



**NIT Meghalaya**

# MEGH-DARPAN

**NITM @ October, 2024**



## **Contact us**

### **Permanent Campus**

**National Institute of Technology Meghalaya  
Saitsohpen, Sohra (Cherrapunji), East Khasi  
Hills District-793108, Meghalaya, India**

### **Temporary Campus**

**National Institute of Technology Meghalaya  
Bijni Complex, Laitumkhrach  
Shillong-793003, Meghalaya, India  
Phone: 0364-2501294 | Fax: 0364-2501113**





# **National Institute of Technology Meghalaya**

(An Institute of National Importance)

# **Megh-Darpan**

**INSTITUTE MAGAZINE  
NIT MEGHALAYA**

**First Edition**

**OCTOBER, 2024**

# MESSAGE FROM CHAIRMAN, BOG SHRI SUNIL ALAGH



Dear Students, Faculty, Alumni, and all stakeholders of National Institute of Technology Meghalaya.

It is my privilege to extend warm greetings to you all through this first edition of our Institute's magazine, "*Megh-Darpan*". As the Chairman of the Board of Governors, I have witnessed first-hand the remarkable progress the National Institute of Technology, Meghalaya, continues to make in its pursuit of excellence in education, research, and innovation. The past year has been a testament to the resilience, dedication, and hard work of our faculty and students. Despite the challenges faced globally, our Institute has stood strong, adapting to new ways of learning, collaborating, and growing. This adaptability reflects the core strength of our community, a commitment to embracing change while upholding the values that have long defined our Institution.

As we move forward, the Board of Governors remains dedicated to supporting initiatives that foster innovation, inclusivity, and academic rigour. Our goal is to empower the next generation of leaders, thinkers, and innovators who will contribute meaningfully to society. With the rapidly evolving landscape of global industries and technologies, it is essential that we continue to provide an environment where creativity, critical thinking and collaboration thrive.

I would like to commend the editorial team for their dedication to capturing the essence of the National Institute of Technology, Meghalaya, through this magazine. It is through such platforms that we celebrate the achievements of our students, faculty, alumni, and reflect on the journey that lies ahead.

To our students: I encourage you to seize every opportunity, learn from every experience, and be inspired to reach greater heights. You are the future of this Institution and indeed, the future of our society.

To our faculty: Your unwavering dedication and passion for nurturing young minds have always been the bedrock of this Institution's success. We are deeply grateful for your contributions.

To our alumni: You are our ambassadors and your accomplishments around the world continue to bring pride to National Institute of Technology, Meghalaya. We look forward to your continued engagement and support as we build a brighter future together.

In conclusion, I am confident that with collective effort and a shared vision, we will continue to uphold the tradition of excellence that has become synonymous with National Institute of Technology, Meghalaya.

Thank you and best wishes for a successful year ahead.

Warm regards,  
Shri Sunil Alagh,  
Chairman, Board of Governors,  
National Institute of Technology, Meghalaya

# MESSAGE FROM DIRECTOR PROF. PINAKESWAR MAHANTA



Dear Readers,

I am thrilled to introduce the inaugural edition of our Institute Magazine! This publication represents not just a collection of articles and achievements, but a vibrant tapestry of our Institute's spirit, innovation, and dedication.

As we embark on this exciting journey together, our magazine aims to highlight the remarkable work of our faculty, the creativity of our students, and the invaluable contributions of our alumni. Each page reflects our commitment to academic excellence and personal growth, showcasing stories that inspire and motivate.

In this first edition, you will find insights into our latest initiatives, interviews with thought leaders, and a spotlight on events that have shaped our institution. It is our hope that these narratives not only celebrate our successes but also foster a sense of belongingness and engagement among all members of our Institute.

I encourage you to read, reflect, and share your thoughts with us. Your feedback is invaluable as we strive to make each edition better than the last. Together, let's continue to nurture a culture of collaboration, innovation, and excellence.

Thank you for being an integral part of our journey. Enjoy the read!

Warm regards,  
Prof. Pinakeswar Mahanta  
Director  
National Institute of Technology Meghalaya

# PATRON'S NOTE

## PROF. HARISH CHANDRA DAS



Dear Readers,

Welcome to the first edition of *Megh-Darpan*. As we navigate the rapidly evolving world of education and research, I am both honoured and thrilled to present you with a collection of achievements and insights of the stakeholders of NIT Meghalaya that underscore the transformative changes reshaping our academic landscape.

In this first issue, we spotlight a range of contents that reflect the dynamic spirit of our institute. From pioneering research breakthroughs to innovative teaching methodologies, our aim is to provide you with a window into the cutting-edge developments that are driving progress in the academics and research environment of NIT Meghalaya.

One of the central features of this first edition is about the development of our permanent campus in Sohra, Meghalaya, development of new Centres, Faculty and student achievements, events organised, alumni messages, placement records, etc. Through detailed description and interviews with key figures, we delve into how this initiative is addressing current challenges and setting new standards in the respective fields.

At *Megh-Darpan*, our mission is to illuminate the remarkable achievements and ongoing efforts of the students and faculties of the Institute. As you explore this issue, I hope you find a renewed sense of purpose in the work we all contribute to.

Thank you for your continued support and engagement. Your feedback and involvement are invaluable to us as we strive to advance academics and research.

With warm regards,  
Prof. Harish Chandra Das  
Patron, *Megh-Darpan*

# About NIT Meghalaya

The National Institute of Technology (NIT) Meghalaya is one of the thirty-one NITs in India established under the NIT Act 2007 (Amended 2012) of the Parliament of India as Institutes of National Importance with full funding support from the Ministry of Education (Shiksha Mantralaya), Government of India.

## The Vision:

A Centre of Excellence vibrant with academic activities and bubbling with youthful creative energy, making significant contributions 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 in a clean and healthy environment.

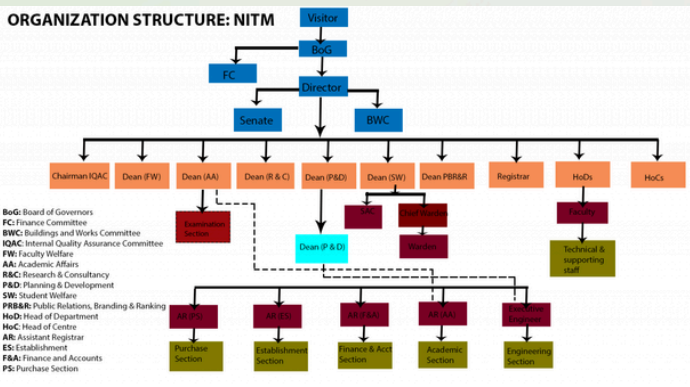
To engage in creation of knowledge and development of technologies through effective research programs.



BOG	
Shri Sunil Alagh, Chairman and Managing Director, SKA Advisor Pvt. Ltd., Mumbai	Chairman, NIT Meghalaya
Prof. Pinakeswar Mahanta, Director, NIT Meghalaya	Member
Ms. Saumya Gupta, Joint Secretary (NITs), Department of Higher Education, Ministry of Education, New Delhi	Member
Shri Sanjog Kapoor, JS & FA, Department of Higher Education, Ministry of Education, New Delhi	Member
Shri Wallamphang Roy, MD, Meghalaya Power Carriers (India) Pvt. Ltd.	Member
Shri Medrickson Tariang, Retired Chief Engineer, PWD (Roads), Govt. of Meghalaya, Shillong	Member
Director, IIT Guwahati	Member
Prof. Ayon Bhattacharjee, Department of Physics, NIT Meghalaya	Member
Prof. Deba Kumar Sarma, Department of Mechanical Engineering, NIT Meghalaya	Member
Dr. Bhaskarjyoti Chakravarty, Registrar, NIT Meghalaya	Secretary

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Prof. Mousumi Guha Banerjee, English Literature, EFLU	Member
Prof. Saurabh Basu, Dept. of Physics, IIT Guwahati	Member
Prof. Ayon Bhattacharjee, Dept. of Physics, NIT Meghalaya	Member
Prof. C. Marthong, CE Dept., NIT Meghalaya	Member
Prof. Harish Chandra Das, Dean (PRBR), NIT Meghalaya	Member
Prof. Deba Kumar Sarma, Dean (PD), NIT Meghalaya	Member
Prof. Anup Dandapat, Dean (AA), NIT Meghalaya	Member
Prof. Saikat Mukherjee, Dean (FW), NIT Meghalaya	Member
Prof. Gitish Kishor Dutta, CB Dept., NIT Meghalaya	Member
Prof. D. S. Roy, Dean (RC), NIT Meghalaya	Member
Prof. P. S. Mangang, Dean (SW), NIT Meghalaya	Member
Dr. Bhaskarjyoti Chakravarty, Registrar, NIT Meghalaya	Member Secretary

## ORGANIZATION STRUCTURE: NITM



## Departments and Programmes

Sl. No.	Departments/Centres	Programmes Offered		
		UG	PG	PhD
1.	Computer Science and Engineering	B. Tech	M. Tech	Ph. D
2.	Electronics and Communication Engineering	B. Tech	M. Tech	Ph. D
3.	Electrical Engineering	B. Tech	M. Tech	Ph. D
4.	Mechanical Engineering	B. Tech	M. Tech	Ph. D
5.	Civil Engineering	B. Tech	M. Tech	Ph. D
6.	Physics	-	M. Sc.	Ph. D
7.	Chemical and Biological sciences	-	M. Sc.	Ph. D
8.	Mathematics	-	M. Sc.	Ph. D
9.	Humanities and Social Sciences	-	-	Ph. D
10	Centres (* including Central Library, Central Workshop)	(i) Centre for Innovation, Incubation and Entrepreneurship		
		(ii) Design Innovation Centre		
		(iii) Centre for International Relation		
		(iv) Centre for Robotics and Mechatronics		
		(v) Centre for Technology Enabled Learning		
		(vi) Centre for Career Development		

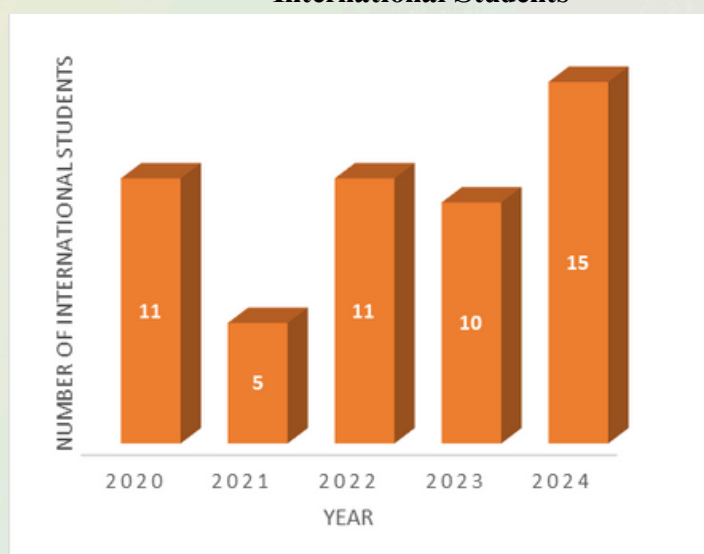
### Present Student Strength

Programme	Male	Female	Total	
B.Tech	466	152	618	
M.Tech	Full Time	21	14	33
	Part Time	2	0	2
M.SC	31	30	61	
Ph.D	Full Time	89	52	139
	Part Time	76	22	103
Project Fellow	8	6	14	
<b>Grand Total</b>	<b>693</b>	<b>276</b>	<b>970</b>	

Faculty strength - 70

Supporting strength - 82

### International Students



Presently 40 International students; primarily from South Asian countries including Bangladesh, Nepal, Bhutan, Sri Lanka among others through various agencies like ICCR, Study-in-India, and DASA.

## Admissions to the Various Programmes During 2024-25

- 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.

Programme	Admission through	Full Time	Part Time	Programme Total
B.Tech	JoSAA/CSAB	153	NA	167
	ICCR/SII	14		
	DASA	0		
M.Tech	CCMT	19	NA	65
	Institute Mode	29	4	
	Institute B.Tech	13		
	QIP	NA		
	ICCR		NA	
M.Sc	CCMN	36	NA	60
	Institute Mode	24		
	ICCR	0		
	DASA	0		
Ph.D	Institute Mode	45	3	48
	QIP	NA		

Total number of students intake.

### Notable Achievements of the Institute:

- NIT Meghalaya has been ranked 68th in the National Institutional Ranking Framework (NIRF), 2024, in the Engineering category, a testament to the hard work and dedication of our faculty, students, and staff. Among the newer NITs, we stand second, and in the Northeast region, we rank third, following IIT Guwahati and NIT Silchar.
- NIT Meghalaya has been placed at 72nd rank in the NIRF rankings for 2023.
- NIT Meghalaya has been ranked 16th among the top 25 Govt. engineering colleges by Outlook ICARE ranking 2023. NIT Meghalaya ranking by Indian Institutional Ranking Framework (IIRF) is 85 out of 170 colleges in India in 2023 and 88th position in 2024.

- 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.
- The accreditation of our Mechanical Engineering and Electrical Engineering departments by the National Board of Accreditation (NBA) until June 2027 further reinforces our commitment to maintaining high academic standards.

In the landscape of Indian higher education, the National Institute of Technology Meghalaya has been carving a niche for itself, especially with its performance in the National Institutional Ranking Framework (NIRF).



NIRF Ranking Certificate



Excellent Achievements in Higher Education

As one of the premier engineering institutes in the Northeast, NIT Meghalaya is not just a center for academic excellence but also a symbol of the region's potential in the field of technology and innovation. Established in 2010, NIT Meghalaya has quickly established itself as a hub for technical education and research. Located in the picturesque hills of Shillong, the institute offers undergraduate, postgraduate, and doctoral programs across various engineering disciplines. With its modern curriculum and state-of-the-art facilities, NIT Meghalaya aims to equip students with the skills necessary for a rapidly evolving job market.



## Implementation of NEP

The implementation of the National Education Policy (NEP) 2020 has been a transformative step for NIT Meghalaya. From the 2024-25 academic session, we have revised our curriculum to promote a multidisciplinary approach, offering students greater flexibility in choosing courses and pursuing their academic interests. The NEP emphasizes holistic education, and we have incorporated this vision by introducing a range of innovative initiatives.

- **Interdisciplinary Courses:** All Departments of the Institute offer Interdisciplinary Courses under Open Electives.
- **Multidisciplinary Projects:** The Institute offers multidisciplinary projects for both the UG & PG students by keeping two Supervisors, one from the parent branch and the other from the branch offering the multidisciplinary projects.
- **Skill Based Courses:** Soft Skills, Technical skills The Skill Based credit/audit courses is offered to the B.Tech students.
- **Long Term Internships:** 6 months long internship is allowed for the final year (7th or 8th Semester) B.Tech students.
- **Academic Bank of Credit:** NIT Meghalaya has registered for ABC (Academic Bank of Credit) to digitally store the academic credits earned from various recognized HEIs (Higher Education Institutions) so that the degrees from an HEI(Higher Education Institutions) can be awarded taking into account credits earned. Students enrolled from 2021 onwards have been asked to register in the ABC Portal.
- **Industry Internship during Summer:** B.Tech students are required to carry out two Summer Internships in the industry, once after the 4th Semester and the other after the 6th Semester.
- **Value Added Course:** The Institute offers value added courses for the B.Tech students.
- **Multiple Entry - Exit**

### Some of the key highlights of our NEP implementation

#### Flexibility to Move

Students have the flexibility to move from one branch to another

#### Flexibility to Learners

to move from one institution to another to enable them to have multi and/or interdisciplinary learning.

#### Opportunity

Students can take courses of their choice from any other branch to explore their interest.

#### Career Development

Curriculum includes the opportunity for career development of a student through a Centre.

#### Earn While Learn-Long Internship

Students are encouraged to take long term industrial internship in the 4th year.

#### Start Your Business

Students are also encouraged to explore business with the

help of technology.

#### Incubate your Idea

Beyond traditional education students are encouraged to incubate their new ideas to implement through Incubation center.

#### Engagement of Industrial Personalities

Institute engage industry personal to guide graduate students for industrial exposure.

#### Multidisciplinary and a holistic education system

Rigid structure has been replaced by flexible multidisciplinary holistic curriculum .

#### Connect students with Other Premier Institutes and Industries

In the final year students are allowed to study their final in première Institutes.

#### Micro-Credit Courses

Institutes introduces micro-credit courses beside their degree curriculum.

#### Minor Degree

Beside Major Discipline, students can take minor degree.

#### Micro-Credit Courses

Internal students will have access to a broad selection of courses spanning various disciplines, such as NCC/NSS/ Yoga /Mental Health Well being/IKS / CAD/CAM, 3-D printing, UNESCO studies, and offerings under Minor Degrees. These courses aim to broaden students' knowledge and skills, fostering holistic development alongside their primary degree pursuits. On successful completion, these courses shall be included in the Grade Sheet and in the Transcript.

#### Minor Degree

Presently, the Institute intends to offer a minor degree in Sports Engineering through the Department of Mechanical Engineering wherein the interested students can enroll and earn the minor degree in Sports Engineering. More Minor Degrees are under process.

1) AI-ML

2) Drone Technology

3) Fabrication Technology

#### Long Term Internship

- The institute encourages long-term internships for 3rd and 4th year students. Several students have been approved to undertake these internships both within India and abroad.
- With this flexibility students can take-up industrial internship/apprenticeship.
- During this time (in 4th year) students shall take online courses to complete their degree requirements.
- During Autumn-2024 semester, ~35 students have taken industrial Internship

## Student exchange with IITs & NITs: ABC/APAAR ID CREATION

In line with NEP-2020 guidelines, the institute has implemented a student exchange program with two IITs. Some current 4th-year students have been recommended to spend their final year at IIT Hyderabad. The academic sections of both institutes have formulated the modalities for credit transfer, as well as project and internship arrangements. NIT Meghalaya has made several MOUs with some leading Institutes to exchange students. Through this program, 6-final year students are now in IIT Hyderabad. They shall complete their 4th year study in IITH. Also 8-NIT Manipur students are studying in NIT Meghalaya. Some of the students are engaged in their early PhD program in IIT Jodhpur. All the UG and PG students have created ABC/APAAR ID

## Professor of Practice

NIT Meghalaya has introduced the position of Professor of Practice to bridge the gap between academia and industry, bringing real-world experience and practical knowledge into the classroom. This initiative aims to enhance the learning experience and better prepare students for their future careers.

## A Home Away From Home: Hostels and Campus Life

In the serene hills of Shillong and Sohra, NIT Meghalaya stands as a beacon of knowledge and growth. The institute is not just an academic powerhouse but also a thriving ecosystem where innovation, culture, and holistic development are at the forefront. Let's take a glimpse into the world of NIT Meghalaya and discover what makes it a unique and vibrant place for students to grow.

The institute's 14 hostels, spread across Shillong, cater to over a thousand students, ensuring a safe and comfortable living environment. With 10 hostels for boys and 4 for girls, students have access to reliable bus services for easy commuting. Each hostel is managed by dedicated wardens, ensuring that student well-being is a top priority. These spaces aren't just accommodations—they're communities where lifelong friendships are formed and memories are made.



Hostel Facilities

## Breaking Barriers: Financial Assistance for Students

NIT Meghalaya is committed to ensuring that financial constraints never stand in the way of education. The institute offers full tuition fee exemptions for students from SC, ST, and PwD categories. For those from General and OBC categories, generous tuition fee remittances are available based on family income. This allows bright minds to focus on learning and excelling, without the burden of financial worry.

Particulars	UG	M.Tech	M.Sc	PhD	Total
Any other Scholarships received	246	8	9	3	266
Full tuition Fees (For General/OBC, annual family income less than 1 lakh)	136	0	0	0	136
2/3rd Tuition fees (For General/OBC, annual family income between 1 to 5 lakh)	39	0	0	0	39

Scholarship Details



Institute Ambulance Facilities

## More Than Academics: The Student Activity Center (SAC)

What sets NIT Meghalaya apart is its vibrant extracurricular scene, spearheaded by the Student Activity Center (SAC). From sports to cultural and technical activities, SAC ensures that students have an outlet for their talents beyond academics.



Ramp Walk



Ethnic Day



Music Club

### Caring for Minds and Bodies: Health and Wellness

Recognizing the pressures of academic life, NIT Meghalaya has built a robust support system for both mental and physical wellness. The institute boasts an on-campus doctor, a nurse, and ambulances equipped with life-saving equipment, available 24/7. To ensure that mental health remains a priority, three dedicated psychologists/counsellors are always available for students.



SAC Activities

Thirteen student clubs operate under SAC, engaging students in a range of interests. The annual technical festival, Cognitia, held every November, offers a platform for young innovators to showcase their cutting-edge projects, while the cultural fest Shishir is a melting pot of talent, drawing participants from institutes across the nation. Whether you're a budding engineer, a dancer, or an artist, there's a place for you at NIT Meghalaya.

## Design Innovation Centre

### Spirit of DIC

Design Innovation Center is conceptualized to promote, nurture and advance the culture of design innovation in the country leading to significant contributions and breakthroughs impacting quality of human life.

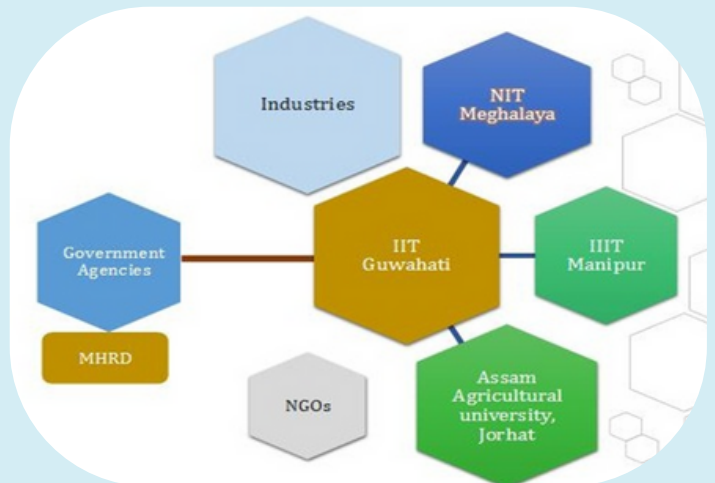
### Objectives of DIC in context of North-East

Culture of innovation and creative problem solving, knowledge sharing among stake holders Academia-social interaction Academia-industry interaction.

### Salient facts of DIC proposal

- Project became effective on 26th March 2014.
- Total budget: Rs. 10 crore
- Total budget allotted for 3 spoke institutes: Rs. 3 crore
- Total budget allotted for NIT Meghalaya: Rs. 1crore

### DIC stakeholders

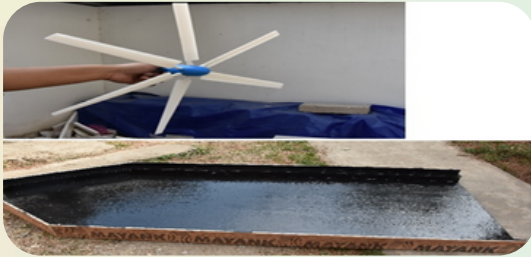


Design and Fabrication of Coconut Deshelling Machine for Domestic and Small-Scale Industry Applications

### Objectives of DIC

Design-focused innovation & creativity, culture of innovation & creative problem solving, knowledge sharing and collaboration among stake holders. Classroom projects to market/people, Academia-industry interaction & Academia-social interaction.

### Completed Project Under DIC



Design and Development of the Small Wind Turbine Combined with Solar system for Household Application



Design and Fabrication of Corn (Maize) Shelling Machine to Promote Productivity of Corn in Meghalaya



Design and Fabrication of Pineapple peeler cum slicer



A low-cost Thermoelectric Generator based energy generating probe that can be used with existing stoves in rural villages in North-East India



Design and Development of the Nano-hydro Turbine for Standalone Household Power Generation

- DIC took part and provided an exhibition stall in the "North East Start-Up and Entrepreneurs Conclave" organized by North East Centre for Technology Application and Research (NECTAR) during 27-28 March, 2024.



Shoebbox Science laboratory for class X students of Meghalaya Board (MBOSE)



Design of a shallow water turbine for energy harvesting, utilizing stream water in hilly places.



Standalone solar tea/coffee maker cum multipurpose water heating system

### LIST of Project Undergoing Under DIC

1. Design and Fabrication of temperature and humidity-controlled drying chamber for drying spices.
2. Aquifer in the Air: Exploring Atmospheric Water Harvesting in Meghalaya.
3. Empowering Farmers in Meghalaya: A Pilot Project to Revolutionize Saffron Production.
4. Development of electric rickshaw for rural hilly area

**"North-East Start-Up and Entrepreneurs Conclave" organized by North East Centre for Technology Application and Research (NECTAR) during 27-28 March, 2024**



NITM's Team



# Institute Activities

# The Counseling Centre of NIT Meghalaya

The Counseling Centre at NIT Meghalaya is dedicated to fostering a supportive environment that prioritizes mental health and well-being. Through its comprehensive range of services and activities, the Centre aims to prevent, detect, and intervene in mental health issues, empowering individuals to lead fulfilling lives. As we move forward, the Centre remains committed to evolving its programs to meet the diverse needs of our community, ensuring that everyone has access to the support they deserve.

## Diverse approaches:

### 1. Multidisciplinary Collaboration

The Counseling Centre collaborates with various departments and organizations within the institute to address mental health from different perspectives. This interdisciplinary approach enhances the reach and effectiveness of mental health initiatives.

### 2. Inclusive Programming

The Centre recognizes the diverse backgrounds of its community members. Programs are tailored to be culturally sensitive and inclusive, ensuring that all individuals feel valued and understood.



Self-Improvement Workshops



International Day for Tolerance



International Women's Day



Substance Abuse Awareness Lectures



World Suicide Prevention Day



Yoga and Mental Health Awareness Day



Swachhata hi Seva Program

## National Cadet Crops (NCC) Unit Establishment

National Institute of Technology Meghalaya has established its National Cadet Crops (NCC) unit (SD/SW) at Bijni campus from 7th June 2024 under the guidance of Prof. (Dr.) Pinakeswar Mahanta, Director, NIT Meghalaya. The unit is under the control of 2 Mghalaya Bn NCC, Shillong. Mr. Sushanta Nath, Electrical Department, has been appointed as Care Taker Officer (CTO) of the NCC NIT Meghalaya unit since 18th June 2024 and Dr. Ksh Milan Singh, Electrical Department, is the faculty-in-charge since 2nd September 2024. Initially, the total capacity of 53 cdt's has been sanctioned for both boys and girls from 7th June, 2024. Out of 53 cdt's, 18 cdt's are allotted for the first year student 2024 batch.

The National Cadet Corps (NCC) is a youth development program in India comprising of Army, Navy and Air Force under military. It aims to cultivate leadership qualities, courage, discipline, secular outlook, spirit of adventure, sportsmanship and a sense of patriotism among the youth of the country. The NCC program is open to all regular students of the educational institutions on a voluntary basis but with no liability for active military service. It provides opportunities to the youth of the country for their all-round development through a wide range of activities and training programs to become able leaders and useful citizens. The NCC plays a significant role in shaping the youth by creating awareness among the student community regarding its importance towards nation building.



Selection of NCC Cadets, NIT Meghalaya Unit on 27/08/2024

### BENEFITS OF JOINING NCC

**Skill Development:** Cadets gain valuable skills in leadership, teamwork, and personal development.

**Career Opportunities:** NCC cadets often have an advantage when applying for armed forces and other government services due to their training and discipline.

**Scholarships and Awards:** Outstanding cadets may receive scholarships and awards for their exemplary performance.

## Induction Programme 2024

NIT Meghalaya organized an induction program for the 2024 batch of B.Tech, M.Sc., and M.Tech students, featuring multiple events over several days. Highlights include a visit to the permanent campus, a yoga session by "The Art of Living," and introductions to various clubs like the Literary and Robotics Clubs etc. The program aimed to familiarize students with campus life, guide them through academic expectations, and encourage participation in extracurricular activities.



Welcoming the newly admitted B.Tech, M.Tech and M. Sc.

The Creative Arts & Culture event consisted of a few poems and works of art that the first-year students pondered on throughout the Induction Program.



Art by Priya Saha (B24CS023)

### A Walk in the Woods

I've been travelling in the wilderness of my mind  
For how long now, I know not, but it's not about  
the time,  
It's about unraveling the gravity and the weight of  
my crimes  
Away from the bustling world, hoping peace is  
what I'll find.  
Just another walk in the woods to reflect upon my  
deeds  
As my thoughts grow taller than the evergreen  
pine trees.  
It's unusually quiet, yet violent in the distance  
Because sometimes the silence speaks, but only if  
you truly listen.  
Besides the tranquility and the amity of the forest,  
Paradoxically, the woods are also home to  
plentiful horrors.  
The predatory beasts of the jungle lie in wait,  
To pounce upon the unfortunate, and to feast  
upon their faith.  
Nevertheless, in the uncertainty of the woods,  
Cowards turn brave, and the weak turn bold.  
And when you've seen the city lights peeking from  
the forestry  
The weakness turns to strength, and the silence  
turns to melodies.  
The dreary feeling of hopelessness dies and fear  
becomes ancient.  
Was long lost, but now back to the land of the  
living.  
And now, with new found hope, I sit in  
reminiscence,  
Was once a troubled mind, but a walk in the  
woods has made all the difference.

Poem by *Elijah Shylla (B24CS014)*



Art by *Minalish Hajong (B24EC011)*

### National Space Day Celebration

NIT Meghalaya celebrated National Space Day with a series of engaging activities, including a quiz and a painting competition. On this occasion, the Director and faculty members, in collaboration with the Astronomy Club, used a telescope to observe the sky, offering participants a glimpse into the wonders of space. The event highlighted the importance of space exploration and fostered enthusiasm among students and faculty alike.



Lamp lighting ceremony for the inauguration of National Space Day



Sky observation using a telescope

## Nasha Mukht Bharat Abhiyan & International Day Against Drug Abuse and Illicit Trafficking



Awareness programme

## Unnat Bharat Abhiyan Cell

Currently, NIT Meghalaya is playing an important role as Regional Coordinating Institute (RCI) in Meghalaya under Unnat Bharat Abhiyan (UBA), a flagship Program of MoE, GOI. IIT Delhi is acting as the National Coordinating Institute (NCI) for UBA related activities in association with MoE, GOI. At present, we (NIT Meghalaya) have around 11 participating institutes/colleges/universities in the state working along with us in different villages. NIT Meghalaya has adopted five villages as a part of this program: Saitsophen, Kutmadan, Mawsmmai, Kalatek and Umkhaba. The UBA Cell of the institute is working on various

objectives of the UBA Program. On a regular basis, the team is arranging Gram Sabha meetings with the representatives of these villages to understand issues related to health problems, possibilities of mushroom, millet cultivation, students' career counseling, women empowerment related aspects etc. The UBA cell is engaged. On this 7th Sept. 2024, the UBA Cell of the institute has conducted 'Orientation Program' for all the PI Institutes via hybrid mode. Also, a training on vermicomposting was conducted on 21st Sept. 2024 in Sohra for the villagers from Saitsophen and Kutmadan. The UBA Cell of the institute arranged some basic items e.g. solar lantern, water filters etc for the needy people of Kalatek area.

Recently, we have signed an MoU with Bethany Society, Shillong to facilitate the outreach activities and to fulfill the sustainable development goals (SDGs) in different adopted villages of the institute.

UBA Cell, NITM has managed to get the support of Shree M/s Gautam Construction Co. Ltd under RITES Ltd. (as a part of CSR scheme) to provide one engine boat to the Kalatek Village on the auspicious day of Gandhi Jayanti (2nd October 2024).

A special Gram Sabha (as per the directives of NCI IIT Delhi and Ministry of Panchayat Raj) was arranged by the UBA Cell on 2nd October with several activities including plantation drive, training on vermicomposting, felicitation of elderly people were conducted with the active engagement of our student volunteers.

## Gram Sabha Meeting at NIT Meghalaya Sohra Campus on 24-08-2024

UBA Cell NIT Meghalaya (as RCI) arranged the second Gram Sabha meeting on 24-8-2024 in the presence of representative of the villages from Mawsmmai, Kutmadan and Saitsophen (adopted villages under UBA) to discuss about the following aspects: career counselling of the school students, possibility of mushroom cultivation, plantation in village areas, regarding organization of workshop related to women empowerment, child health etc.



Meeting of NIT officials with the representative of the villages from Mawsmmai, Kutmadan and Saitsophen (adopted villages under UBA)

## International Day of Yoga Celebration

Yoga is a practice that connects the body, breath, and mind. It uses physical postures, breathing exercises, and meditation to improve overall health. Yoga was developed as a spiritual practice thousands of years ago. It has many benefits such as reducing stress, improving muscle flexibility, weight loss, etc. As per the office memorandum issued by the Department of Higher Education, MHRD, GOI, NIT Meghalaya has organized various countdown activities for building momentum towards the International Day of Yoga from 06th June 2024 onwards till 21st June 2024.



Lecture Series on "Benefits of Yoga and Meditation on Human Health"



Yoga Session

## Voluntary Blood Donation Camp Organized by NIT Meghalaya in Association with Blood Centre, Neigrihms

A Blood Donation Camp was organized on the June 11, 2024, Tuesday at the Lecture Hall at Bijni Complex, Laitumkhrah, in joint collaboration with the Blood Centre, NEIGRIHMS, to commemorate the World Blood Donor Day on June 14, 2024 and 27 August 2024. Dr Lutika Nepram, CMO, Blood Centre thanked the Institute by handing over the appreciation certificate for organizing the camp. Of 20 willing donors, 19 could meet the primary health condition to donate blood and could successfully donate.



Handing over a certificate of appreciation to Director



A photo with some of the donors

## Partition Horrors Remembrance Day

NIT Meghalaya observes the Partition Horrors Remembrance Day, celebrated annually on August 14, commemorates the 1947 partition of British India, resulting in the creation of India and Pakistan. The division was a polarizing event, causing violence, looting, and sexual assault, resulting in millions of deaths and displacement. Prime Minister Narendra Modi declared August 14 as the day to honor the sacrifices of Indians during this time.



Celebration of Partition Horrors Remembrance Day

## Ek Ped Maa Ke Naam Campaign

The plantation drive regarding "Ek Ped Maa Ke Naam" was conducted on 24-08-2024 by UBA Cell of the institute. Around 100 saplings were planted in our permanent campus by the students and faculty members on that day.



Ek Ped Maa Ke Naam Campaign

## Centre for Innovation Incubation and Entrepreneurship



Brainstroming Session on Entrepreneurship



Active Participants

### Speakers of the programme:

- Professor Senthilmurugan Subbiah, Department of Chemical Engineering, IIT Guwahati
- Chairperson of the IITG - Technology Incubation Centre (IITG- TIC)
- Mr. Th. Sanju Singh, Managing Director, EDULIFE India

### A Programme on North-East Venture Fund



Audience awareness

### Speaker of the programme:

Mr. Nickson Sarma, Investment Analyst at NVCL, NEDFi Venture Capital Limited

Date: August 30, 2024

### An Outreach Programme on Plasma Technologies for Entrepreneurship

"Plasma Technologies for Entrepreneurship" was organized by North East Centre for Technology Application and Reach (NECTAR) & National Institute of Technology (NIT) Meghalaya & AIC – IPR Plasmatech Innovation Foundation, IPR, Gandhinagar on 6th August 2024 at NIT Meghalaya. The program was mainly focused on young faculty members, research scholars, M.Sc., M. tech and B.Tech students. This program enlightened the opportunities and prospects of using Plasma Technology for a successful Technology based enterprise. The program covered topics related to Plasma Technology and case studies on how these technologies can be game changer in several areas. It also introduced the participants with the role of Intellectual Property and how Patenting could help them safeguard innovations. The access to Plasma Technology and applications in the North Eastern region was also elaborately discussed.



Inauguration Session of Plasma Technologies Programme

### SPIC MACAY Event at NIT Meghalaya: A Cultural Extravaganza

The National Institute of Technology Meghalaya (NITM) recently hosted a mesmerizing performance by renowned classical dancer Smti. Gopika Varma, a master of Mohiniyattam. The event, organized by the NITM-SPIC MACAY Heritage Club on 4th September 2024, was a cultural extravaganza that captivated the audience. The Auditorium was filled with eager spectators as Smti. Gopika Varma took to the stage. The audience was enthralled by her performance, which was a perfect blend of tradition and contemporary interpretation.



Mohiniyattam performed by Smt. Gopika Varma



Felicitation of Smt. Gopika Varma by our Director

The event was further enhanced by the presence of the Director, Registrar, Deans, President and Vice-president SAC who graciously felicitated the artist. The event was a resounding success, highlighting NITM's commitment to promoting Indian classical music and culture. It provided a valuable platform for students and the local community to appreciate the rich heritage of India.

## World Photography Day

Online Photography Competition was organized by the Photography & Fine Arts Club at NIT Meghalaya on the occasion of the World Photography Day, on 19th August 2024 on the theme, "Nature".

### Faculty in-charge:

- Dr. Debabrata Podder (Dept. of CE)
- Dr. Ningthoujam Johny Singh (Dept. of CSE)

## Game Development Workshop

The Coding Club organized an insightful Game Development Workshop led by Vivek Jha, Chief Technology Officer (CTO) of Second Quest, India's first global simulation games company. Vivek, known for his expertise in the tech and gaming industry, briefly discussed key topics in game development, such as game engine fundamentals, level design, and animation techniques, as well as the use of platforms like Unity.



Game development workshop by Mr. Vivek Jha, Chief Technology Officer (CTO) of Second Quest, India's first global simulation games company

Participants also explored game physics, scripting with C#, and incorporating narratives into gameplay. He spoke about the gaming industry, highlighting trends and career opportunities. This event not only enhanced technical knowledge but also encouraged innovation and collaboration among students passionate about the gaming industry.



Felicitation of Mr. Vivek Jha by Dr. Ningthoujam Johny Singh



Mini Auditorium: The venue for displaying the photographs captured by the competitors



Photo Exhibition for the occasion of World Photography Day



## Certificate Course on "Recent Trends in 3D Modelling and 3D Printing"

The event was organized by the Department of Mechanical Engineering & Central Instrumentation Facility, NIT Meghalaya from 2nd - 6th September 2024. This certificate course explores the latest advancements and applications of 3D modelling and 3D printing technologies.



An interactive session among the faculty members of NITM

### Coordinators:

- Dr. Bikash Kumar Sarkar (Dept. of ME)
- Dr. Kishore Debnath (Dept. of ME)

Resource groups were from Industry, IIT Guwahati and NIT Meghalaya



Highlighting on the importance of 3D modelling software and techniques by Dr. Moumita Tewary (Dept. of ME)



Highlighting on the methodologies to design and print 3D models to the students

## Invited Lectures Delivered



Prof. Kumar Vijay Mishra, Research Scientist at the University of Maryland, College Park, USA delivered a Talk on "5G Communication and Beyond"



Prof. Ravi Kumar Arya- Director, Xiangshan Laboratory Wireless Group, Xiangshan Laboratory, Zhongshan Institute of Changchun University of Science and Technology, China delivered a Talk on "Open-Source Solutions for Advanced Electromagnetic Simulations"

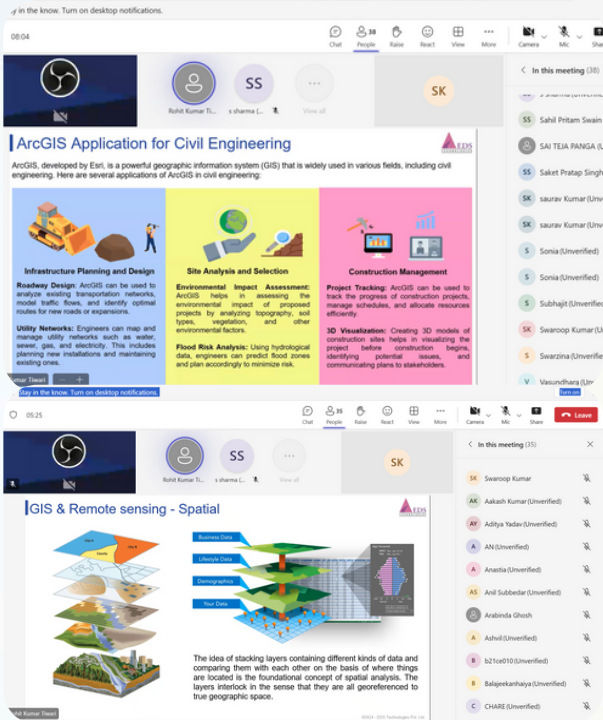


Prof. Jayanta Mukherjee - IIT Bombay delivered a Talk on "High Efficiency Power Amplifier Design using GaN transistors for 5G Communication"

## Webinar on "GIS & Remote Sensing Applications for Environmental Science & Civil Engineering"

The event was scheduled on 6th June 2024 through online mode.

**Speaker:** Mr. Rohit Kumar Tiwari, a GIS Specialist at EDS Technologies Pvt. Ltd.



A glimpse of slides from the webinar



Prof. Ujjwal K. Saha's interaction with the Research Scholars

## A talk on "Integration of Additive Manufacturing and Welding"

Prof. Vishvesh J. Badheka, Dean of Academic Affairs at Pandit Deendayal Energy University, delivered a talk on "Integration of Additive Manufacturing and Welding" on 6th August 2024. This talk explored integrating additive manufacturing and welding, highlighting benefits, applications and challenges. The key takeaways included understanding complementary strengths, addressing technical challenges, and leveraging hybrid manufacturing.



Felicitations of Prof. Vishvesh J. Badheka

## A talk on "Strategies of Thesis writing"

Prof. Ujjwal K. Saha from IIT Guwahati delivered a talk on "Strategies of Thesis writing" on 10th July 2024, providing valuable insights and practical strategies for effective thesis writing.



Felicitations of Prof. Ujjwal K. Saha

## A talk on "Energy Transition: Contemporary & Conventional Technologies for Power Generation"

Dr. Suresh M. V. J. J., Senior Engineering Manager at GE India Technology Centre, Bengaluru, delivered a talk on "Energy Transition: Contemporary & Conventional Technologies for Power Generation" on 9th September, 2024. The talk emphasized the urgent need for an energy transition from conventional to contemporary technologies for sustainable power generation.



Felicitations of Dr. Suresh M. V. J. J.

# Pedagogy Workshop on "Innovative Teaching Strategies and Pedagogical Excellence"

Our institute conducted a professional development programme on "Innovative Teaching Strategies and Pedagogical Excellence" during 23rd - 27th September 2024 at NIT Meghalaya for the faculty members. Dr. P. Malliga, Professor and Head, DEMT, NITTTR, Chennai and Dr. S. Renukadevi, Professor and Head, Dept. of Education, NITTTR, Chennai were the resource persons of this pedagogy workshop.



5 day long professional development programme on "Innovative Teaching Strategies and Pedagogical Excellence"

## Short term Course on "Automated Computer Aided Design and Computer Numerical Control"

The short-term course was organized by the Department of Mechanical Engineering, NIT Meghalaya during 5th - 7th June 2024 visualizing the technology transforms manufacturing workflows, enabling streamlined design-to-production processes, improved accuracy, and increased productivity by improving the product quality.



Interactive session on "Automated Computer Aided Design and Computer Numerical Control"

## Innovative Insights from Taiwan: Prasan Kumar Sahoo Illuminates AI and ML at NIT Meghalaya

In a notable academic exchange, Prof. Prasan Kumar Sahoo, an adjunct faculty member from Taiwan, recently engaged with M.Tech and PhD students at NIT Meghalaya, offering profound insights into the realms of Artificial Intelligence (AI) and Machine Learning (ML). Known for his pioneering work in these dynamic fields, Prof. Sahoo's visit was marked by a series of interactive sessions and seminars designed to bridge theoretical knowledge with practical applications. His sessions delved into cutting-edge AI methodologies and their transformative impacts across various industries, providing students with a deepened understanding of current trends and future directions. The discussions also focused on innovative ML techniques, fostering an environment of intellectual curiosity and collaborative learning. Prof. Sahoo's expertise left a significant impression on the students, inspiring them to explore new research avenues and technological advancements. His contribution not only enriched the academic experience at NIT Meghalaya but also highlighted the institution's commitment to fostering global academic collaborations and advancing knowledge in critical technology sectors.



Interaction of M.tech and Ph.D scholars of CSE Department with Prof. Prasan Kumar Sahoo

## 6th International Conference on Energy, Power and Environment (ICEPE 2024) towards Indigenous Energy Utilization

ICEPE 2024 was organized by the Department of Electrical Engineering during 20th - 22nd June 2024 in hybrid mode at NIT Meghalaya, Shillong. The 6th ICEPE is technically co-sponsored by IEEE Industry Applications Society and IEEE Guwahati Subsection with publication in IEEE Xplore which is indexed globally.



Lighting of the Lamp



Felicitation of Director



Opening of the 6th ICEPE 2024

## Teachers' Day 2024 Celebration

NIT Meghalaya celebrated Teacher's Day 2024 in association with Prof. Utpal Bora, Professor, Department of Bioscience and Bioengineering, IIT Guwahati, who delivered a talk on "Synthetic Biology and Future Manufacturing" and Prof. Ayon Bhattacharjee, NIT Meghalaya, who delivered a talk on "Inclusive Education" on this occasion.



Felicitation of Prof. Utpal Bora



Faculty members of NITM



Talk on "Synthetic Biology and Future Manufacturing"

### Key Highlights:

- Prof. Utpal Bora explored the transformative potential of synthetic biology in reshaping the future of manufacturing.
- Prof. Ayon Bhattacharjee highlighted the importance of inclusive education in creating equitable learning environment.

# NIT Meghalaya Quiz Conclave 2024

The NIT Quiz Conclave 2024, a testament to the vibrant quizzing culture in Shillong, was successfully organized by NIT Meghalaya and the Shillong Quizzing Society (SQS), one of the biggest quizzing societies in the northeast, on September 14, 2024. The event was generously sponsored by North Eastern Electric Power Corporation (NEEPCO) and saw an overwhelming participation of over 30 teams from various schools and colleges across Shillong, including RKM Sohra, which traveled from all the way from Sohra to participate in this event.



The preliminary rounds witnessed enthusiastic participation from over 60+ individuals, with each school sending teams accompanied by their teachers. The rigorous preliminary rounds narrowed down the field to the top 8 teams, including 2 teams from NIT Meghalaya who battled it out in the exciting final round. The final round proved to be a closely contested affair, with teams showcasing their exceptional knowledge and quick thinking. Ultimately, Team from Gorkha Pathshala comprising Wangaal Lama and Sumit Das emerged victorious, securing the coveted first position. Team from NIT Meghalaya comprising Arush Raman and Nazia Hasan Sheikh secured the second position, while Team from St. Anthony's College comprising P. Saraphi Lyngdoh and Meban Manbha Iangrai clinched the third position after a nail-biting tie-breaker round. Participants, teachers, and guests expressed wide appreciation for the event. The NIT Quiz Conclave served as a platform for students to showcase their knowledge, foster a spirit of healthy competition, and experience the thrill of quizzing. The event's success is a testament to the dedication of NIT Meghalaya, the Shillong Quizzing Society, and the generous support of NEEPCO.

## Key Highlights:

- Over 30 teams from schools across Shillong, including RKM Sohra (60 km away).
- 60+ participants in the preliminary rounds.
- Organized by NIT Meghalaya and Shillong Quiz Society.
- Sponsored by NEEPCO.
- Top 8 teams competed in the final round (2 from NIT Meghalaya).

• Team from NIT Meghalaya comprising Arush Raman and Nazia Hasan Sheikh secured the second position, while Team from St. Anthony's College comprising P. Saraphi Lyngdoh and Meban Manbha Iangrai clinched the third position after a nail-biting tie-breaker round.

• Widely appreciated by participants and guests.

NIT Meghalaya was delighted to have so many schools and colleges participate in the NIT Quiz Conclave, and is grateful to NEEPCO for their generous sponsorship, the Shillong Quizzing Society for their invaluable collaboration, and most importantly, to all the participants who made the event a resounding success.



Snapshots of NIT Meghalaya Quiz Conclave 2024

## National Sports Day Celebration

On the occasion of National Sports Day, August 29, the Sports and Games division, SAC, NIT Meghalaya successfully organized a series of sporting events aimed at developing sportsmanship, teamwork, through healthy competition among students. The events included chess, badminton, each drawing enthusiastic participation from 1st year students, and a tug of war competition which was organised between the second- and third-year students. The winners were rewarded with a token of appreciation in the form of food coupons.

	BADMINTON	CHESS	TUG OF WAR
<b>WINNER</b>	B24CE001 - BANDLA VENKATA BHARATH CHANDRA	B24EE016 - SHREYAS SHARMA	Team 3 <sup>rd</sup> Year
<b>RUNNER UP</b>	B24CS030 - B DHARUN	B24EC028 MEBANDONDOR NONGNENG	Team 2 <sup>nd</sup> Year



Badminton



Tug of War

A total of 66 students participated across different events. 24 students participated in badminton, 26 in chess, and 16 students in Tug of War, and the results according to the specific events are,



Members of Organizing team at the Finals of the Chess competition

## Master Training Program on Mera Yuva (MY) Bharat

National Institute of Technology Meghalayahas organized 'Master Training Program on Mera Yuva (MY) Bharat' on June 27, 2024 at Bijni campus, NIT Meghalaya, Shillong. The program was supported by the Department of Youth Affairs, the Ministry of Youth Affairs, and Sports Government of India. The program was inaugurated by Chief Guest, Shr. Jangilong, Regional Director, NSS, NER, MYAS, in presence of Guests of Honor Shr. F. Rumnong, State NSS Officer & Deputy Secretary to Govt. Meghalaya, Edu. Dept., Prof. Ayon Bhattacharjee, Director in-charge NIT Meghalaya, Dr. Bhaskarjyoti Chakravarty, Registrar, NIT Meghalaya, program trainers from the Ministry, Mr. Abhishek Singh (Deputy Manager Digital India), Mrs. Meenakshi Gautam (Executive-BD Digital India), and Dr. Ksh Milan Singh, Program Coordinator NIT Meghalaya.



Mera Yuva (MY) Bharat Programme

57 NSS program officers and a few interested candidates from various institutions in Meghalaya participated in the one-day training program. In the inauguration program, the welcome address was given by Prof. Ayon Bhattacharjee, Director in Charge of NIT Meghalaya. Guests of Honor Shr. F. Rumnong, highlighted the details of My Bharat and NSS followed by the speech of the chief guest, Shr. Jangilong. The main program started at around 10:15 am. Mr. Abhishek Singh (Deputy Manager Digital India), and Mrs. Meenakshi Gautam (Executive-BD Digital India), along with Shr. Jangilong gave training to all participants. Registration along with attendance sheet were collected from all participants. The program manual, writing notepad, and pen were distributed to all participants. The program completed at around 4:30 pm. Evaluation and feedback forms were filled out by all participants through the given links. Finally, the certificates were distributed to all participants, followed by a photo session in the presence of all the chief guests, guests of honor, coordinators, and program trainers. Breakfast, Lunch, and afternoon tea were served in the program.

## Swachhata Pakhwada - 2024 Events

### Essay Writing Competition

#### Summary:

An essay competition was organized on the occasion of “Swachhata Pakhwada” on 3rd September 2024. The competition focused on the theme of & ‘Swachhata: Reduce, Reuse, Recycle’; encouraging participants to explore strategies for minimizing waste and promoting a sustainable lifestyle.

A total of 15 students participated in the competition. The essays were evaluated by Ms. Ankita Bhowmick, a Research Scholar, Dept of Humanities & Social Sciences, based on their content, originality, and understanding of the three R’s.

#### Winners:

- First Position: Gauri Rani (B23ME015)
- Second Position: Mushfique Ahmed (B22ME001)
- Third Position: Kishan Kanth (B23EE016)

The winners were felicitated with certificates and mementos. The competition raised awareness about waste reduction, reuse, and recycling and inspired students to adopt more environmentally friendly practices.



Essay Writing Participants



President of SAC (Student Activity Center) handing over the certificate to the winner

### Painting Competition

#### Summary:

To commemorate “Swachhata Pakhwada,” a painting competition was organized by the Photography & Fine Arts Club with the theme "Swachhata Abhiyan." The competition aimed to promote awareness and creativity among students on the importance of cleanliness and hygiene.

#### Winners:

- First Position: Diyasha Mahanta (B21ME032)
- Second Position: Preetikana Das (S24CB010)
- Third Position: Himanshu Kashyap (B21CE002)

The winners were selected by a panel of judges, Dr. Debabrata Podder, Dept of CE, and Dr. Ningthoujam Johny Singh, Dept. of CSE. The competition successfully fostered a sense of responsibility towards environmental cleanliness and hygiene among the students.



Painting competition on the occasion of Swachhata Pakhwada

### Drama on Clean India

#### Summary:

To commemorate “Swachhata Pakhwada,” the Dance and Drama Club organized a nukkad natak (street play) on 10th September 2024. The performance aimed to raise awareness about the importance of cleanliness and hygiene and to encourage community participation in creating a cleaner environment.

The performance was well-received by the audience, who were engaged and entertained by the actors' energetic and impactful portrayal of the theme.

The nukkad natak successfully fostered a sense of collective responsibility towards environmental cleanliness and hygiene. It inspired the audience to act in their communities and adopt more sustainable practices.



Student performing drama related to Clean India

## Slogan Competition

### Summary:

The Literary Club organized a Slogan Writing Competition on the theme "Swachhata Pakhwada" on 12th September 2024 at the CTEL. Eighteen students participated, demonstrating their creativity and commitment to promoting cleanliness and environmental awareness. Dr. Alekha Ch, Nayak, Dept. of Physics, a faculty in charge of the Literary Club, evaluated the slogans based on their creativity, relevance to the theme, and impact. The competition provided a valuable platform for students to express their ideas and contribute to the cause of cleanliness and social responsibility.

### Winners:

- First Position: Mrinmoy Maji (B22CS036)
- Second Position: Prem Kumar Gupta(B22CS026)
- Third Position: Shubham Pandey(B24ME010)

The winners displayed remarkable creativity and insight, standing out for their thoughtful contributions to the theme "Swachhata Pakhwada." Their dedication to promoting cleanliness and environmental awareness is commendable, and they were rightly awarded certificates and mementos during the closing ceremony. Their efforts inspire all participants to engage more deeply in social causes.



Slogan Writing Participants

## Best out of Waste

### Summary:

A Best-out-of-Waste competition was organized on "Swachhata Pakhwada" on 12th September 2024. The competition aimed to promote creativity and resourcefulness among the participants while highlighting the importance of waste reduction and recycling.

A total of 5 students participated in the competition, showcasing their unique creations made from recycled materials. The entries were judged by Dr. Atanu Singha Roy, Dept. of CBS, and Dr. Susmita Sharma, Dept. of CE, based on their originality, creativity, and overall impact.

**Winner:** Kurra Nandini (B23EC018)

The winner was felicitated with a certificate and a prize. The competition successfully inspired the participants to think creatively about waste and contribute to a more sustainable environment.



Students displaying best out of waste items

## Swachhata Rally

### Summary:

A Swachhata Rally was organized on the occasion of Swachhata Pakhwada on 14th September 2024 by the EBSB (Ek Bharat Shrestha Bharat), and NSS (National Service Scheme) Clubs. The rally aimed to raise awareness about the community's importance of cleanliness and hygiene.

NSS members participated in the rally, marching through the designated route: NIT Meghalaya Bijni campus --- Police Beat House Point --- Fire Brigade --- Dhankheti -- Don Bosco square -- Police Point -- NIT Meghalaya Bijni campus. The participants carried banners and placards with messages promoting cleanliness and environmental awareness. The rally concluded at the NIT Meghalaya Bijni campus.

The Swachhata Rally successfully fostered a sense of community responsibility towards environmental cleanliness and hygiene. It encouraged the participants and the community to act daily to create a cleaner and healthier environment.



Swachhata Rally by EBSB

## Industrial Visit

### Mechanical Engineering at Umiam Stage - I Hydro power plant (B-Tech 2nd year and 3rd year student)

On March 2, 2024, the Department of Mechanical Engineering at the National Institute of Technology (NIT) Meghalaya organized an insightful industrial visit to the Umiam Stage-1 Hydro Power Plant, Sumer Power Station. This visit provided a unique opportunity for students and faculty members to gain a deeper understanding of sustainable energy production and the intricate workings of a hydroelectric power plant.



Snapshots from Umiam Stage - I Hydro power plant

## An Enlightening Industrial Visit: NIT Meghalaya's Mechanical Engineering Students Explore NEIGRIHMS HVAC Unit

On April 24, 2024, the Mechanical Engineering department of the National Institute of Technology (NIT) Meghalaya embarked on an enriching industrial visit to the HVAC unit at the North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences (NEIGRIHMS). This tour, organized and led by the department's esteemed faculty and staff, provided the students with an invaluable opportunity to witness real-world applications of their classroom learning and gain deeper insights into the complex workings of HVAC systems in a healthcare setting.



Snapshots of our students visiting NEIGRIHMS HVAC Unit

## Umiam Dam Repairing Site Visit of Civil Engineering Department by Third Year and Fourth Year Students

On 26th April 2024, 29th April 2024 and 30th April 2024, the third and fourth-year B.Tech Civil Engineering students of NIT Meghalaya undertook an industrial visit to the Umiam Dam repair site. The purpose of the visit was to provide practical insights into dam repair techniques, specifically grouting methods, quality inspection processes including permeability tests, and the operational aspects of infiltration galleries. This report provides a comprehensive overview of the visit, highlighting the key learnings and observations made by the students.

### The main objectives of the industrial visit were:

1. To understand the practical application of dam repair techniques, particularly grouting.
2. To learn about quality inspection processes, especially the permeability test.
3. To observe and comprehend the functioning and significance of infiltration galleries in dam maintenance.

### Overview of Umiam Dam

Umiam Dam, also known as Barapani Dam, is a gravity dam located in the state of Meghalaya. It is primarily used for hydroelectric power generation and is a crucial infrastructure component for the region. The dam has been undergoing repair to address issues related to seepage and structural integrity.



Picture of students Visiting Umiam dam

### Key Learnings and Observations

#### 1. Dam Repair by Grouting Technique:

Grouting is a process used to fill gaps and voids in concrete structures to enhance their strength and reduce permeability. The students observed the following during the grouting process:

#### MATERIALS USED:

Different types of grout materials were introduced, including cementitious and chemical grouts.

## INJECTION PROCESS:

The method of injecting grout under pressure into the dam's foundation and body to fill voids and cracks.

## EQUIPMENT AND SAFETY MEASURES:

The various tools and machinery used in the grouting process, such as grout pumps, mixers, and injection rods. The importance of adhering to safety protocols to prevent accidents during the grouting operation.



## 2. Quality Inspection by insitu Pressurized Permeability Test

Permeability tests are crucial in assessing the water tightness of repaired sections of the dam. The students learned about: Steps involved in conducting permeability tests, including preparing test sections, measuring water flow, and recording data. Understanding the significance of test results in evaluating the effectiveness of the repair work. The tools and instruments used for measuring permeability, such as permeameters and pressure gauges.



Design of a shallow water turbine for energy harvesting, utilizing stream water in hilly places

## 3. Infiltration Galleries

Visit to infiltration galleries and understand the inspection techniques. Infiltration galleries are horizontal or gently inclined tunnels constructed at the foundation of dams to collect and drain seepage water.

**During the visit, the students observed:**

### (a) Design and Construction:

The structural design of infiltration galleries and their placement within the dam structure.

### (b) Functionality:

How infiltration galleries help in reducing water pressure on the dam foundation by draining seepage water.

### (c) Maintenance:

Regular inspection and maintenance procedures to ensure the effective functioning of infiltration galleries.

### Conclusion:

The industrial visit to the Umiam Dam repair site was an invaluable experience for the third and fourth-year B.Tech Civil Engineering students of NIT Meghalaya. It provided them with a practical understanding of critical dam repair techniques, quality inspection processes, and the role of infiltration galleries in dam maintenance. The knowledge gained during this visit will undoubtedly enhance their academic learning and prepare them for future professional challenges in the field of civil engineering.

### Acknowledgements:

We extend our sincere gratitude to the authorities at Hydro Planning and Hydro Construction, MePGCL for giving permission to visit the site. Mr. Manik Toi, Executive Engineer and the onsite team for taking time from the busy schedule for sharing their expertise. Special thanks to the Director, NIT Meghalaya, for motivating to visit the site and giving providing necessary guidance in this regards, HOD Civil Engineering Department, and faculty members of the Civil Engineering Department for organizing and guiding the students throughout the visit.

A top-down view of a desk with a laptop on the left, several papers with charts and graphs, and sticky notes. The charts include a pie chart, a bar chart, a line graph, and a Gantt chart. The text 'Research and Development' is overlaid in a large, bold, black serif font.

# Research and Development

# Multidisciplinary Education and Research Improvement in Technical Education (MERITE)

The Ministry of Education has shortlisted NIT Meghalaya as one of the 20 lead NITs for implementing the MERITE scheme, an initiative by the Ministry of Education, supported by the World Bank. This project aims to modernize the education sector in alignment with the reforms outlined in the NEP-2020. The focus areas of the project include:

Enhancing the educational and research environment by upgrading course offerings, adopting innovative pedagogical practices, and promoting digitization.

Improving the employability of engineering graduates by strengthening their skills and entrepreneurial capabilities.

Ensuring equitable access to education with a special focus on Socio-Economic Disadvantaged Groups (SEDGs).

Strengthening governance and quality assurance to improve sector steering.

Supporting multidisciplinary institutions and programs to enhance the education ecosystem.

The Government of India has allocated a grant of ₹200 crores for this initiative, as highlighted in the 2024 Budget. It is expected that the project will become operational shortly.

## Awarding of 5G Lab

NIT Meghalaya was among the 100 institutes chosen by the Government of India to be awarded for the set-up of the 5G Lab. The Hon'ble Prime Minister Shri Narendra Modi inaugurated the program and distributed the Digital Certificate for the 5G Lab in virtual mode on the 27th of October, 2023 by the Ministry of Education for sanctioning fund to cater the expenditure of NIT Meghalaya for the session 2023-2024.

## Publications

### Journals

- A. Dahal, S. Moulik, "The Multi-Model Stacking and Ensemble Framework for Human Activity Recognition". *IEEE Sensors Letter*, August 2024.
- K. Das, N. Devi, S. Moulik, "EADA: Energy-aware Adaptive Duty-cycle Adjustment in superframe for IEEE 802.15. 6-based Wireless Body Area Networks". *IEEE Sensors Letter*, July 2024.
- A.K. Parida, D. Kumar, R.R. Sahoo and B.K. Balabantaray, 2024. "Solar power prediction approach using data augmented deep learning technique". *Scientia Iranica*.
- A. Paul, H. Kumari, R. Snaitang, P. K. Gautam, and S. Majumdar "Microwave imaging and non-destructive testing of bituminous mix binder-aggregate behavior using log-periodic feedline-based microstrip filter". *NDT*, vol. 2, no. 3, pp. 347–362, 2024.
- O. Manner, S. Sarmah, K. P. Patra, D. Maji, S. Ravi and T. Bora, "Effect of rae earth (Ho,Er) co substitution on the magnetic and dielectric properties of nanocrystalline cobalt ferrite". *Ceramics International* 50, 30912, 2024.

- D. Sarkar, S. S. Yadav, L. R. Cenkeramaddi, O. J Pandey. "TDRA: Transformer Based Deep Recurrent Architecture for Automatic Modulation Classification (AMC) Pertinent to Intelligent Reflecting Surface Assisted Internet of Things (IoT) Networks". *IEEE Internet of Things Journal*. (Accepted)
- D. Sarkar, V. Pal, S. S. Yadav, and S. K. Patra. "IRS-aided NOMA-based communication architecture for 6G wireless networks: An enhanced error-control and reliable data transmission". *Physical Communication* 65 (2024): 102394.
- R. Saikia, R. Deka, A. Sarma, S. S. Devi, "BSNEU-net: Block Feature Map Distortion and Switchable Normalization-Based Enhanced Union-net for Acute Leukemia Detection on Heterogeneous Dataset". *Journal of Imaging Informatics in Medicine*. (Accepted)
- S. Subba and T. Subedi, "An extension of semi-commutative rings via reflexivity". *Analele Stiintifice Ale Universitatii Al I Cuza Din Iasi-Serie Noua Matematica*. (Accepted)
- A. Chauhan and K. M. Singh, "Doppler Parameters Estimation Using Digital PLL Based on SWIFT & Alpha-SWIFT Structures," *IETE Journal of Research*, 15 Feb. 2024.
- N. Uddin, S. Roy, S. Roy, D. Paul, G. Basumatary, G. K. Dutta, P. N. Chatterjee, "Formation of bis-indolylmethanes from symmetrical triarylmethanes via Brønsted acid catalyzed C-C bond breaking reaction". *ChemistrySelect*, 2024, 9, e202400574.
- M. Haque, J. Chutia, A. Mondal, S. Quraishi, K. Kumari, E. W. M. Marboh, K. Aguan, A. S. Roy, "Formation of CdTe core and CdTe@ ZnTe core-shell quantum dots via hydrothermal approach using dual capping agents: deciphering the food dye sensing and protein binding applications". *Phys. Chem. Chem. Phys.*, 2024, 26, 22941.
- S. Nudrat, B. Maity, S. Quraishi, I. Karankumar, K. Kumari, M. Jana, A. S. Roy, "Binding interaction of coumarin derivative daphnetin with ovalbumin: molecular insights into the complexation process and effects of metal ions and pH in the binding and antifibrillation studies". *Mol. Pharmaceutics*, 2024, 21, 4708.
- V. Rupreo, R. Tissopi, K. Baruah, A. S. Roy, J. Bhattacharyya, "Multi-spectroscopic and theoretical investigation on the binding interaction of a neurodegenerative drug, Lobeline with human serum albumin: perturbation in protein conformation and hydrophobic-hydrophilic surface". *Mol. Pharmaceutics*, 2024, 21, 4169.
- D. Rana, S. Pratik, B. K. Balabantaray, P. Rangababu, R. B. Pachori, "GCAPSeg-Net: An efficient global context-aware network for colorectal polyp segmentation". *Biomedical Signal Processing and Control*, Elsevier Science, 2024. (Accepted).
- R. N. Chakraborty, D. S. Mahanta, S. Mazumder and K. Senthilkumar, "Ion implantation induced p-type conductivity in FeS<sub>2</sub> thin film". *Phys. Scr.* 99, 055953, 2024.

- P. Saikia, P. Gupta, T. R. Nath, N. K. Nath, "Crystal-to-crystal polymorphic phase transition in a cocrystal accompanied by expansion and surface wettability change". *Cryst Eng Comm*, 2024, 26, 4259.
- U.K. Patel, N. Alom, and U. K. Saha, "Lift-based Offshore Vertical-axis Wind Turbines for Power Generation: Current Status of Technology and Future Direction of Numerical Research". *Wind Engineering*, 2024 (September).
- D. Sarma and T. Subedi, "The probability that the product of three elements in a finite ring is zero". *Journal of Algebra and its Applications*, August, 2024.
- S. Arulmozhi, K. Sukkiramathi, S. S. Santra, S. Nandi, K. Vajravelu, B. Kumbhakar, S. M. Hussain, "Stokes' second problem exact solution for hybrid nanofluid flow along an exponentially accelerating vertical surface". *ZAMM - Journal of Applied Mathematics and Mechanics*, 2024. (Accepted)
- G. K. Langstang, T. Warjri, R. B. Lyngkhoi and C. Marthong, "An Experimental study of AAC masonry prisms with chases under Compression". *Advances in Material Research*, Techno press, 2024. (Accepted)
- A. Tiwari, P. P. Singh, and B. K. Roy, "A realizable chaotic system with interesting sets of equilibria, characteristics, and its underactuated predefined-time sliding mode control". *Chaos, Solitons and Fractals*, 2024, 185, 15179.
- D. K. Biswas, S. Debbarma and P. P. Singh, "LFC of Multi-Area Power System Using a Robust Full-Order Terminal Sliding Mode Controller Considering Communication Delay". *Electrical Engineering*, 2024. (Accepted)
- M. Kumar, K. P. Panda, R. T. Naayagi, R. Thakur, and G. Panda, "Enhanced Optimization Techniques for Parameter Estimation of Single-Diode PV Modules". *Electronics* 13, 15, 2024: 2934.
- S. K. Dalai, K. P. Panda, Y. P. Siwakoti and G. Panda, "Three-Phase Switched-Capacitor Boost Self-Balanced Multilevel Inverter for Photovoltaic Applications", *IEEE Transactions on Energy Conversion*, 2024, 39(3), 1818-1827.
- S. K. Dalai, K. P. Panda, Y. P. Siwakoti and G. Panda, "Three-Phase Neutral-Point-Clamped Multilevel Inverter Interfacing Grid Interactive Renewable Energy System", *International Journal of Circuit Theory and Applications*, 2024.
- S. Mishra, R. K. Mallick, P. Nayak, T. N. Ramasamy and G. Panda, "Dynamic Power Quality Disturbance Classification in Grid-Integrated PV Systems: Leveraging Clark Transformed Modal Voltage and Subspace Weighted KNN", *IEEE Access*, 2024, 12, 116572-116586.
- K. Roy, S. Debbarma, S. D. Roy and L. Debbarma, "A Bi-level Stacked LSTM-DNN-Based Decoder Network for AGC Dispatch Under Regulation Market Framework in Presence of VPP and EV Aggregators", *IET Energy Systems Integration*, 2024.
- R. B. Lyngkhoi, T. Warjri and C. Marthong, "Shear behaviour of AAC masonry reinforced by incorporating steel wire mesh within the masonry bed and bed-head joint". *Earthquake and Structures*, Techno press, 2024, 26(5), 363-382.
- T. Warjri, R. B. Lyngkhoi, C. Marthong, "Impact of moisture content on the compressive and shear behavior of an autoclaved aerated concrete masonry". *Journal of Materials in Civil Engineering*, ASCE, 2024, 36(6).
- B. Naveen, S. Sahoo, R. Samal, "Landslide Susceptibility Mapping for West-Jaintia Hills District, Meghalaya". *Sadhana*; 2024, 49, 52.
- B. Naveen, and S. Sahoo, "Remote Sensing and GIS-Based Accuracy Assessment of LULC Map and Landslide Susceptibility Prediction for Meghalaya, India". *Jour. Geol. Soc. India*; 2024, 100 (5): 622-638.
- R. Samal, S. Sahoo, and B. Naveen, "A Comparative Study of Seismic Behaviour of a Bamboo Grid Reinforced Slope by Considering Three Major Ground Motion". *Iran J Sci Technol Trans Civ Eng*, 2024.
- R. Samal, S. Sahoo, and B. Naveen, "Static and seismic stability investigation of a bamboo grid reinforced slope with different stepped reinforcing arrangements". *Engineering Research Express*, 2024, 6(1).
- B. Naveen, S. Sahoo, and R. Samal, "Assessing soil erosion risk in Meghalaya, India: integrating geospatial data with RUSLE model". *Environ Dev Sustain*, 2024.
- B. Naveen, S. Sahoo, and S. Samal, "Unveiling Meghalaya topography: slope length gradient (LS) factor estimation for insightful soil erosion evaluation". *Journal. Eng. Appl. Sci.* 2024, 71, 174.
- S. Barbhuiya, B. B. Das, T. Qureshi, and D. Adak, "Cement-based solidification of nuclear waste: Mechanisms, formulations and regulatory considerations". *Journal of Environmental Management*, 2024, 356, 120712.
- S. Barbhuiya, B. B. Das, and D. Adak, "Advancements and perspectives in engineered cementitious composites (ECC): a comprehensive review". *Magazine of Concrete Research*, 2024, 1-46.
- A. Goswami, and H.M. Kalita, "Numerical model for simulating two dimensional unsteady flows in irregular flow domain". *Iranian Journal of Science and Technology*, *Transactions of Civil Engineering*, 2024.
- K. P. Panda, K. Prasad, S.K. Dalai, G. Panda, R. T. Naayagi, and S. S. Lee, "Self-Balanced Switched-Capacitor Common-Grounding Boost Multilevel Inverter". *Electronics*, 2024 13, 2608.
- S. K. Prince, S. Affijulla, and G. Panda, "Resilient bus-bar protection scheme for DC microgrids connected to AC electric grids". *International, Journal of Green Energy*, 2024, 1-13.
- A. Kumar, N. Kotoky, and S. Shekhar, "Spatial Variation of Seismicity Parameters in Meghalaya, North-East India". *Acta Geophysica*, (2024).
- E. Lyngdoh, W. L. Reenbohn, "Escape rate of a dimer under the influence of additive colored noise: Ornstein-Uhlenbeck process". *Physica A* 651 (2024) 129975.

- S. S. Rath, P. K. Ray, G. Panda, A. Mohanty, and T. K. Panigrahi, "Optimal over-current relay coordination in distribution network using grey wolf optimization", *International Journal of Emerging Electric Power Systems*, 2024.
  - S. K. Jalan, C. B. Baladhandautham, K. Sridharan, and G. Panda, "Power quality advancement of grid-tied photovoltaic system: using optimal phase locked loop based control strategy". *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 2024, 46(1), 9077–9096.
  - S. P. Swain, G.C. Pujitha, A. Kar, D. Adak, S. Mandal, N. Makul, "An investigation of the mechanical strength, environmental impact, and economic analysis of nano alkali-activated composite". *Journal of Building Engineering*, (Accepted) 2024.
  - S. Barbhuiya, B. B. Das, D. Adak, "A Comprehensive Review on Integrating Sustainable Practices and Circular Economy Principles in Concrete Industry". *Journal of Environmental Management*, (Accepted) 2024.
  - A. K. P. K. Pandey, M. Dada, M. L. Patton, D. Adak, "A comparative review on the structural behaviour of GFRP rebars with conventional steel rebars in reinforced concrete columns". *Innovative Infrastructure Solutions*, 9, 2024.
  - S. Barbhuiya, B. B. Das, D. Adak, "Advancements and perspectives in engineered cementitious composites (ECC): a comprehensive review". *Magazine of Concrete Research*, 76, 2024.
  - S. Barbhuiya, B. B. Das, D. Adak, "Roadmap to a net-zero carbon cement sector: Strategies, innovations and policy imperatives". *Journal of Environmental Management*, 359, 2024.
  - S. Barbhuiya, B. B. Das, D. Adak, "Cement-based solidification of nuclear waste: Mechanisms, formulations and regulatory considerations". *Journal of Environmental Management*, 356, 2024.
  - A. Chakraborty, D. Bhattacharjee, A. Bhattacharjee, "Exploring odd-even sensitivity in m.O.n.o.m liquid crystal compounds: A comprehensive study using DFT analysis". *Journal of Molecular Liquids* 403, 124800, 2024.
  - Chakraborty, K. Garg, D. Bhattacharjee, A. Bhattacharjee, "A Detailed Exploration of the Impact of Fluorination on Different Physical Properties in 5O.12 Schiff-based Liquid Crystal: A DFT Approach". *Chemical Physics Impact* 8, 100596, 2024.
  - O. Khan, S. Gandhi, D. Gupta, A. Bhattacharjee, "A comparative DFT analysis of chiral laterally semi-fluorinated liquid crystals". *Physica Scripta* 99 (2), 025983, 2024.
  - A. Chakraborty, D. Bhattacharjee, A. Bhattacharjee, "Insights into the dynamic symphony: a comprehensive computational exploration of pure and fluorinated 6O.6 liquid crystals with the help of DFT analysis". *Liquid Crystals*. (Accepted)
  - A. Chakraborty, D. Bhattacharjee, P. R. Alapati, A. Bhattacharjee, "Theoretical Investigation of N (p-n alkyloxy benzylidene) p-n alkyl aniline Schiff-Based Liquid Crystal Molecule". *Physica B: Condensed Matter* 681, 415857, 2024.
  - S. M. Kharphanbuh and A. Nath, "Laser-Induced Plasma and Cavitation Bubble Dynamics at Manganese–Water Interface Under External Electric Fields". *IEEE Transactions on Plasma Science* 52, 300-309, 2024.
- ## Conferences
- A. Verma, S. Thokchom, "An Optimized SIMON Lightweight Image Encryption Algorithm for Internet of Things: Balancing Performance and Security". 1st IC2SDT, NIT Delhi, 2nd -4th August 2024.
  - P. Shreerudra, P. Sharma, D. Rana, and B. K. Balabantaray. "EU-Net: Efficient U-shaped Deep Convolutional Neural Network for Colon Polyps Segmentation". In 2024 6th International Conference on Energy, Power and Environment (ICEPE), pp. 1-5. IEEE, 2024.
  - R. Saikia, A. Sarma, K. M. Singh, S. S. Devi, "VCaps-Net: Fine-Tuned VGG16 with Capsule Network for Acute Lymphoblastic Leukemia Detection on a Diverse Dataset". 6th International Conference on Energy, Power and Environment (ICEPE 2024).
  - R. Saikia, R. Deka, A. Sarma, S. S. Devi, "Hyperparameter Tuning of Fine-Tuned VGG19 Using Sine Cosine Algorithm for Acute Lymphoblastic Leukemia Detection". 2nd International Conference on Data Science and Network Engineering (ICDSNE 2024).
  - S. Goswami, B. H. Naidu, S. L. S. Basha, A. Dandapat, "A Segmented Hybrid CAM for High Speed Application using FinFET". TENSYP 24, September, Delhi.
  - P. S. D. Roy, K. Das, H. M. Kalita, Performance analysis of a cylindrical heat pipe with corrugated wick, The 2nd International Conference on Fluid, Thermal and Energy Systems (ICFTES'24), NIT Calicut, June 06-08, 2024.
  - A. Goswami, H. M. Kalita, A SemiCoupled Numerical Model for 1D Morphodynamic Flow Simulation, International Water Conference for Sustainable Development Goals-2024, Maulana Azad National Institute of Technology Bhopal, March 22-23, 2024.
  - A. Kumar, A. D. Nongsiej, R. N. Dkhar, N. Kotoky, and C. Putcha, "Seismic Vulnerability Assessment of RC Buildings Using Rapid Visual Screening in Shillong, North-East India", NDRAMM-2024, NIT Silchar, 23-24 March 2024.
  - A. Kumar and S. Das, "Site-Specific Seismic Ground Response Analysis of Railway Bridge Site in Haryana, India", NDRAMM-2024, NIT Silchar, 23-24 March 2024.

## Sponsored Projects Received

- Design and Development of Intelligent Cyber Physical System for Prediction, Early Detection and Remote Monitoring of Alzheimer's Disease in Real-Time using Bio-Multifunctional Smart Wearable Sensors. Funded by Science and Engineering Research Board (SERB) at a total cost of ₹6111867/- **PI:** Dr. Soumen Moulik, Computer Science & Engineering, NIT Meghalaya. **Co-PI:** Dr. Debasis Das, Computer Science & Engineering, IIT Jodhpur, and Dr. Badal Soni, Computer Science & Engineering, NIT Silchar
- A Deep Learning Approach for Preservation of Cultural Heritage. Funded by SERB at a total cost of ₹23,91345/- **PI:** Dr. Bunil Kumar Balabantaray, NIT Meghalaya
- Use of Artificial Intelligence and Deep Learning Methods to predict Pain outcomes after transforaminal nerve block (TENB) in patients of lumber spondylosis. MRU-AIIMS Raebareli ₹50000/- **PI:** Dr. Bunil Kumar Balabantaray, NIT Meghalaya.
- Correlation of Heterogeneity in Radiomics and Intra-operative Tumour Characteristics with Histology and Molecular Biomarkers in Astrocytoma: Exploring Role of Artificial Intelligence. MRU-AIIMS Raebareli ₹3000000/- **PI:** Dr. Bunil Kumar Balabantaray, NIT Meghalaya
- Extraction of Pineapple Leaf Fiber and Its Use for the Development of Low-Cost Products. Sponsored by the North East Centre for Technology Application and Reach (NECTAR) with total funding of ₹12,65,880/- **PI:** Dr. Kishore Debnath, NIT Meghalaya
- Performance Enhancement of Underwater Marine Propellers by Use of Additional Appendages. Sponsored by the Technology Innovation Hub (TIH) at IIT Guwahati, this research aims to improve the efficiency of marine propellers through the integration of additional appendages with a total funding of ₹8,00,000/- **PI:** Dr. Subhendu Maity, NIT Meghalaya.
- Design and Development of Controller Unit of Intelligent Reflecting Surface for 6G Wireless Networks, Sponsored by Telecom Centres of Excellence (TCOE), TTDF, Department of Telecommunications (DoT), Design and Development of Controller Unit of Intelligent Reflecting Surface for 6G Wireless Networks, Sponsored by Telecom Centres of Excellence (TCOE), TTDF, Department of Telecommunications (DoT), India with a total funding of ₹3509680/- **PI:** Dr. Satyendra Singh Yadav, NIT Meghalaya
- 6G Standardization: Critical Data Transmission (Remote location data) during Natural Calamity for North-Eastern Region in India for Vehicular Autonomy Sponsored by Telecom Centres of Excellence (TCOE), TTDF, Department of Telecommunications (DoT), India with a total funding of ₹15382400/- **PI:** Dr. Prabir Kumar Saha, NIT Meghalaya
- Design and Development of Intelligent Reflecting Surface for Ubiquitous Connectivity among IoT Enabled Devices Sponsored by Telecom Centres of Excellence (TCOE), TTDF, Department of Telecommunications (DoT), India

with a total funding of ₹3625188/- **PI:** Dr. Abhishek Sarkhel, NIT Meghalaya

- Coating of Hafnium on Copper to Use as Nuclear Reactor Control Rod. Sponsored by the SERB under the Department of Science and Technology (DST) with a total funding of ₹25,06,920.00/- **PI:** Dr. Maneswar Rahang, NIT Meghalaya
- Development of Efficient waveform Engineering for Short packet transmission in ultrareliable and low latency use cases: Design and Prototype Sponsored by Telecom Centres of Excellence (TCOE), TTDF, Department of Telecommunications (DoT), India with a total funding of ₹1752000/- **PI:** Dr. Shравan Kumar Bandari, NIT Meghalaya.

## Consultancy Projects Received

Consultancy projects of worth more than 1 crores in the current year till date has been undertaken by the faculties of the Institute from various agencies, such as CPWD, RITES, PWD, Star Cements Limited, BRO, NEIAH, Govt. of Meghalaya, HSCC (INDIA) LTD, Shillong Meghalaya, etc.

## Research Collaboration

National Institute of Technology Meghalaya has signed MoU with various organizations to improve the joint academic programs, research initiatives, and student exchange opportunities, enriching the educational experience. Partnering with reputable institutions through a MoU can boost the credibility of the participating institutions, attracting more students and faculty.

MoU has also been signed with State Council of Science Technology and Environment SCSTE Meghalaya for a period of 5 years

- To expand and deepen cooperation in science, technology and innovation through exchange of institutional experience and resources for the promoting sustainable growth, quality of life and equity.
- To support and strengthen cooperative capacities in research and development (R&C) and to initiate and take up multi-sectoral, multi-organisational projects in the areas of science, technology, innovation and research with support from NIT Meghalaya in order to achieve transfer of technologies from lab to land and to solve location specific problems through Science & Technology interventions in the State of Meghalaya.
- To enrich the knowledge of people from different walks of life on the applications of Science & Technology in everyday life.



MoU with IIT Jodhpur



MoU with EduSkills



MoU with Parul University



Ms. J Sharailin Gidon from the Department of Civil Engineering under the supervision of Dr. Smrutirekha Sahoo has been awarded Doctor of Philosophy for the thesis entitled “*Real Time Monitoring on Precipitation and Infiltration Triggered Landslide in Meghalaya*” on 17th September, 2024.



Mr. Gorrepotu Surya Rao from the Department of Mechanical Engineering under the supervision of Dr. Kishore Debnath has been awarded Doctor of Philosophy for the thesis entitled “*Mechanical, Thermal, Environmental, and Recycling Behaviour of the Injection Moulded Green Composites*” on 23rd September, 2024.



Mr. Mahabul Haque from the Dept. of Chemical and Biological Sciences under the supervision of Dr. Atanu Singha Roy has been awarded Doctor of Philosophy for the thesis entitled “*Aqueous Compatible Surface Functionalized Luminescent Quantum Dots for Biological and Sensing Applications*” in September 2024.



Mr. Manas Ranjan Pal from the Dept. of Mechanical under the supervision of Prof. Rabindra Narayan Mahapatra has been awarded Doctor of Philosophy for the thesis entitled “*Experimental Investigation on Machining performance Analysis of Ti-6Al-4V during the Micro-EDM Process*” in September 2024.

## PhD Awarded



Ms. Suman Dowerah from Department of Mathematics under the supervision of Dr. Saikat Mukherjee has been awarded Doctor of Philosophy for the thesis entitled “Phase Retrieval and Norm Retrieval in Hilbert Spaces” on 24th July 2024.



Mr. Ashif Mustafa from Department of Mathematics under the supervision of Dr. Manidepa Saha has been awarded Doctor of Philosophy for the thesis entitled “*On Projection Based Iterative Methods to Solve Large Linear Systems*” on 28th August 2024.



# Center Developed

## Computer Training Center for Visually Impaired Persons

The computer training center for visually impaired individuals is dedicated to providing the skills and knowledge needed to thrive in today's workforce. By empowering visually impaired learners, the center aims to open doors to employment opportunities across various sectors, ensuring that individuals with visual impairments can contribute meaningfully to society. Equipped with advanced Braille-enabled computer systems, the facility allows students to develop critical computer literacy, which is essential in today's digital world. These systems, combined with tailored instruction, enable learners to acquire both foundational and advanced computer skills.

The training center was officially inaugurated in June, with Shri Sunil Alagh (Board of Governors), his wife Maya Alagh, Prof. Pinakeswar Mahanta (Director of the institute), and other distinguished dignitaries and professors in attendance. This event marked a significant milestone in the institute's commitment to inclusivity and accessibility, representing a major step toward providing equal educational opportunities for people with visual impairments.

Dr. Bunil Kumar Balabantaray (Assistant Professor, Computer Science and Engineering Department) and members of his research team are actively involved in guiding and supporting the visually impaired learners as they navigate the training systems. Their involvement not only enhances the learning experience for the enrolled students but also provides NIT students with an opportunity to develop valuable teaching and communication skills while engaging in meaningful community service.

The program currently enrolls eight students, some of whom are completely blind while others are partially sighted. These students represent a diverse range of abilities and experiences, but they share a common goal: mastering the skills necessary for personal and professional growth. Spanning three months, the course aims to teach participants how to effectively use a variety of computer applications essential to their future endeavors. The curriculum includes both basic and advanced lessons, ensuring that each student progresses at a comfortable pace while being adequately challenged.

To facilitate learning, the center employs NVDA (Non Visual Desktop Access), a powerful open-source screen reader. NVDA enables visually impaired users to access and interact with the Windows operating system through auditory feedback, allowing them to complete tasks independently. This software bridges the gap between traditional visual computer interfaces and the needs of visually impaired individuals, ensuring students can operate standard office software like Microsoft Word and Excel without relying on sight. The training program began by introducing essential computer skills, starting with keyboard orientation and auditory visualization of the desktop layout.

By learning common keyboard commands and shortcuts, students gained the ability to navigate and interact with their computers efficiently without using a mouse. Once these foundational skills were established, the curriculum shifted to practical software training in Microsoft Word and Excel, focusing on document creation, formatting, data entry, and basic spreadsheet operations.

Teaching visually impaired individuals presents unique challenges, particularly in conveying concepts that are traditionally explained through visual aids. However, this process has revealed the remarkable capacity of the learners. Their heightened memory and concentration skills allow them to retain information more effectively. This experience serves as a powerful reminder that knowledge and learning are not confined to those with the ability to see. Visually impaired individuals have just as much potential to learn, adapt, and succeed. This training center stands as a testament to the fact that, with the right tools and support, visually impaired individuals can overcome societal barriers and become active, skilled members of the workforce.



Visually impaired individual working on computer



## Sitimon Sawian Centre for Inclusive Education

Smt Sitimon Sawian was born in Shillong on 21st February 1924. She was a dynamic lady and was the pillar behind the foundation of several organizations in undivided Assam and Meghalaya. She was the founder member of “Synjuk Kynthei,” in 1948, the first non-sectarian women’s organization in the region. In 1954, Smt Sawian was selected as the Secretary of Rural Field extension, where she worked hard and created policies for the betterment of the rural people. She was also a Member of the Assam Social Welfare Board and later nominated as a Member of the Khasi and Jaintia Hills. She took a keen interest in education and succeeded in upgrading Seng Khasi School into a full-fledged Higher Secondary School.

She was the founder and President of the Indian Council of Child Welfare and a member of the Mary Rice Centre for the Disabled. In 1972, Smt Sawian suffered a major health crisis resulting in restricted mobility. Despite her disabilities, she worked for the betterment of society in various roles and through various organizations. In recognition of her dedicated services to the people of the State, Region and Country, the Government of India conferred her with Padmasree in 1974. Smt Sitimon Sawian is the first receipt of Padmasree from the State of Meghalaya. A proposal has been received from Shri Wallamphang Roy, Hon’ble Member of BOG of NIT Meghalaya, to introduce some noble initiatives in memory of Smt Sitimon Sawian to aid people with disabilities and benevolently he promised to fund the initiative through contributions from his side. After brainstorming with various stake holders, it was proposed that a centre be established at the permanent campus of NIT Meghalaya at Sohra and named as “Sitimon Sawian Centre for Inclusive Education.” The sum donated by Shri Wallamphang Roy will serve as the corpus fund for this centre. NIT Meghalaya will provide the space for the establishment of this centre.

The main purpose of this centre at the initiation stage will be:

- Enable empowerment of all those who are in need.
- Enable education for the people of Sohra especially those who are not able to receive formal education
- Skill development with motivation towards self-employment of the masses with special emphasis on the people of Sohra and adjoining areas.
- Enable technical education to all through skill development courses.
- Enable education for the differently-abled through activities like computer training, especially for the visually impaired.
- Enable minor research like development of small contraptions and devices that can help the differently abled, mainly from the local area.
- The centre will be open to any differently-abled person for the purpose of training and education.
- NIT Meghalaya would design special courses for targeted groups so that the benefits of this centre can reach to all the affected persons in the region.



Smt Sitimon Sawian (1924 - 2016)

- Skill development along with marketing avenues will be explored by this centre so that it becomes self-sustaining at a later stage.
- The interest from the corpus fund will be used to fund the schemes proposed above.
- After establishing the centre, CSR funds would be sought from various organizations to fund more significant initiatives to enable the differently abled.

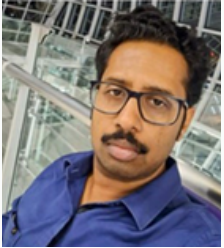
This centre would be a unique initiative of NIT Meghalaya that would directly impact the people of the region and foster the growth of every individual who is interested, whether the person is challenged or is from an area that has its own challenges.



# **Faculty & Student Achievements**



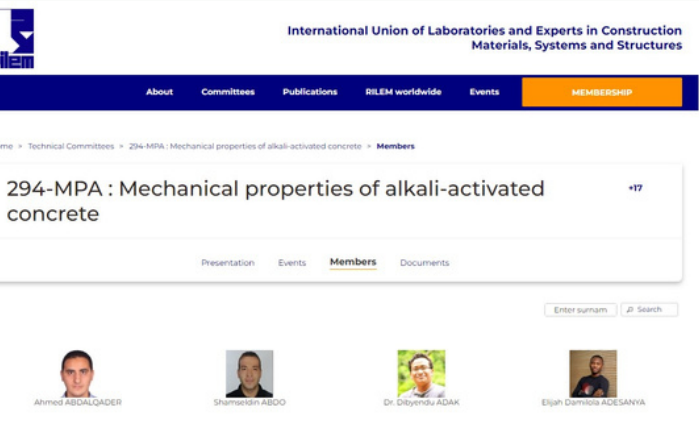
**Prof. Pinakeswar Mahanta** (Director, NIT Meghalaya) has been selected as member of TC20 “Measurements of Energy and related quantities” of the International Measurement Confederation (IMEKO) at the recent General Council in Hamburg Germany.



**Dr. Atanu Singha Roy** (Associate professor, Department of Chemical and Biological Sciences), has been recognized as the Top 2% Researcher based on the survey by Elsevier and Stanford University 2024. Congratulations to him.



**Prof. Saikat Mukherjee and Dr. Kishore Debnath** participated in the networking reception with Thai Delegation on 25th September 2024



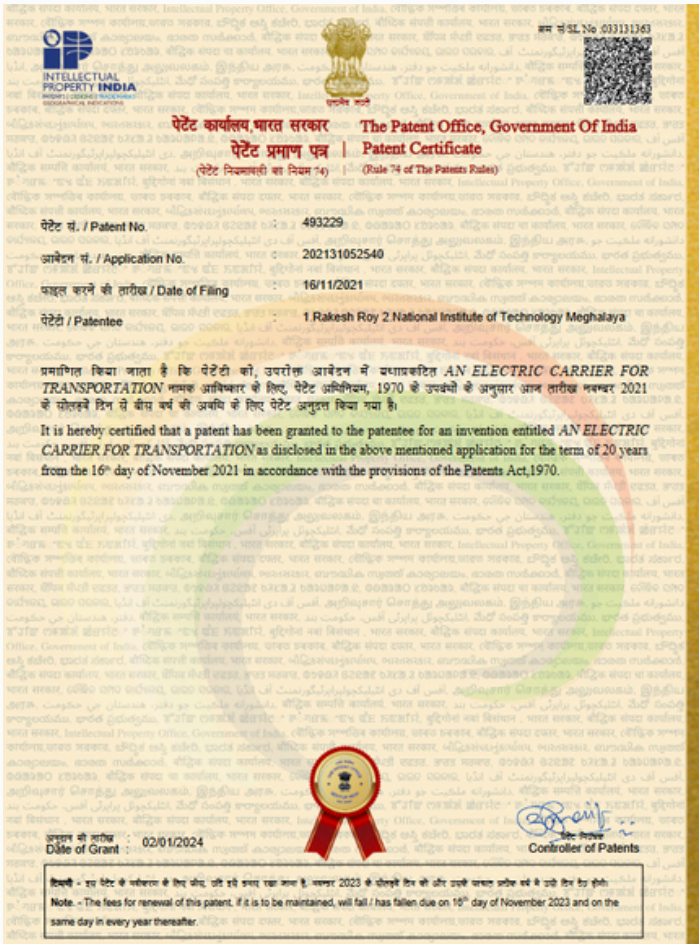
**Dr. Dibyendu Adak** is listed as one of the prestigious RILEM Technical Committee (294-MPA) Members



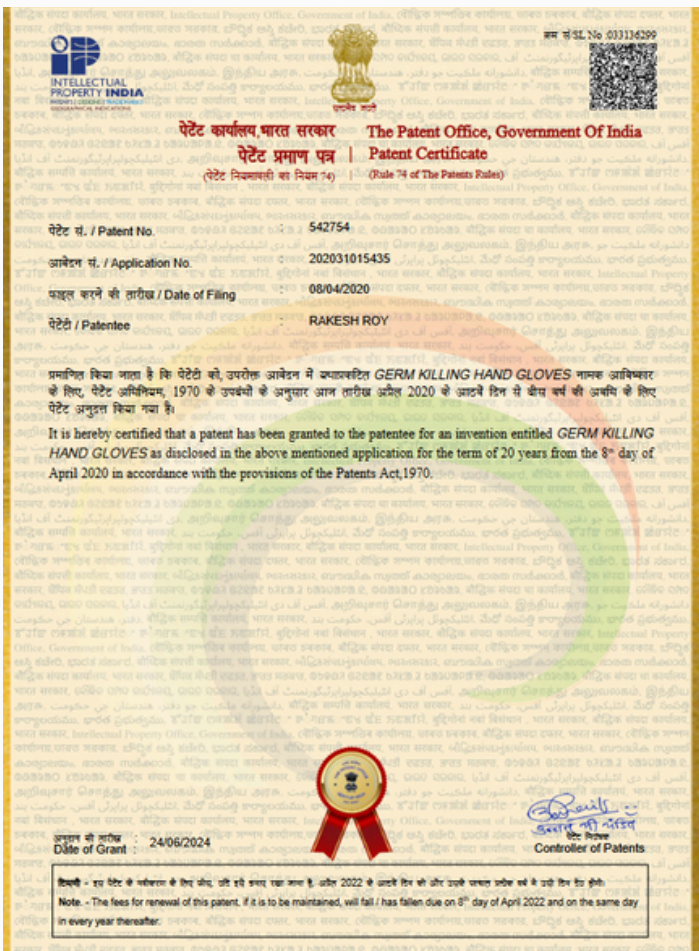
Indian Patent granted in respect of the application of design to LUNCH BOX WITH SNAP CUTLERY SET in the name of 1.National Institute of Technology Meghalaya (NIT Meghalaya) 2. North East Center For Technology Application And Reach (Nectar) 3.Dr. Kishore Debnath 4.Dr. Koushik Das 5. Mr. Gorrepotu Surya Rao



**Mr. Ankit Dhar Dubey** under the guidance of Dr. Kishore Debnath received first position in SCIENTIFIQUE:POSTER PRESENTATION in the Research and Industrial Conclave-Integration'24 held on 09-11 August 2024.



Prof. Ayon Bhattacharjee & Prof. Deba Kumar Sarma has participated in Namaste Vietnam 2024 – Bharat–Vietnam Higher Education Summit from 25th to 26th August 2024 in Ho Chi Minh City, Vietnam



Indian Patent granted in respect of the application of design to “An Electric Carrier for Transportation” and “Germ Killing Hand Gloves” in the name of Dr. Rakesh Roy, National Institute of Technology



IEEE Awareness Program at Ramakrishna Mission Ashrama, Sohra (Cherrapunjee)



**Dr. Sanjoy Debbarma**, Associate Professor, EE Dept. along with his research scholars Ms. Liza Debbarma, Mr. Kingshuk Roy and Dr. Siddhartha Deb Roy, Alumni, NIT Meghalaya attended the 2024 IEEE/IAS Industrial and Commercial Power Systems Asia (I&CPS Asia) conference, Thailand.

- Dr. Sanjoy Debbarma, Associate Professor in the Department of Electrical Engineering, serves as the Vice Chair of the IEEE Guwahati Subsection.
- Financial assistance granted to Ms. Kakali Baruah from Dr. Atanu Singha Roy's research group for participation in the 'ACS Fall 2024: Elevating Chemistry Meeting,' organized by the American Chemical Society and held at the Colorado Convention Center, Denver, USA, from August 18th to 22nd, 2024. The support was provided under the Science & Engineering Research Board (SERB) International Travel Support (ITS) Scheme by the Anusandhan National Research Foundation (ANRF), a statutory body established by the ANRF Act, 2023.
- Dr. Siddhartha Deb Roy, a distinguished Ph.D. alumnus from the Department of Electrical Engineering at NIT Meghalaya, supervised by Dr. Sanjoy Debbarma, has joined MANIT Bhopal as an Assistant Professor, marking a significant milestone in his academic journey.
- Debraj Rana under the supervision of Dr. Bunil Kumar Balabantaray and Dr. P. Rangababu, received best Paper award at the 13th International Conference on Computing, Communication and Sensor Network (CCSN2024) held at Aliah University, Newtown, Kolkata, West Bengal, India on 27th September 2024 for the research title "CMNV2: Compact MobileNet-V2 towards Hardware Deployment for Colorectal Disease Classification".
- Research scholar Mr. Moirangthem Rabindra Singh under the supervision of Dr. Surmila Thokchom and Dr. Soumen Moulik received the result of Best Paper Award in the 13th International Conference on Computing, Communication and Sensor Networks held during 28th -29th Sept 2024 on the paper title "Cryptanalysis of a secure and efficient aggregate signcryption scheme".
- Research scholar of Computer Science Engineering Department, Mrs. Sonali Samal (P21CS002) under the supervision of Dr. Bunil Kumar Balabantaray, received Raman Charpak Fellowship which offers her opportunity to a part of her Ph.D. research at the LITIS lab, University of Rouen, Normandy, France.

- Amarjyoti Mondal from Dr. Atanu Singha Roy's research group secured the third position in the poster competition at the International Symposium on Current Trends in Advanced Materials (CTAM-24), organized by the Department of Chemistry, School of Advanced Sciences, VIT-AP University, in association with the American Chemical Society, held from August 26th to 31st, 2024.
- Rimpee Kumari Sah and Adrish Chakraborty of Prof. Ayon Bhattacharjee's research group were awarded "Young Researcher Award" and "Best Poster Presentation", respectively in the 2nd International Conference on Recent Advances in Fluid Mechanics and Nanoelectronics 2024 (ICRAFMN 24) organized by Manipal University Jaipur in association with Manipal Institute of Technology, Bengaluru, National Institute of Technology Uttarakhand, Universiti Malaysia Phang Al-Sultan Abdullah, Malaysia & Kaestsart University, Thailand during July 10 - 12, 2024.
- Mr. Iyad Bin Hussain T, S22PH008, Alumni Batch 2022-2024 will be admitted to PhD position at the Institute of Physics of Polish Academy of Sciences, Warsaw. He will be working on the topic "Mesoscale simulation of biomembranes". This is an interdisciplinary topic which involves statistical mechanics, Monte Carlo simulations and molecular biology.
- Anjani Kumar, the UG student from EC dept. was awarded Scheme for Promotion of Academic and Research Collaboration by Purdue University USA and IIT Hyderabad on the 24th June to 2nd August 2024.

## Placement Records



**Shreya Poddar (CSE)** has secured job offer from Microsoft with Rs. 51.03 LPA.

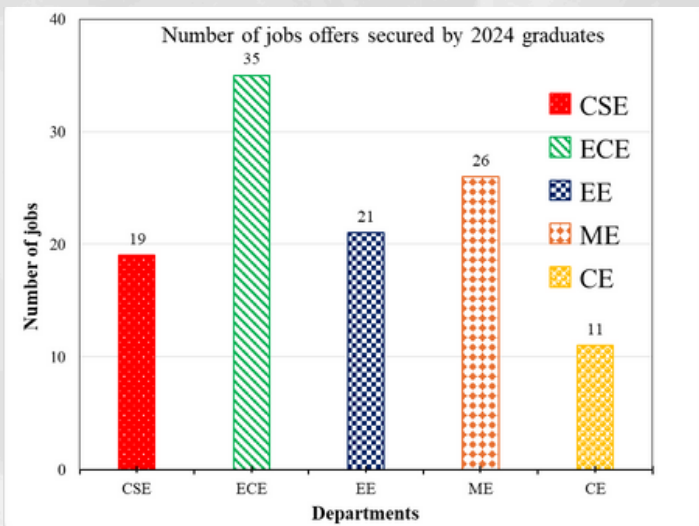
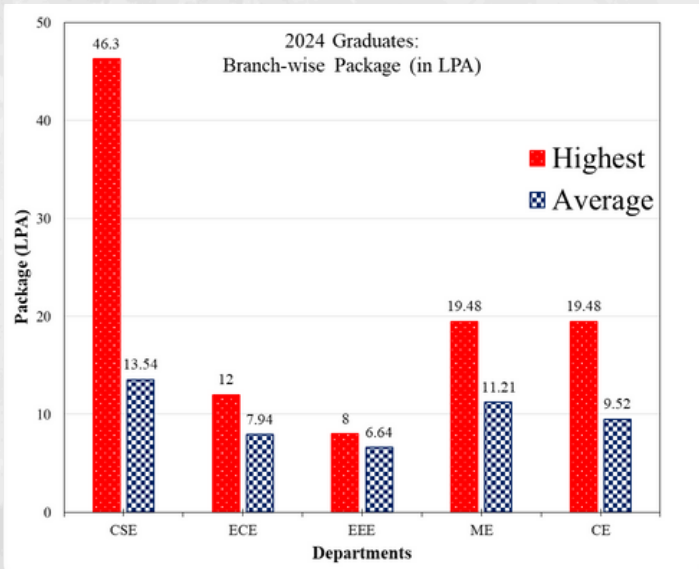


**Shubhavi Kukreja** has secured job offer from JPMorgan Chase & Co. with Rs 19.75 LPA.

Six students have secured prestigious job offers from Bharat Petroleum Corporation Limited (BPCL), with an impressive salary package of ₹19.48 LPA. Notably, five of these students hail from the Mechanical Engineering Department, demonstrating their exceptional technical proficiency and academic excellence. This remarkable achievement is a testament to the high standard of talent and the rigorous training the institute provides.



The institute also provide short term internships for UG students including summer and winter internships. Students with the members of LearnHill Technologies Pvt Ltd who conducted 3-day comprehensive training for the Tinkering Lab Meghalaya internship program.



Preplacement Talk and Interactive Session

## Internship

NIT Meghalaya lays a strong emphasis in grooming technocrats for the corporate sector of today. Internships are an integral part of the course curriculum to impart real-life work situations and hands on experience to all the students. The Centre for Career Development has successfully provided internship facilities to the students of the Institute over the years to make them industry-ready.

Long term Internship (6 Months to 12 Months):

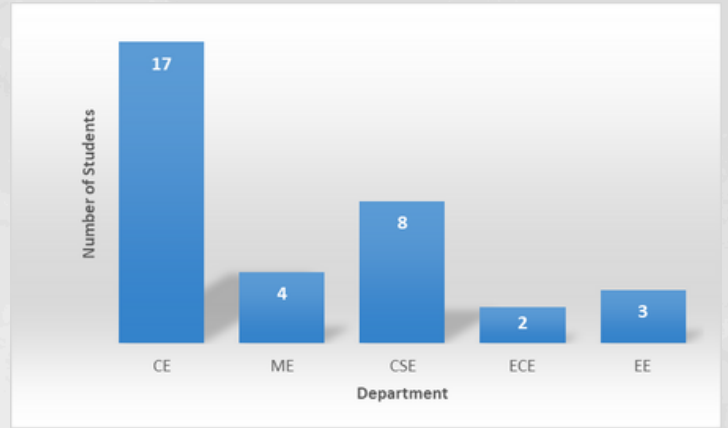
The institute encourages long-term internships for UG and PG students. Several students have been approved to undertake these internships both within India and abroad.

Short term Internship (Less than 6 Months):

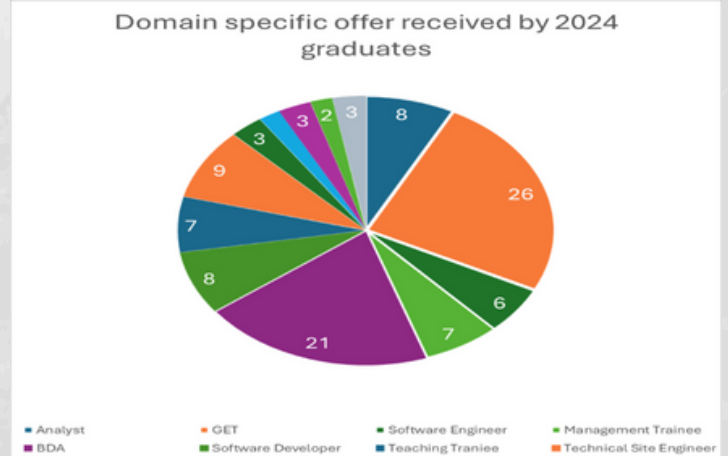




Interactive session on “Indian Navy as a Career Choice” with Lieutenant Commander VVR Charan.



Long term internship details of the academic year 2024-2025



## Recruiters



**A**  
AgriBid, Aviz Networks

**B**  
Bharat Sanchar Nigam Limited (BSNL)  
BHEL-HPV, BHEL, Vardhan Consulting Engineers  
Business Web Solutions, ByteLearn EdTech Pvt. Ltd.

**D**  
DexRev, DST-SERB Funded Project

**E**  
Electronics & Communication Dept., SOT, NEHU  
Electronics Corporation of India Limited  
Eduskills

**F**  
Ficha, Fine Edge

**G**  
GAP Inc., Grohub

**I**  
IIT BHU, Varanasi India  
Indian Institute of Technology Guwahati  
Indian Oil Corporation Limited, Guwahati (IOCL)  
iNeuron, Inforob Automation  
Internshala Training, InTown Solutions

**J**  
Jacobs, Jai-kisan  
Jai nigam (Rural) barabanki

**L**  
Larsen & Toubro Ltd., LinkedIn

**M**  
Manipal University Jaipur  
Mazagon Dock Shipbuilders Limited  
Meghalaya Energy Corporation Limited (MeECL)

Meghalaya Energy Corporation Limited, Tool Room and Training Centre, Guwahati

**N**  
NIT Raipur  
North Eastern Electric Power Corporation LTD (NEEPCO)  
North Eastern Space Applications Centre  
NTPC, Nokia, Nvidia

**P**  
Phillips, Pocket FM; POSOCO (NERLDC)  
Public Health Engineering (PHE), PWD  
PWD, Shillong and NEEPCO, Shillong  
PWD(Roads), Shillong South Division, Shillong

**S**  
SMEC, Solar Secure Solutions; Studio Gloom  
Surveyaan brand of Nibrus Technologies

**T**  
TATA Advanced Systems Limited  
Tata Consultancy Services (TCS)  
Tata projects, Thales  
Tool Room and Training Centre, Guwahati  
TS TRANSCO, Tsaaro

**V**  
Vardhan Consulting Engineers  
Virtually Testing Foundation  
Visakhapatnam Steel Plant, Gangavaram Port & NTPC Sipat  
Visakhapatnam Steel Plant, Hetero labs

**W**  
Wadhwanji Foundation

**Z**  
Winjit  
ZS

# Institute Information



## New Faculty Joined



**Dr. Diangarti Bhalang Tariang** is an Assistant Professor in the Department of Computer Science and Engineering at NIT Meghalaya. She earned her Ph.D in Computer Science and Engineering from IIT Kharagpur in 2022.

Her Research interest includes include Computer Vision, Machine Learning, Deep Learning and Generative AI, with a main focus on Multimedia Forensics, Synthetic Media Forensics and Audio/Video Deepfake Detection.



**Dr. Harshit Joshi** has recently joined the Department of Chemical & Biological Sciences at the National Institute of Technology Meghalaya as an Assistant Professor. He earned his M.Sc. degree in Organic Chemistry from Kumaun University, Nainital, in 2012. He earned his Ph.D degree from IIT Kanpur.

His research interest includes Development of new strategies for carbon-carbon and carbon-hetero bond forming reactions



**Dr. Arunima Dutta** completed her M.Tech in Power and Energy Systems from National Institute of Technology Meghalaya, India in 2016. She is a dedicated and accomplished researcher with a Ph.D.in Electrical Engineering from

Indian Institute of Technology Guwahati, specializing in the field of Power Systems. Her doctoral research centered on Model Predictive-based Coordinated Voltage Control of Active Distribution Networks.



**Dr. Ngangbam Herojit Singh** joined as an Assistant Professor in the Department of Computer Science and Engineering, NIT Meghalaya. He has two years of experience as an Assistant Professor at NIT Agartala. He received his Ph.D. degree from the NIT Manipur.

His areas of interest include machine learning, biomedical image processing, hybrid intelligent systems, and mobile robotics.



**Dr. Jagritee Talukdar** pursued her Ph.D. at NIT Silchar, India. she also served as a post-doctoral fellow at the Indian Institute of Technology (IIT) Bombay, India. Currently, she holds the position of Assistant Professor in the Department of

Electronics and Communication Engineering at the NIT Meghalaya, India. Research interests span both conventional and non-conventional semiconductor devices and materials.



**Dr. Elsa Cherian** is an Assistant Professor in the Department of Humanities and Social Sciences (HSS) at the National Institute of Technology (NIT) Meghalaya. She earned her PhD in Management from Bharathiar University with prior academic and professional experiences at NERIST and NIT Arunachal Pradesh. Her research expertise includes market demand re-positioning, global branding, and merchandising potentials, with a current focus on enhancing the economic viability of North East India through exploring the merchandising potentials of North Eastern Spices.



**Dr. Yanrenthung Odyuo** currently joined as an Assistant Professor in the Department of Electrical Engineering of National Institute of Technology, Meghalaya, India. He completed his Ph.D. from the Department of Electrical and Electronics Engineering, National Institute of Technology Nagaland, India.

His fields of interest are power systems, power systems operation and control, power system dynamics and stability, power system planning and reliability, smart grid, and machine learning applications in power systems.

## New Registrar Joined



**Dr. Bhaskarjyoti Chakravarty** has joined the National Institute of Technology Meghalaya as the Registrar on 1- January 2024. Prior to joining in NIT Meghalaya, he was working as the Administrative Controller of the Tocklai Tea Research Institute of Jorhat, a premier tea research institute in India. He did his Master of

Business Administration with a specialisation in Human Resource Management and obtained his Degree of Doctor of Philosophy (Ph.D) in Business Administration, Post Graduate Diploma in Personnel Management and Industrial Relations (PGDPM&IR) and Post Graduate Diploma in Computer Application (PGDCA). Dr. Chakravarty has over 32 years of functional experiences in Administration, General Management, HR Management, and Industrial Laws. He had participated with scholarly presentations in 19 National and International Conferences so far. Dr. Chakravarty took regular classes (2 classes of 120 Minutes duration per week) of the Diploma in Tea Management Course of Tocklai Tea Research Institute affiliated under Assam Science & Technology University, Guwahati on subjects like Plantation Labour Act, Labour Laws and Tea Workers' Welfare, Labour Management, Industrial Relations, General Management in Tea Plantations, World Tea Scenario, Indian Tea Market, Challenges of Indian Tea Industry, Tea Research Management, Knowledge Management, Skill Management, and so on.

## Updates on Construction Activities and Progress of Permanent Campus at Sohra

The Institute is currently operating from the temporary campus at Shillong. The building works in the permanent campus at Saitsohpen, Sohra, is under the overall supervision of RITES Ltd., the Project Management Consultants (PMC). The works under Package-I constructions, comprising of Administrative Building, Academic Buildings (A, B, C and D), Lecture Hall, Library cum Data Centre Building, Workshop Building, ESS-I and ESS-II are physically completed. The overall average physical progress of works under Package-II & III comprising of Hostels & Residential Quarters, Director's Residence etc, is about 57%.



Administrative Block



Block C and Block D

The balance works of the buildings under Package-II and III (as per RCE approval) are being taken up under priority basis comprising of Hostels ( Girls' Hostel, Boys' Hostel-three seater) and Director's Residence under Priority-1 and Boy's Hostel-single seater, Residential Quarters Type A, D & E and Sports Complex under Priority-2 have been re-tendered by RITES Ltd.(PMC) and will be completed by February 2025 and June 2025 respectively. The other development works, electrical works assigned to CPWD, internal campus roadwork, sewerage system, etc. are in the completion stage. The drawing of the 33 KV line to the permanent campus by MePDCL is in completion, except for the construction of the 33/11 KV substation inside the campus, which is in progress. The construction of a water supply system, including WTP, for the campus by utilizing the existing water storage reservoir (already constructed) inside the campus has started with physical progress. The Institute also has initiated tapping water from the nearby stream (WahKhlekKhlek) to augment the water supply to the campus. A Central Instrumentation Facility(CIF) was set up with a total expenditure (to date) of Rs. 12.46 Crores at the



LIBRARY

NIT Meghalaya Permanent campus at Sohra. Currently, the CIF operates various instruments such as: 1 Powder X-Ray Diffraction (PXRD); 2 Field Emission Scanning Electron Microscope (FESEM) with EDS; 3 Metallic 3D Printer; 4 Multichannel Electrochemical Workstation; 5 Fatigue Fracture Testing Machine (FFTM); 6 Gas Chromatography & the Atomic Absorption Spectroscopy (AAS).

The Central Workshop was set up with a total cost of Rs.9.95 Crores at our Permanent Campus at Sohra. Students of all branches use the workshop facilities for the fabrication of their minor and major projects. The Final Year students in the Mechanical discipline utilises the facilities of the central workshop in connection with their project work. The Faculties also utilise the facility, the PhD students and the M.Tech students of the Institute for their research and consultancy activities. The workshop comprises a Machine Shop, a Foundry Shop, a Fitting Shop, a Welding Shop, a Carpentry Shop, an Electrical Shop, an Automobile shop, and a Plumbing shop, which are well-equipped with the latest tools and equipment. Some of the major equipment under the central workshop are Smart Factory Automation System With IOT, production type CNC milling Machine along with 20 station ATC, Synergic Pulsed GMAW Machine, Robotics Welding System, Laser Welding Machine With 1000 W LASER, etc.

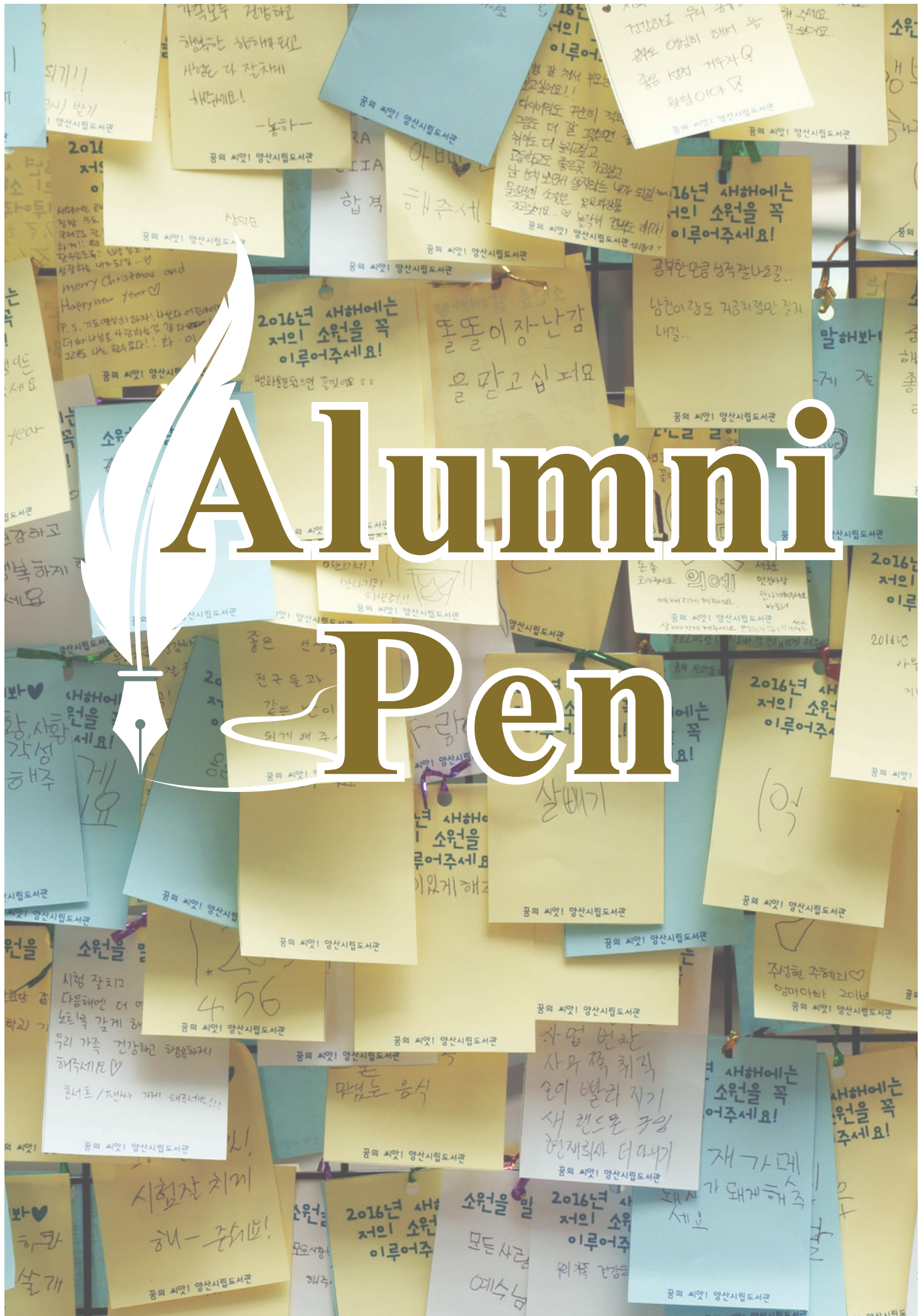
### Sports Facilities at Sohra Campus

4 numbers of Carrom Boards and 03 numbers of Foosball are already set up as the Indoor Sports Facility in the Block A of the permanent campus. 04 numbers of Table Tennis are also already placed in the same room. The Snooker Table has been installed in the permanent campus. The Badminton Court has been set up in the workshop building. Two multi-gym will be coming up very soon. The institute is also working to complete the process of making the football ground in the permanent campus.

*The work that has been started is in good progress and will be completed within 8-9 months. With the above developments/progress, the Institute has re-scheduled to shift to the permanent campus by January 2025.*



# Alumni Pen





**Dr. Phrangboklang Lyngton Thangkhiew,**  
Assistant Professor,  
Department of CSE,  
IIT Guwahati



**Jatin Kumar Singh**  
B.Tech (2019-2023 Batch, ECE)  
Former Student General Secretary,  
SAC  
Working at Oracle (Associate  
Consultant)

Greetings NIT Meghalaya!

"Technology is best when it brings people together"-Matt Mullenweg

As I reflect on my journey from NIT Meghalaya, where I pursued my PhD, to my current role as an Assistant Professor at IIT Guwahati, I am filled with immense gratitude and pride. NIT Meghalaya played a crucial role in shaping not only my academic path but also my perspective on research and innovation. The institute's supportive faculty, vibrant academic environment, and commitment to fostering curiosity created a foundation for my growth as a researcher and educator.

NIT Meghalaya is where I developed the skills, resilience, and knowledge that continue to guide me in my professional endeavors. I will always cherish the memories and the sense of community I experienced during my time there. It is heartening to see the institute continue its upward trajectory, nurturing the next generation of scholars and professionals. I am proud to be an alumnus of NIT Meghalaya and look forward to its continued success and contributions to the world of education and research.



**Prerana Bakli (MSc batch- 2020-23)**  
Currently pursuing PhD from  
University of Hawai'i at Manoa USA.

I threw myself into everything, from cultural events to academic challenges, and somehow, I always had more energy to keep going. My heart was constantly full, and that's the magic of my alma mater. NIT Meghalaya didn't just give me knowledge; it gave me a sense of belonging and purpose that I'll carry with me forever. Looking back, my time at the NIT Meghalaya was more than just a stepping stone, it was the launchpad for everything that's come since. Even though we were just Master's students but those extra hours in the lab, the one-on-one interaction with the incredible set of Professors who went above and beyond in guiding us, and of course my cohort, I couldn't have asked for a better group of people to learn and grow with, made me feel like we were part of something much big which pushed me to think bigger. What I learned there wasn't just science- it was resilience, curiosity, and the power of pushing limits. So far, I can proudly say those two years were hands down the best of my academic journey. It wasn't just about learning in the classroom, I grew in every way possible.

My four years at NIT Meghalaya were truly unforgettable. I'm grateful for the support from faculty and friends that helped me navigate challenges and shape my career. To the young minds, Balance your classes with exploration, try different things and explore your passion. Build strong bonds with friends and faculty; they offer invaluable lessons. Enjoy every moment of your college life fully. Wishing you all great success and a fulfilling journey ahead!

**Samuel Khongthaw**  
B.Tech (2020 - 2024 Batch, CSE)  
Former Student Convenor,  
Coding Club, SAC  
Working at Amazon Prime Video  
(Software Development Engineer )



As a child, I had a dream to build software that people use. I enrolled at NIT Meghalaya with the same dream. Now, 4 years later, the institute helped me fulfill it. The calm environment, engaging peer groups, supportive faculty, and vast opportunities that the institute provided us with were my foundation. I am thankful for the time I had at the institute.



**Arilam Kyndiah**  
B20ME012  
Alumni Batch 2020-2024  
Currently working in BPCL

"Closing Chapters, Opening Horizons : My NITM journey"

My NITM journey was a rollercoaster ride of memories, challenges and growth. As the 'Covid batch,' we began with online classes and spent our first four semesters in virtual classrooms. Our academic program's balance of theoretical foundations and hands-on experience through internships, industrial visits, and laboratory work propelled our professional growth. I was privileged to be surrounded by a supportive community and genuine individuals among my classmates. The mechanical department faculties, who consistently encouraged us to excel, and seniors, who offered valuable guidance and support, significantly contributed to my personal and professional development. Time flew by, and before we knew it, we were already preparing for our final BTP presentation, marking the end of an era. From virtual beginnings to in-person triumphs, my time at NITM was an unforgettable adventure.



**Ritesh Kumar**  
Batch (2019-2023)  
Assistant Executive Engineer  
(RETAIL), BPCL

I am a proud graduate of NIT Meghalaya, where I pursued civil engineering. My journey has been one of transformation, from a boy who came from a rural background to a professional working at Bharat Petroleum Corporation Limited, a Maharatna PSU.

When I first joined NIT Meghalaya, I faced challenges adjusting to the advanced academic environment, but the college provided me with countless opportunities to grow. It was here that I learned not only the latest technologies in my field but also essential life skills, such as how to communicate effectively and think critically.

I was actively involved in the Photography & Fine Arts Club as a coordinator, which further shaped my creative thinking and teamwork abilities. One of the most impactful experiences was working on my final-year project under the guidance of my supervisor, Ganesh Chand Dhal Sir. His mentorship was invaluable and played a significant role in my academic success.

NIT Meghalaya has been instrumental in shaping both my personal and professional life, helping me build the confidence to overcome my limitations and achieve my goals.

### Career Milestone

-Saptarshi panda



The career of this burgeoning data scientist began with an invaluable internship at the North Eastern Space Applications Centre (NE-SAC). This experience provided a strong foundation, offering exposure to cutting-edge space applications and technologies. The hands-on experience gained during this internship not only honed technical skills but also fueled a passion for data science and its applications in real-world scenarios.

Building on the foundation laid during the internship, the next major milestone was a role as a Data Scientist at Earth Analytics India. From August 2023 to July 2024, this position involved tackling complex data challenges and contributing to meaningful projects. At Earth Analytics India, the focus was on utilizing data to understand and solve environmental issues, underscoring the importance of data science in addressing global challenges. The pursuit of academic excellence continued with enrollment in the Master of Science (Research) program at the prestigious Indian Institute of

Technology (IIT) Delhi in July 2024. This post-graduate program is a significant step towards deepening expertise and engaging in advanced research. IIT Delhi, renowned for its rigorous academic environment and cutting-edge research opportunities, provides the perfect setting to further enhance skills and knowledge.

### My experience as Senior Engineer

-Salik Ahmad  
Batch (2019-2023)



Currently, I serve as a Senior Engineer at Larsen & Toubro Limited working on the MAHSR-C4 (Mumbai-Ahmedabad High Speed Rail) project. My first year with the company saw my role evolving continuously; I was responsible for ensuring the safe execution of work in compliance with safety and government guidelines, Standard Operating Procedures (SOPs), Quality Control and Quality Assurance, and Planning. This diverse range of responsibilities laid a solid foundation for my current role.

To sum up, my journey in the engineering industry has been both challenging and rewarding. Our field is always changing, so we need to be flexible, keep learning new skills, and welcome new ideas. I look forward to seeing how new technologies and market demands will shape the future of our industry. My experiences have taught me the importance of being resilient, adaptable, and committed to lifelong learning.



**Career Milestone From Civil Engineering Graduate to Assistant Manager in Data Analytics**  
-Paul N Gopal ( b14ce004)

Since graduating from NIT Meghalaya in 2018 and joining Infosys through campus placements, my career has been a journey of continuous learning and growth. Transitioning from a Civil Engineering background to the IT industry was initially challenging, particularly during the training period where I immersed myself in learning new technologies.

After completing training, I embraced my role as a Cloud Support Engineer at Infosys, where I gained invaluable insights into the workings of the IT industry. This experience laid the foundation for my career progression. In 2021, I embarked on a new chapter by joining Price water house coopers as an Associate Consultant specializing in Data and Analytics. Here, I dedicated myself to upskilling in Power BI and Alteryx, tools crucial for modern data analysis. In recognition of my contributions and leadership potential, I was promoted to Assistant Manager in 2023.

# Featured Articles



## High-Performance Go-Kart – A First for the State

*Captain: Sourabh Paul; Vice Captain: Binesh Das; Faculty advisor: Prof. Deba Kumar Sarma and Dr. Maneswar Rahang (ME)*

Students from NIT Meghalaya have achieved a groundbreaking milestone by designing and building a high-performance go-kart, making them the first in the state to do so. This project is a major step forward for both the college and the region, igniting interest in the automotive industry and engineering fields among students and the local community.

As a team of mechanical and electrical engineering students, they successfully created a go-kart powered by a 150cc Pulsar engine, featuring an innovative pedal shifter system. Here's what makes their go-kart stand out:

### Key Features

- **First in Meghalaya:** The first team in the state to design and build a high-performance go-kart.
- **High-Speed Performance:** Capable of reaching speeds over 100 km/h.
- **Pedal Shifter:** A unique first for go-karts, offering enhanced control.
- **Powerful Engine:** Powered by a 150cc engine for impressive torque and speed.
- **Safety Design:** With a safety factor of 2.5 at 70 km/h and 2 at over 100 km/h, the kart is built for durability and safety at high speeds.
- **Monocoque Chassis:** A lightweight, strong structure that improves performance and stability.
- **High-Performance Braking:** Equipped with disc brakes, allowing the kart to stop within 5 meters.
- **Safety Equipment:** Includes an emergency button and a fire extinguisher for added safety.
- **Exceptional Maneuverability:** Capable of turning within a radius of less than 3 meters.
- **Low Ground Clearance:** With a clearance of just 1.5 inches, ensuring stable performance at high speeds.

By turning their studies into real-life innovation, these students have set a new benchmark in technology and engineering for NIT Meghalaya and the entire state.



Go-Kart Design

## Sign Language Recognition Using Wearable Sensors

### Bridging the Communication Gap: Sign Language Recognition Using Wearable Sensors

*Kalpesh Vishwakarma and Kunal Singh (ECE)*

In a society that aims for inclusiveness, the deaf and hard-of-hearing populations continue to encounter ongoing challenges in communicating. According to the World Health Organisation, more than 466 million individuals globally experience hearing impairment, with a significant number depending on sign language for communication services. Nevertheless, the use of sign language as a widely used means of communication is still restricted. To bridge this gap, an innovative project led by Kalpesh Vishwakarma and Kunal Singh, under the guidance of Dr. Satyendra Singh Yadav, introduces a novel solution—sign language recognition through wearable sensors.

### A New Era of Gesture-Based Communication

Sign language is a complex system that relies on intricate hand gestures and expressions. With over 300 unique sign languages globally, each gesture represents specific words, alphabets, or numbers. The challenge has always been to create a technology that can accurately interpret these signs in real time.

### Hand Gesture

The proposed system utilizes a custom glove embedded with both flex sensors and contact sensors to detect finger movements and configurations. Each finger's position is recorded based on whether it is open or closed, providing up to 32 possible configurations. Of these, 26 are used to represent letters, while others mark punctuation like a full stop. The sensors capture the angles and resistance of each finger, translating these into digital signals.

### Methodology: Precision Meets Technology

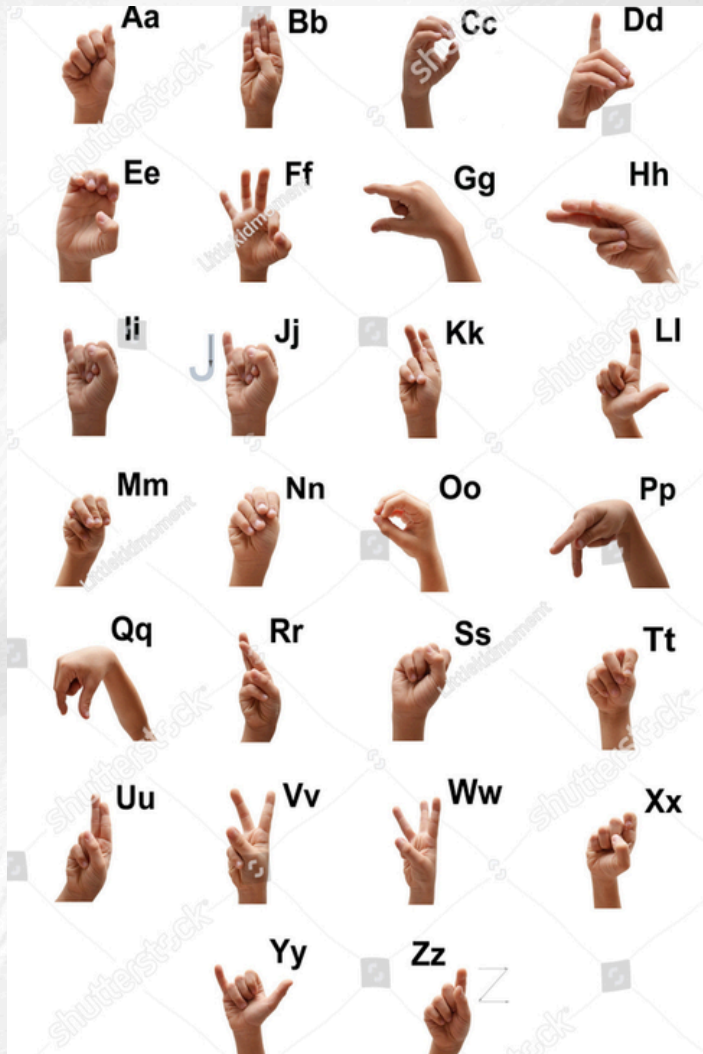
At the heart of the project lies the integration of flex sensors, which detect resistance based on finger angles, and contact sensors, which activate when fingers touch the palm. These sensors feed real-time data into an Arduino board, which processes the information to predict letters. The device is designed for Bluetooth connectivity, enabling wireless data transmission for enhanced flexibility and mobility.

To further refine the experience, the team developed a web application using ReactJS and Node.js. The app receives sensor data via Socket.io, generates strings of characters, and presents meaningful sentences. A unique feature of this app is its ability to correct incomplete or erroneous sign language motions using OpenAI's API, making it more intuitive and accurate.

### The Future of Sign Language Recognition

Although the current system is highly functional, the team envisions several enhancements for the future. By incorporating machine learning algorithms, the system

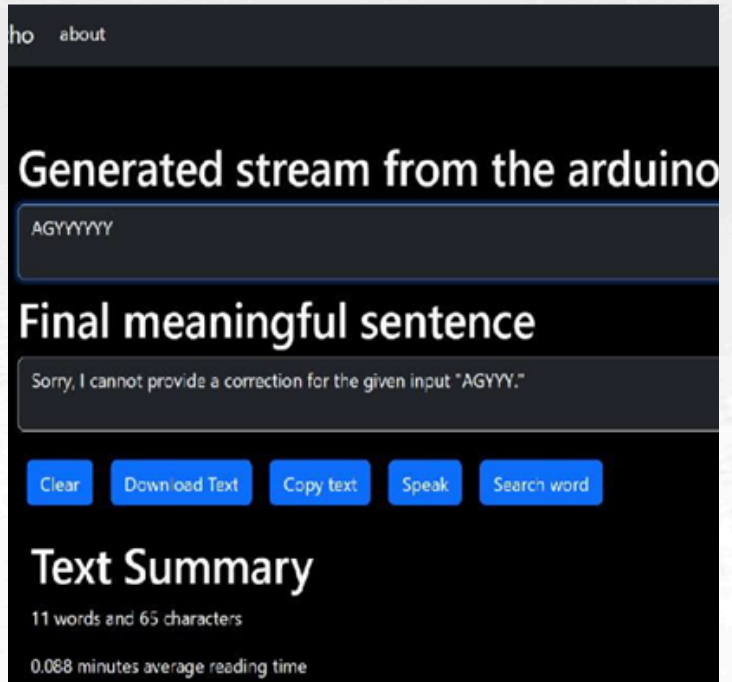
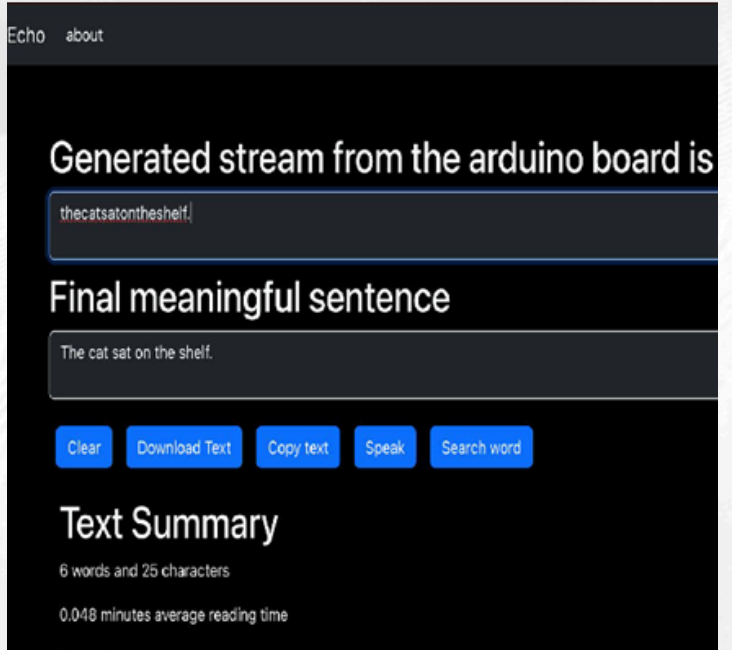
could improve its accuracy by learning from gesture patterns over time. Additionally, upgrading to high-calibration sensors would reduce inconsistencies in resistance readings, further improving reliability.



Wearable Sensors

## Conclusion

This project signifies a major step forward in the field of assistive technology. By combining wearable sensors with advanced programming, the team successfully crafted an Arduino glove circuit with flex sensors and contact sensors where the output generated by the Arduino board is stored in the block of the web app. From there, a meaningful sentence is generated in the second block using the open AI API. Kalpeshand Kunal has created a system that has the potential to change how we communicate with deaf and hard-of-hearing individuals. With continued advancements, this technology could one day be a mainstream tool, making communication more accessible to everyone.





हिंदी प्रकोष्ठ: भाषा  
और संस्कृति का  
पोषण

हमारे संस्थान में हिंदी प्रकोष्ठ की स्थापना हिंदी भाषा के संरक्षण, संवर्धन एवं विस्तार के उद्देश्य से की गई थी। हिंदी प्रकोष्ठ एक महत्वपूर्ण मंच के रूप में कार्य करता है जो छात्रों को हिंदी भाषा, साहित्य एवं संस्कृति से जोड़ता है। इसका प्राथमिक उद्देश्य छात्रों में हिंदी के प्रति रुचि जगाना, उन्हें इसके व्यावहारिक एवं रचनात्मक पहलुओं से परिचित कराना तथा विभिन्न साहित्यिक गतिविधियों के माध्यम से उनके समग्र व्यक्तित्व विकास में सहायता करना है।

हिंदी प्रकोष्ठ के माध्यम से हम छात्रों को भाषा की गहराई, इसकी सांस्कृतिक विरासत एवं इसके समृद्ध साहित्यिक स्वरूप को जानने में मदद करते हैं। पूरे वर्ष हम छात्रों को हिंदी भाषा में अपनी रचनात्मकता एवं दक्षता विकसित करने के लिए प्रोत्साहित करने के लिए भाषण प्रतियोगिता, निबंध लेखन, कविता पाठ, वाद-विवाद एवं लेखन कार्यशाला जैसी विभिन्न गतिविधियों का आयोजन करते हैं।



हिंदी प्रकोष्ठ राष्ट्रीय प्रौद्योगिकी संस्थान मेघालय ने संस्थान के निदेशक प्रो. पी. महंत, संस्थान के कुलसचिव डॉ. बी. चक्रवर्ती, एवं कार्यक्रम के मुख्य अतिथि प्रो. पार्थ सारथी पाण्डेय, क्षेत्रीय निदेशक, केंद्रीय हिंदी संस्थान शिलांग की उपस्थिति में दिनांक 19.09.2024 को हिंदी पखवाड़ा-2024 का उद्घाटन किया।

हिंदी प्रकोष्ठ का नेतृत्व एक समर्पित समिति द्वारा किया जाता है जिसमें उत्साही छात्र और संकाय सदस्य शामिल होते हैं जो संस्थान के भीतर हिंदी के प्रचार-प्रसार के लिए मिलकर काम करते हैं। हिंदी प्रकोष्ठ के संकाय प्रभारी सहायक प्रोफेसर डॉ. सत्येंद्र सिंह यादव के कुशल मार्गदर्शन में, समिति सक्रिय रूप से कार्यक्रमों, चर्चाओं और प्रतियोगिताओं की योजना बनाती है और उनका आयोजन करती है जो हिंदी की सांस्कृतिक और भाषाई समृद्धि में छात्रों की सक्रिय भागीदारी को प्रोत्साहित करती है। समिति के सदस्य यह सुनिश्चित करने के लिए अथक प्रयास करते हैं कि प्रत्येक कार्यक्रम छात्रों के सीखने के अनुभव को मूल्यवान बनाए और भाषा के साथ गहरा जुड़ाव पैदा करे।



20-09-24 को कविता वाचन प्रतियोगिता का आयोजन

हिंदी प्रकोष्ठ के माध्यम से हम वर्ष भर विभिन्न कार्यक्रम आयोजित करते हैं। उनमें से एक है हिंदी पखवाड़ा, जो हर साल हिंदी दिवस के अवसर पर आयोजित किया जाता है। इस अवसर पर प्रकोष्ठ एक भव्य कार्यक्रम आयोजित करता है, जिसमें छात्र और शिक्षक दोनों उत्साहपूर्वक भाग लेते हैं। इस वर्ष भी हमने हिंदी दिवस मनाया और इसका विषय था पारंपरिक ज्ञान और कृत्रिम बुद्धिमत्ता का एकीकरण। 19 सितंबर को आयोजित हिंदी पखवाड़े के उद्घाटन समारोह में प्रो. पार्थ सारथी पांडे (क्षेत्रीय निदेशक, केंद्रीय हिंदी संस्थान शिलांग) मुख्य अतिथि थे। इस वर्ष भी इस भव्य आयोजन में कई रचनात्मक और शिक्षाप्रद कार्यक्रम आयोजित किए गए,

जिसमें छात्रों और कर्मचारियों ने सक्रिय रूप से भाग लिया। इस वर्ष आयोजित कुछ कार्यक्रम इस प्रकार हैं:

1. संस्थान परिसर में हिंदी पोस्टर और स्लोगन पोस्टर प्रदर्शित करना।
  2. हिंदी राजभाषा जागरूकता कार्यक्रम।
  3. एनईपी-2020 के संदर्भ में शब्दावलिओं के महत्व पर कार्यशाला।
  4. अंग्रेजी से हिंदी अनुवाद प्रतियोगिता।
  5. कविता पढ़ने की प्रतियोगिता।
  6. कविता लेखन प्रतियोगिता।
  7. वाद-विवाद प्रतियोगिता।
- ये आयोजित कार्यक्रमों की कुछ तस्वीरें हैं।

हिंदी पखवाड़ा 2024 में आयोजित विभिन्न कार्यक्रमों के विजेताओं एवं प्रतिभागियों को 30 सितंबर को पुरस्कार एवं प्रमाण पत्र निदेशक एनआईटीएम द्वारा वितरित किए गए।



एनईपी-2020 पर कार्यशाला 23-09-24 को आयोजित की गई



एनईपी-2020 पर कार्यशाला 24-09-24 को आयोजित की गई

## *Thought of the Quaterly Month*

“Strength does not come from winning. Your struggles develop your strengths. When you go through hardships and decide not to surrender, that is strength.” – Arnold Schwarzenegger

### ***Translation in Khasi***

“Ka jinghlain kam wan na jingjop. Ka jinghlain ka pynwandur ia ka jinghlain. Haba phi iaid lyngba ki jingeh bad phi rai ban ym kyrtiang dien kata kein ka dei ka jinghlain jong phi.” – Arnold Schwarzenegger

### ***Translation in Hindi***

"ताकत जीतने से नहीं आती। आपके संघर्ष आपकी ताकत को विकसित करते हैं। जब आप कठिनाइयों से गुजरते हैं और हार न मानने का फैसला करते हैं, तो वह ताकत होती है।" - अर्नोल्ड श्वार्जनेगर



# Highlights

## Upcoming Event

11th Convocation on 19th October 2024

११वां दीक्षांत समारोह  
राष्ट्रीय प्रौद्योगिकी संस्थान मेघालय  
१९ अक्टूबर २०२४



11<sup>TH</sup> CONVOCAION  
NATIONAL INSTITUTE OF TECHNOLOGY  
MEGHALAYA  
19th October 2024

HOME AWARDEES SCHEDULE INFORMATION TO AWARDEES REGISTRATION BOOKLET INVITATION COMMITTEE PAST CONVOCAIONS CONTACT US

The 11th Annual Convocation of the National Institute of Technology Meghalaya will be held on 19<sup>th</sup> October 2024 (Saturday) at the State Convention Centre, Shillong from 11 AM onwards.



Shri Suvamoy Saha  
Chief Guest  
Managing Director, Eveready Industries India Ltd.

VIEW PROFILE



Shri Sunil Alagh  
Chairperson, BoG  
Board of Governors, NITM  
President of Convocation

VIEW PROFILE



Prof. Pinakeswar Mahanta  
Director  
NIT Meghalaya

VIEW PROFILE



Prof. Avinash Kumar Agarwal  
Guest of Honour  
Director, IIT Jodhpur

VIEW PROFILE



Major General Rajesh Kumar Jha  
Guest of Honour  
Director (Personnel), NEEPCO Ltd.

VIEW PROFILE

Annual Technical Festival on 7th-9th November 2024



NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA  
(AN INSTITUTE OF NATIONAL IMPORTANCE)

PRESENTS



**COGNITIA**  
2024

THE ANNUAL TECHNICAL FEST OF NIT  
MEGHALAYA  
NOVEMBER XND-XTH  
2024

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International Conference on 14th-16th November 2024



2<sup>nd</sup> International Conference  
on  
**RECENT INNOVATIONS  
& DEVELOPMENTS IN MECHANICAL  
ENGINEERING**  
November 14-16, 2024




Venue  
State Convention Centre, Pinewood Hotel  
European Ward, Rita Road  
Shillong -793001, Meghalaya, India

Organized by

यांत्रिक अभियांत्रिकी विभाग  
Department of Mechanical Engineering  
राष्ट्रीय प्रौद्योगिकी संस्थान मेघालय  
National Institute of Technology Meghalaya


<https://www.icridme.com>

Workshop on Viksit Bharat 2047 15th-16th November 2024



विकसित भारत अभियान पर दो दिवसीय राष्ट्रीय कार्यशाला -आत्मनिर्भर पूर्वोत्तर (Viksit Bharat 2047 through Atmanirbhar Bharat-North East-Agriculture, Healthcare & IKS/ Viksit Bharat 2047 through North Eastern Tech Innovation: Agriculture, Healthcare, and IKS)

Organised by  
National Institute of Technology Meghalaya  
and  
North Eastern Hill University Shillong



National Conference on 16th -17th November 2024

## A TWO-DAY NATIONAL CONFERENCE

ON

Rethinking Humanism: Interdisciplinary Approaches  
in Humanities and Social Sciences

COIN-2024

(Coining New Ideas – Transcending New Horizons)

16<sup>th</sup> & 17<sup>th</sup> November 2024

Organized by



Department of Humanities and Social Sciences  
National Institute of Technology Meghalaya  
<http://nitm.ac.in>

In collaboration with



The English and Foreign Languages University  
Regional Campus Shillong  
<http://www.efluniversity.ac.in/SHLindex.php>

Last date for submission of abstracts : 31.10.2024  
Notification of acceptance of abstracts : 03.11.2024  
Last date of registration : 07.11.2024

3 Best Presenter Certificates for Faculty Members, Social Scientists, and Independent Scholars  
3 Best Presenter Certificates for PG & M.Phil. Students and Ph.D. Scholars

Queries may be sent to the email ID [gender.hss@nitm.ac.in](mailto:gender.hss@nitm.ac.in)

Venue: NIT Meghalaya Campus at Bijni Complex, Laitumkhrah, Shillong



Don Bosco Institute of Management  
Kharghuli, Guwahati  
<https://dbim.ac.in>

The Physics Department will be organizing an International Conference on Celebrating 100 Years of Quantum Mechanics on 21st -22nd Nov 2024

The Six-day Offline Workshop titled as “Exploring Green Energy Solutions: Conceptualization, Hands-on Practice and Field Visit” during 25th to 30th November, 2024, at the Department of Mechanical Engineering, National Institute of Technology Meghalaya. Conveners: Dr. Rajat Subhra Das and Dr. Biplab K. Debnath.

GIAN course on "Automotive Emissions, Control and Scopes of Alternative Green Fuels (Online)" to be held during 09 –13 December, 2024.

5th International Conference on Intelligent Systems and Machine Learning is scheduled to organize by the Computer Science and Engineering Department during 09-10 May, 2025 at NIT Meghalaya

The 7th International Conference on Energy, Power and Environment (ICEPE 2025) is scheduled to organize by the Department of Electrical Engineering during 09-11 May, 2025 at National Institute of Technology Meghalaya, Shillong

## Unique Culture and Place of Meghalaya

### The Behdienkhlam Festival

The Behdienkhlam Festival is a significant cultural event in Meghalaya, North East India, celebrated by the Jaintia tribes, commemorating the expulsion of the Cholera Demon and serving as a supplication to God for an abundant crop. The festival, held in Jowai, includes religious ceremonies, symbolic acts of dispelling bad spirits, and a contest over a large beam. The festival lasts three days, culminating in an afternoon gathering in Aitnar where people dance to pipes and drums, accompanied by the introduction of rots and khnongs (wooden pillar) into water. Rain is preferred for the event. The final event is a dad-lawakor (football-like sport) game, where the team with the highest score indicates an abundant harvest the following year.

### STP on Cultural heritage preservation using AI Tools, sponsored by SERB on 25th - 29th November



#### SHORT TERM TRAINING PROGRAM

on

#### Cultural Heritage Preservation using Machine Learning

organized by

NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA

(An Institute of National Importance)

EVENT ORGANISER

Dr. B. K. Balabantaray, Dept. of CSE, NIT Meghalaya

Email: [bunil@nitm.ac.in](mailto:bunil@nitm.ac.in)

#### ABOUT NIT MEGHALAYA

National Institute of Technology (NIT) Meghalaya is one among the thirteen IITs in India established under the IIT Act 2007 (Amended 2010) of the Parliament of India as Institutes of National Importance with full funding support from the Ministry of Education, Government of India. NIT Meghalaya was established in 2010 and started functioning from its temporary campus in Shillong in 2012. Its permanent campus is currently under development at Cherrapunji. Presently the institute has nine (9) Departments and eight (8) Centres with a combined strength of 60 regular faculty members. All the departmental laboratories are well equipped with advance equipment, instruments and experimental set-up.

#### ABOUT CVML RESEARCH GROUP

The Computer Vision and Machine Learning (CVML) Research Group at National Institute of Technology Meghalaya brings together like minded professors, associate members, undergraduates, postgraduates and research scholars interested in areas of computer vision, machine learning, natural language processing, planning, control and robotics. The goal of the CVML Research Group is to explore, learn and advance in cutting-edge research in the fields of Artificial Intelligence (AI) and Machine Learning (ML). The group also envisions to explore and provide solutions to problems in the fields of Biomedical Image Analysis, Industry 4.0, Cybersecurity, Synthetic Data Generation among others.

#### PROGRAM OBJECTIVE

KARVAYASHALA is aimed to provide hands on experience to the students primarily from universities, colleges, private academic institutions, and newly established institutes in teaching/training/mentoring of high-level scientific instruments and soft skill development on themes relevant for research work.

#### HOW TO REGISTER

\* Register using the link: <https://forms.gle/9m0t6d6d6d6d6d6d>  
\* NO REGISTRATION FEE  
\* Participants are prioritized among the all the registered candidates  
\* Last date for registration 30 November 2024, 5 PM

#### MODE OF WORKSHOP

\* This is a fully offline workshop  
\* Participants are to be physically present for the workshop from 25th to 29th November 2024.

#### HOW TO REACH

The nearest railway station is Guwahati and the railway station, one can travel by bus or airplane from Guwahati. It takes about 3 hours to reach Shillong. After reaching Shillong, one can hire a local taxi to reach the campus at Bijni Complex, Laitumkhrah.

#### PROGRAM OUTCOME

The program is meant to support motivated (B.Tech and Ph.D) students, who are engaged in their scientific and engineering research pursuits.

#### CONTENTS

- Image Segmentation
- Image Reconstruction
- Image Compression
- Neural Networks
- Convolutional Neural Networks
- Deep Learning
- Recurrent Neural Networks
- Generative Adversarial Networks LSTM, GNNs and Attention Models, and many more.

#### KEY SPEAKERS

1. Prof. Sushmita Handa, IIT Guwahati
2. Prof. Ran Eliaz Pachori, IIT Indore
3. Dr. Deepak Kumar, Jharkhand University
4. Dr. Rajeshree Nayak, IIS IASR
5. Prof. Smita Misra, IIT Kharagpur
6. Dr. Parth Sarthi, IITD
7. Dr. Parth Sarthi, IITD
8. Prof. Satish Kumar Singh, IIT Aligarh
9. Dr. Deepak Rajan Nayak, IIT Jodhpur
10. Dr. R. Rangaswami, IIT Madras
11. Dr. Saran Shukla Devi, NIT Meghalaya
12. Dr. R. Ramesh Babu, NIT Meghalaya
13. Dr. B. K. Balabantaray, NIT Meghalaya

#### STUDENT COORDINATORS

1. Luitang Sawhney, PhD (CS Department)
2. Debajani Rana PhD (EC Department)
3. Shantanu Kumar Saha PhD (CS Department)
4. Dipu Kumar Mishra PhD (EC Department)
5. Shikhar Sharma M.Tech (CS Department)
6. Shantanu Sharmar M.Tech (CS Department)
7. Jyotiya Kumar M.Tech (CS Department)
8. Lavanshankar Kumar Lyngdoh M.Tech (CS Department)



Paramount Dance Celebration



Khnongs

## Meghalaya's Matrilineal Marriage Culture: A Unique Tradition

In Meghalaya, the Khasi, Jaintia, and Garo tribes follow a rare matrilineal system, where lineage and inheritance are traced through the mother. After marriage, husbands often move into their wives' homes, symbolizing the strong role women play in family and community life. This cultural practice celebrates the empowerment of women and the deep-rooted respect for family bonds in Meghalaya's society.



Nestled in the northeastern region of India, Meghalaya is renowned for its breathtaking landscapes, vibrant culture, and lush green hills. Among its many gems, Mawlynnong stands out as the cleanest village in Asia, where nature and community blend seamlessly, reflecting the state's deep respect for sustainability and cleanliness.

Arguably the most famous icon of Meghalaya is found here – the Nohwet Living Root Bridge. The bridge was created by weaving the roots of the *Ficus Elastica* tree around a framework and continuing this process for generations.

## Dawki-Shnongpdeng: A Hidden Paradise

Located on the banks of the crystal-clear Umngot River, Dawki and Shnongpdeng are picturesque villages in Meghalaya, offering a serene escape into nature's beauty. Known for its pristine waters, where boats appear to float on air, this area is a hub for adventure enthusiasts and nature lovers alike. With opportunities for river boating, snorkeling, and camping, Dawki-Shnongpdeng is a peaceful getaway that showcases Meghalaya's natural splendor and tranquil charm.

## Krang Shuri Falls: A Mesmerizing Cascade

Tucked away in the Jaintia Hills, Krang Shuri Falls is a stunning cascade with crystal-clear blue waters and lush surroundings. Its serene beauty makes it a must-visit for nature lovers and adventurers, offering a perfect spot for swimming and relaxation amidst Meghalaya's breathtaking landscapes.



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