

Talk on the Topic: "Development to Deployment of Electron Accelerator Technology in BARC".

**ABSTRACT:**

Electron Accelerators have played a big role in almost all the areas of Science and technology. This has been especially true for the field of Nuclear Science and Technology. Realizing the vast applications of charged particle beams specially the electrons, BARC has taken the initiative to start this program of indigenous development of Industrial accelerators at Electron Beam centre, for the first time in the country. Over last two decades, all associated challenges of various sub-systems are successfully met viz. electron gun, RF cavity, beam dynamics, target design, HV multiplier column, radio-frequency power modulators, vacuum aspects and thermal management. Presently 500kV-3MV DC accelerators and 4-10 MeV RF LINAC are designed, developed and deployed for various applications in food, agricultural, industries and security related applications. It is very multipurpose facility which can cater not only R&D activities but diamond coloration, shelf life enhancement for fruits, vegetables, frozen meat, species etc. for self-consumption or export need of the country under self-reliant mission and make in India target. This technology has been transferred by BARC to a few Indian industries for commercialization. North east region Institutes region must plan to have one such facility at their proximity till then all are welcome to visit/use this irradiation facility at BARC to plan for further collaboration.