



Indian National Academy of Engineering (INAE) Expert Group on:
Advanced Microwave - Terahertz-wave Technology & Applications
CSIR-Central Electronics Engineering Research Institute, Pilani, Rajasthan 333031



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The Objective of the INAE expert group is to evolve a position paper on: 'Advanced Microwave, Millimetre-wave and Terahertz-wave Technology & Applications' and a technology road map underlining strategy for self-reliance, in Indian context. It would serve as a reference document for policy makers and stakeholders in: academia, R&D laboratories and industry, to work towards the national objectives of make-in-India and self-reliance in this strategic technology for national development.

The Scope of the study encompasses:

- A status review of the state-of-art and future trends in microwave, mm-wave and Terahertz-wave technology and applications, such as, in Broadcast & Communications, Space, Defence, Energy, Agriculture, Industrial, Scientific & Medical (ISM) domains, and their market potential.
- A broad assessment of current availability of infrastructure, manpower and resources for R&D and productions of devices and systems and projection of additional requirements.

The study would be limited to:

- Frequency Bands: Microwave: 1-30 GHz, mm-Wave: 30-300 GHz, and Terahertz wave: 300GHz-3 THz
- Devices: Critical active- and Passive- Device technologies: solid-state devices, vacuum electronic devices, hybrid-vacuum microelectronic devices, super-components and subsystems
- Applications: Broadcast, Communications, Space, Defence, Energy, Agriculture; Industrial, Scientific & Medical (ISM) systems and other new domains

The group is looking forward to interact with all stake-holders: domain experts and professionals in academia, R&D laboratories, leaders in industry/ chambers of commerce, users, policymakers/regulators, government officials, and professional bodies, researchers, students and others to gather information and ideas towards its objectives.