

## Who we are?

CeNSE was the direct outgrowth of the initiative of the Dept. of Electronics and Information Technology (DeitY) and the Principal Scientific Adviser (PSA) to the GoI, through which the Centre of Excellence in Nanoelectronics (CEN) came into being at IISc in 2005. The intent was to establish state-of-the-art facilities for research and development in the emerging fields of nanoscience and technology.

Therefore, state-of-the-art laboratories, equipped to fabricate nanostructured devices and materials, as well as to characterise and measure them precisely and comprehensively, were established at CeNSE (more than 100 pieces of equipment for fabricating, processing, and measuring nanomaterials and structures). The cleanroom at CeNSE is among the largest and most capable anywhere in an academic setting; the characterization laboratory is the only one of its kind in the academic world.

## Contact Us

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# Introductory Training Course in Nanofabrication Technologies

<http://www.cense.iisc.ac.in/itec-workshop/>

Indian Technical and Economic Cooperation Programme (ITEC)

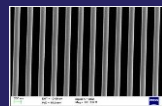
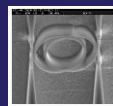
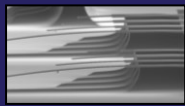
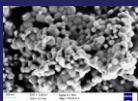
18 June-06 July 2018 & 14 Jan-01 Feb 2019



Enabling national level skill development in nanofabrication and nano-characterization technologies, for applications in Nanoelectronics and beyond...

## CENTRE FOR NANO SCIENCE AND ENGINEERING

Indian Institute of Science, Bengaluru, INDIA



## Overview of the Training Course

To initiate a Nanoelectronics Users Program at CeNSE, IISc, for scientists from neighbouring countries, with funding from the Department of Science and Technology, GoI; to facilitate and support the generation of expertise and knowledge in Nanoelectronics through participation of and collaboration with scientists from developing countries.

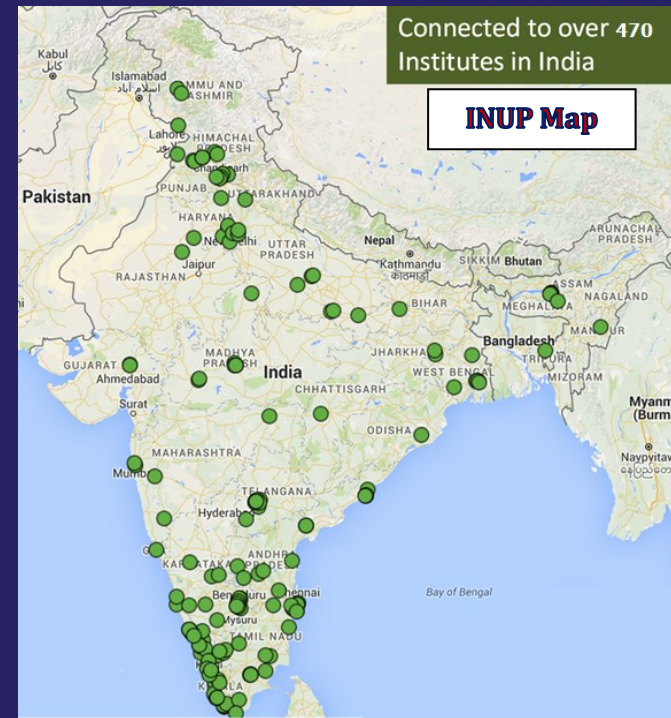
We envision this program to be the first phase of a long-term initiative. Subsequent phases of the initiative would include establishment of Centres of Excellence (CEN) in developing countries; initiation of programs such as INUP in these countries; and establishment of an incubation centre at CeNSE that would leverage the technology as well human resources generated from these CENs and translate the scientific ideas in to startup companies.

**Regular training program and execution of projects:** Training of scientists from neighbouring countries and execution of their research projects at CeNSE.

- To conduct workshops for dissemination of knowledge in the field of Nanoelectronics
- To impart hands-on training in Nanoelectronics to researchers from different countries.
- To assist researchers from these countries with initiation of their research projects in Nanoelectronics by enabling their execution at CeNSE
- To provide a platform for researchers in Nanoelectronics to come together and benefit from complementary expertise

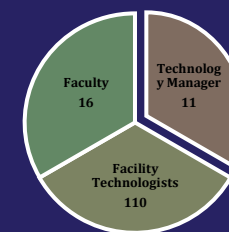
**How To Apply:** Visit ITEC web-link to apply:  
<https://www.itecgoi.in/index.php>

Select link: Courses-Engineering and Technology- Indian Institute of Science Bangalore-apply



## Technical Manpower and Expertise at CeNSE:

Fully appreciating that Nanoscience and Nanotechnology are highly interdisciplinary, CeNSE has assembled a faculty and technical staff that includes electrical engineers, mechanical engineers, physicists, and materials scientists, with biologists as associate faculty members, all with training from highly reputed institutions in India and abroad.



## National Facilities at CeNSE

*Dedicated to the nation by Hon'ble PM Shri Narendra Modi on Feb.18, 2015*

### National Nanofabrication Centre (NNfC)

### Micro and Nano Characterisation Facility (MNCf)



### Training:

From Device Simulation to Packaging: The duration of the Training Course will be 18-20 days, with the following broad modules:

1. Lectures on various aspects of nanoscience and technology, followed by a poster session on one of the first two days in which participants present their work/project ideas
2. Practical training:
  - i. Photolithography and pattern transfer
  - ii. Device Simulation and Fabrication
  - iii. Measurement techniques
  - iv. Packaging techniques

## About the Indian Nanoelectronics Users Program (INUP)

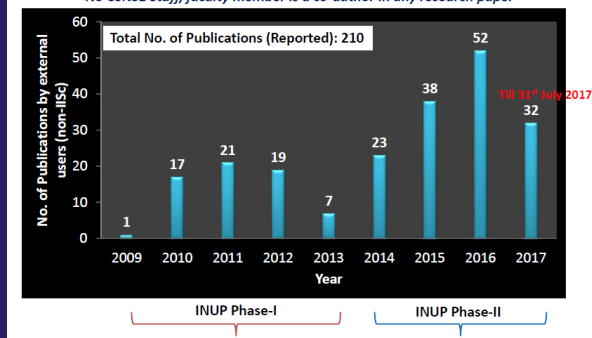
The National facilities at CeNSE, IISc, are committed to training scientists and engineers around the country and facilitating their research in nanoscience and engineering. INUP@CeNSE is now connected to more than 470 institutions in India. Besides training, INUP provides technical expertise to fine-tune and execute research projects. For more details: <https://www.inup.cense.iisc.ac.in/>



Participants attended the Hands- on Training in the National Facilities @CeNSE

### Publication Trend under INUP@IISc

*No CeNSE Staff/faculty member is a co-author in any research paper*



### Eligibility Criteria (for selection as a participant):

1. The Applicant must be a citizen of one of the ITEC countries.
2. The Applicant must have at least a Bachelor's degree (from a recognized University) in any branch of Science and Engineering.
3. The Applicant must be a member of faculty teaching courses, and/or involved in research in Physics, Chemistry, Materials, Electronics and Communications, Electrical Engineering, and Nanotechnology, or must be a student registered for the PhD degree in Science and Engineering in an accredited academic institution/university in one of the countries listed above.
4. The Applicant must submit a Statement of Purpose (One page write-up about research interests and/or research work carried out).

**Desirable:** Applicant may also submit research proposal to the course coordinator through email.

### What is required from Participants:

Each participant will prepare a poster (42x48 inch) on his/her research area/work and submit a soft copy to the undersigned through email before the deadline.

Since selection will be very competitive, participants must submit a poster on their original research with detailed technical information, which will be used in shortlisting the candidates.

### Financial Support:

All the costs, i.e., return airfare travel, living expenses, tour charges and organizational charges will be borne by the MEA, Govt. of India.

### Training Courses for International Participants at CeNSE



Participants from Bangladesh, Sri Lanka, Myanmar, and Maldives for the Two-week Introductory Training Course in Nanotechnologies: 18<sup>th</sup> January -03<sup>rd</sup> February 2016



Participants from Bangladesh, Kazakhstan, and Vietnam for the Two-week Introductory Training Course in Nanotechnologies: 17<sup>th</sup> August -01<sup>st</sup> September 2017

For more details: <http://www.cense.iisc.ac.in/content/indian-nanoelectronics-users-program-inup>