



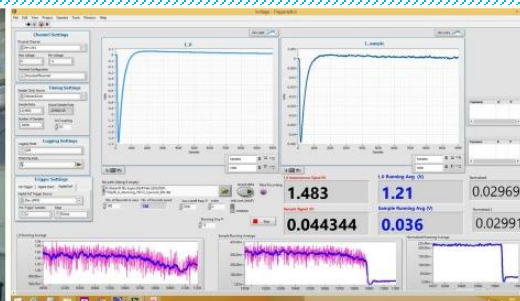
**Theme meeting on
Science with Free Electron Lasers and high power IR-THz sources**

20 & 21 August, 2024

Raja Ramanna Centre For Advanced Technology (RRCAT), Indore.

Sponsored by

Indian Society for Particle Accelerator (ISPA)



The theme

Since the first successful demonstration of lasing of an infrared Free Electron Laser (FEL) by Madey in 1976, FELs have been built worldwide at wavelengths covering a large portion of the electromagnetic spectrum from mm waves to hard X-rays. They have proven to be cutting-edge tools for research in different areas of science and technology. In India, an infrared FEL (IR-FEL) is in operation at RRCAT, Indore, and another THz-FEL is in an advanced stage of commissioning at IUAC, Delhi. Both these FELs shall provide IR/THz radiation to the users in the coming years.

IR/THz spectroscopy is a powerful probe for countless physical phenomena, with applications in different fields of science, industrial technology and defence. Accordingly, there is a strong emphasis on research in this field, especially on IR/THz sources delivering higher power and more efficient detectors.

This theme meeting aims (i) to discuss about the FELs in the country with the accelerator as well as IR/THz community, to attract users to perform experiments using FEL light in addition to experiments using laboratory based sources, and (ii) to initiate discussion on the possible future directions of research and user requirements on the development of experimental tools for probing phenomena/processes in different fields of science.

Relevant details

- Participation is by invitation only.
- Registration is free for all the participants.
- Accommodation in RRCAT guest house shall be provided on chargeable basis.

Topics

- ❖ Science with the FELs and high power IR/THz radiation sources
- ❖ FEL activity in India and future prospects
- ❖ Essential technologies for FELs
- ❖ FEL based user facilities in India
- ❖ Studies using lab-source based IR-THz facilities
- ❖ Utilization of FELs for scientific research

About RRCAT

RRCAT, Indore is a unit of the Department of Atomic Energy, Government of India, engaged in R & D in front line research areas of Lasers, accelerators & related technologies. It is home to two synchrotron radiation sources, electron linacs and several laser systems, including the IR-FEL. RRCAT is also a constituent institution of the Homi Bhabha National Institute.



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