	0.00	0.00
	c) From others	122585731.80	98420482.35	III.	Payments against Sponsored Projects/Schemes	364703.72	5808494.05
				IV.	Payments against Sponsored Fellowships/Scholarships	54800.00	465100.00
				V.	Investments and Deposits made		
III.	Academic Receipts	71296964.09	75612245.00		a) Out of Earmarked/ Endowments funds	0.00	0.00
IV.	Receipts against Earmarked/ Endowment Funds	3681655.00	3429266.00		b) Out of own funds (Investments- Others)	0.00	0.00
V.	Receipts against Sponsored Projects/Schemes	0.00	0.00	VI.	Term Deposits with Scheduled Banks	0.00	0.00
VI.	Receipts against sponsored Fellowships and Scholarships	0.00	0.00	VII.	Expenditure on Fixed Assets and Capital Works - in- Progress		
VII.	Income on Investments from				a) Fixed Assets	243171388.00	184163741.00
	a) Earmarked/Endowment funds	0.00	0.00		b) Capital Works- in- Progress	315370891.00	429445200.00
	b) Other investments	0.00	0.00	VIII.	Other Payments including statutory payments	162450508.24	174018094.47
VIII.	Interest received on						
	a) Bank Deposits	0.00	2086509.00	IX.	Refunds of Grants	2879376.00	56176945.60
	b) Loans and Advances	0.00	0.00	X.	Deposits and Advances	24841060.00	9264057.00
	c) Savings Bank Accounts	3745013.00	0.00	XI.	Other Payments	618775.00	5001089.00
	d) Term deposits	23195462.00	22831093.00				
IX.	Investments encashed	0.00	13959342.00	XII.	Closing balances		
X.	Term Deposits with Scheduled Banks encashed	0.00	0.00		a) Cash in hand	0.00	0.00
XI.	Other income (including Prior Period Income)	1275979.00	1701119.00		b) Bank balances		
XII.	Deposits and Advances	20727864.54	7818566.00		In Current Accounts	247715567.39	117863545.16
XIII.	Miscellaneous Receipts including Statutory Receipts	0.00	91.00		In Savings Accounts	330219883.94	312006324.07
XIV.	Any Other Receipts	13029043.00	6951674.20		In Deposit Accounts	337173771.00	778858241.00
XV.	Provisions	0.00	0.00				
	TOTAL	2127165822.66	2442240046.68		TOTAL	2127165822.66	2442240046.68

For NIT Meghalaya

Director

Registrar

Assistant Registrar



National Institute of Technology Meghalaya

Bijni Complex, Laitumkrah, Shillong 793003