

# Centre for Nano Science and Engineering

*SCIENCE TO SYSTEMS TO SOCIETY*

INDIAN INSTITUTE OF SCIENCE



## About CeNSE

The Centre for Nano Science and Engineering (CeNSE) is one of the world's leading Centres for nanoscience and engineering research. Established in 2010 and spawned inside the prestigious Indian Institute of Science, academicians in the Centre pursue interdisciplinary research and education across various disciplines. The focus is on key enabling technologies like materials, devices, and systems for applications in electronics, photonics, MEMS/NEMS, nano-bio, and quantum, amongst a host of other exciting crossovers. Inspired by the endless possibilities of nanotechnology and aided by facilities that rank among the very best on the globe, research at CeNSE is often cited as highly competitive, of high quality, and frequently ground-breaking.



## About IISc

Founded in 1909, as a result of the joint efforts of Jamsetji Nusserwanji Tata, the Government of India, and the Maharaja of Mysore, the Indian Institute of Science has become the premier institution for advanced scientific and technological research and education in India. Over the 114 years since its establishment, IISc has grown rapidly to the position of being the best university in India as well as the 27th in Asia.

Beginning with 2 departments and 24 students in 1911, today IISc has 43 departments, units and centres, 5000 students, and about 500 academic and scientific staff, supported by 200 administrative personnel. Research students make up more than 70% of the entire student body at IISc.



**14000**

Sq.ft of  
cleanroom

**50+**

Instruments for  
Characterization

**18**

Faculty

**45+**

M.Tech  
Graduates

**145+**

PhD  
Graduates

**130+**

Staff

**50+**

Workshops

## CeNSE in numbers

**600+**

Publications

**80+**

Patents

**9**

Industry  
Affiliate  
Members

**20+**

Technologies  
developed

**1600+**

Users per  
year

**8**

Deep-tech  
startups

## Message from the Chair



Welcome to the Centre for Nano Science and Engineering. CeNSE, as we call ourselves, is home to an exciting group of people working on a range of interdisciplinary problems, with little regard to the background we may have come from. An aeronautical engineer works on DNA sequencing and bacterial swarms. Physicists work on nanomotors that can travel through the human body, quantum sensing, liquid helium and lasers that can blast through walls. Metallurgists work on systems at the edge of chaos, engineering atomically thin layers & developing materials for e-vehicles and 5G electronics. Electronics engineers work on sensors that analyse breath and blood, cutting-edge photovoltaics, quantum communication, neuromorphic devices and integrated photonics. Mechanical engineers work on micro- and nano-systems, designing speakers that mimic the noisy cricket, studying turmeric, energy dissipation, and droplet formation... and of course they all work with each other.

We are supported by state-of-the-art facilities - for fabrication and characterization of micro- and nano-structures - that are amongst the best in the world and managed by professional staff members. These are national facilities that can be accessed by anybody in India - students, academics, the strategic sector, and industry - or for that matter, the world, through our INUP and ISTEM portals.

Science to Systems to Society is our motto. We have developed technologies based on the science we do and translated them to society either through the start-ups we have incubated, licensed to industry or transferred to the strategic sector. A technology business incubator (TBI at CeNSE - INCeNSE) has been set up to enable start-ups, from IISc and outside, that can leverage our facilities. An Industry Affiliate Program (IAP) serves as a platform to engage with industry.

Our students make us proud by excelling on the international stage, and as alumni, they have gone on to occupy exciting positions in academia, industry, start-ups, and the government.

To the student out there interested in doing research, you will not find a better place than CeNSE. To the interested faculty candidate, we welcome all backgrounds. We are especially looking for women faculty candidates. To industry, come and leverage our capabilities - intellectual and infrastructural - to meet your requirements.

Regardless of your background, your interest is most welcome.

**- Prof. Srinivasan Raghavan, CeNSE, IISc**



DIFFUSION ROOM

FILMS

DRY ETCH

LITHOGRAPHY

WET ETCH

9

# Education @ CeNSE

As part of its focus to deliver exceptional education and pursue cutting-edge research, the centre offers MTech and PhD degree programs in nanoscience and engineering to students.

## Focus Research Areas

Materials  
Electron-devices  
Systems  
Photonics  
MEMS/NEMS/Microfluidics  
Nano-biotechnology  
Quantum Technologies





## M.Tech Degree Program

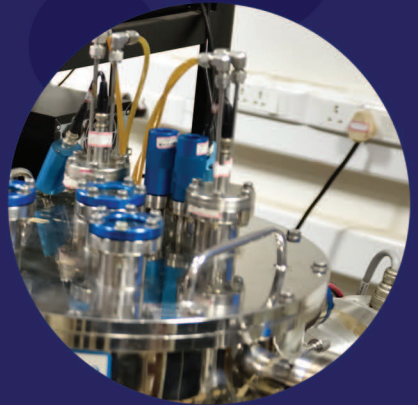
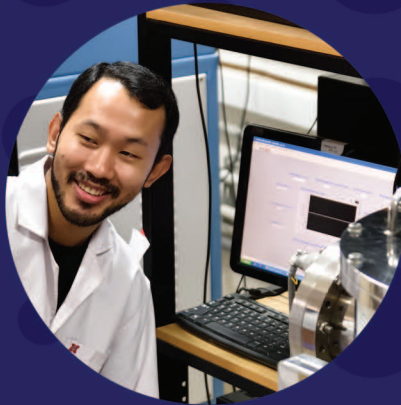
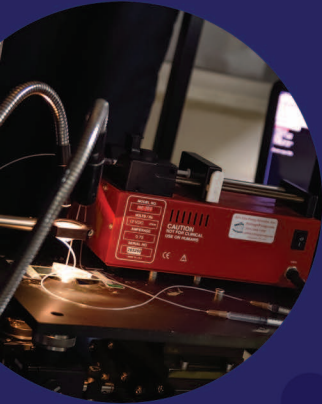
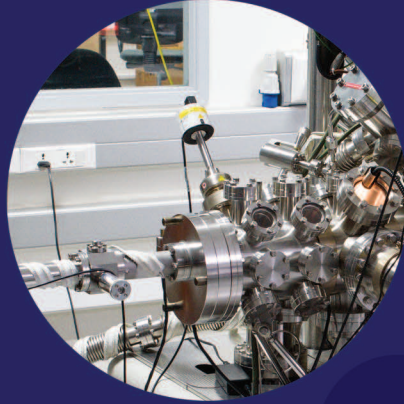
CeNSE is launching an M.Tech in Semiconductor Technology from the Academic year 2023-24 (Aug'23), with optional minors in the thematic areas of Nanoelectronics, Photonics, Nano-bio, Micro-systems & Packaging, Materials (in collaboration with Department of Materials Engineering) and Quantum technology (in collaboration with Institute Quantum Science Initiative). The objective is to cater to the fast-growing semiconductor ecosystem in the country in particular and in the world in general, while retaining the multi-disciplinary flavour of the previous M.Tech program in Nano Science & Engineering. The program is designed to be attractive to students from multiple streams & backgrounds, while at the same time aligning with the current industry needs vis-a-vis the demand for skilled workforce and cutting-edge R&D in semiconductor technology.

**CeNSE has launched the "Industry sponsored M.Tech Fellowship" with the objective of attracting talent from traditional areas of engineering and science to the emerging electronics and semiconductor manufacturing industry through collaboration and knowledge exchange with companies.**

Selected 2nd year M.Tech students of CeNSE will have an enhanced fellowship of INR 25,000 per month for 12 months along with an INR 55,000 as travel cum contingency support.

Sponsors: Intel, LAM research, MacDermid Alpha, Applied Materials





## Ph.D Degree Program

The Centre offers a doctoral degree program that involves rigorous course work followed by thesis research in the various research fields in the centre. For conducting their research, the Ph.D scholars have access to some of the best resources in the nation.

**The duration of PhD completion varies between 4 and 6 years, with an average of 4.5 years for students joining after a Masters'. There have been exceptional instances where a Ph.D thesis has been successfully defended in 2.5 years.**

An undergraduate student with a high GPA from a Centrally Funded Technical Institute (CFTI) can have direct entry to the PhD program at CeNSE through an initiative by IISc.

## Summer Program

Starting from 2013, CeNSE has been conducting a training program every summer, for promising undergraduate and masters' students from India and abroad, selected through a rigorous and competitive process. The training for 8-10 weeks is primarily based on the facilities available at CeNSE and covers a variety of research topics under the broad umbrella of nano science and engineering.

# National Facilities @ CeNSE

National Nano-fabrication Centre - NNFC  
Seamless access for researchers across the nation and the world



NNFC houses a 14000 sq. ft. state-of-the-art class 100 and class 1000 clean room facility with micro- and nano- fabrication facilities. It has a dedicated staff of nearly 50 engineers and technicians who maintain the process tools and develop unit process modules to support complex process integration for research and prototyping. Research efforts at NNFC are being taken to the next level by development of more complex process flows and final device or module prototyping.

The mission of this facility is to support research and educational objectives of CeNSE, IISc and offer state of the art fabrication facilities and services to nanoscience academic (through INUP), related industries and national laboratories across the nation and the world.

<http://nnfc.cense.iisc.ac.in/>



Its capabilities include:

**Photolithography:** Critical dimensions of 1  $\mu\text{m}$  by optical and down to 10 nm by e-beam lithography.

**Deposition:** Chemical & physical vapour deposition (CVD) of most commonly used semiconductors and dielectrics, such as Si, SiGe, Ge,  $\text{SiO}_2$ ,  $\text{SiN}_x$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ , and metals by LPCVD, PECVD, e-beam and sputtering.

**Etching:** Wet and dry etching of the most commonly used semiconductors and dielectrics.

**Process Development and Integration:** Developing new and customized processes for MEMS/NEMS devices, microfluidic structures, and semiconductor devices for industries and other laboratories.

**Inline characterization:** Using various metrology tools involved in device fab. NNfC now houses Gallium Nitride Ecosystem Enabling Centre and Incubator (GEECI), a prototype GaN fab being setup under the aegis of SID (Society for Innovation and Development), IISc.



**Dr. Savitha P**  
Chief Operating Officer  
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**Dr. Vijayaraghavan**  
Chief Technologist  
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# National Facilities @ CeNSE

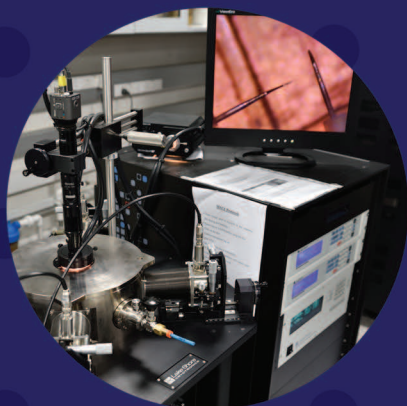
Micro and Nano Characterisation Facility - MNCF  
Seamless access for researchers across the nation and the world



MNCF offers a wide variety of material and device characterization services enabled by the more than 50 pieces of equipment housed under a single roof at CeNSE, IISc, together with experienced staff. We also network with other laboratories to enhance the breadth of our services and are in collaborative agreements with instrument manufacturers and suppliers, allowing us to offer characterization services not available from a single source in India or abroad.

We envision to be a reliable and sought-after global facility for characterization and analysis at the micro-/nano- scale. Our mission is to work closely with academia, industries, and national laboratories to solve challenging scientific and industrial problems; be home to a team of highly skilled and motivated application technologists/scientists in the domain of Nano Science and Engineering and be a self-sustaining and non-profit facility.

<http://mncf.cense.iisc.ac.in/>



**Electrical Characterization:** Multiple probe stations for four-terminal current voltage (I-V) measurements under DC and pulsed conditions, capacitance-Voltage (C-V) and conductance-frequency (G- $\omega$ ) measurements in a wide temperature range, physical and magnetic property measurement systems, three-terminal RF and small-signal measurements up to 67 GHz (with vector network analyzer).

**Mechanical Characterization:** State-of-the-art instruments to probe mechanical properties at micro and nano scales include optical profilometer, atomic force microscopy, micro-system analyzer, scanning acoustic microscope, micro- universal testing machine, rate table, piezo nano displacement system.

**Material Characterization:** In-depth analysis of micro and nano structure and chemistry of materials using field emission scanning electron microscope (FESEM) with energy dispersive spectroscopy (EDS) and cathodoluminescence (CL), dual beam focused ion beam (FIB), X-ray photoelectron spectroscopy (XPS), transmission electron microscope with multi-mode capabilities.

**Optical Characterization:** Comprehensive characterization of bulk materials and thin films using Raman spectroscopy, photoluminescence, Fourier transform infrared spectroscopy (FTIR), simultaneous thermal analyzer, X-ray diffraction (XRD), X-ray reflection (XRR), phase analysis light scattering (Zeta PALS), UV-Vis-NIR spectrometer, solar simulator, and quantum efficiency. MNCF also houses optical microscope for material analysis, stereo microscope, and fluorescence microscope.



**Dr. Suresha SJ**  
Chief Operating Officer  
sureshasj@iisc.ac.in



## National Facilities @ CeNSE



MEMS & IC Packaging Lab and Systems Engineering Facility (SYsEF)  
Seamless access for researchers across the nation and the world

MEMS and IC Packaging facility has the complete capability to convert a wafer into a packaged device - from wafer sawing to wire bonding to precision welding. In addition, there are dedicated setups for calibration of pressure sensors and acoustic sensors.

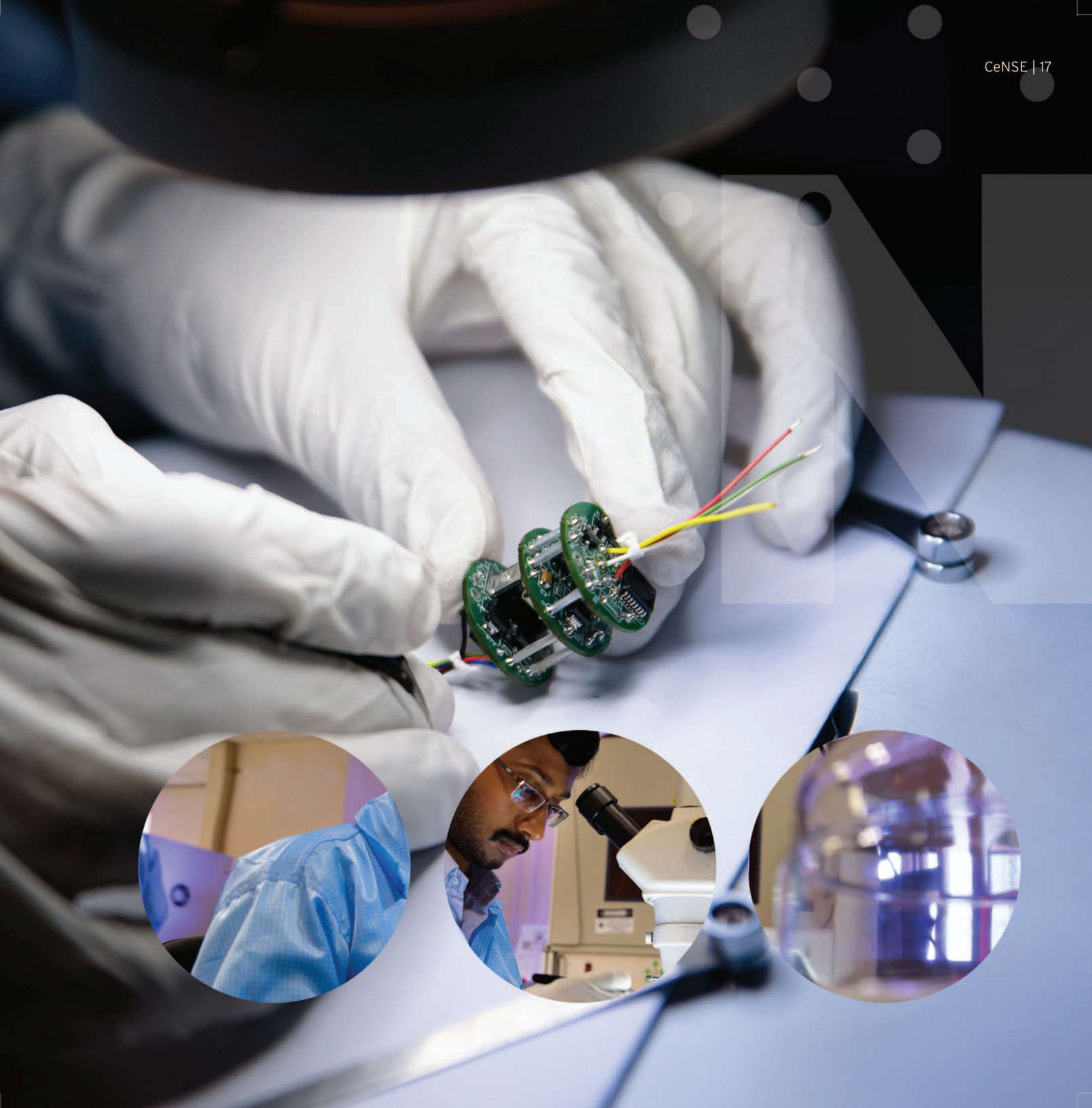
SysEF focuses on building product prototypes around nanotechnology-based sensors ideas. SysEF has built product prototypes around gas sensor technology for urban air quality monitoring and strategic sectors. SysEF is an ESD-safe workspace which houses various electronic test & measurement equipment, ESD workstations, soldering and desoldering stations, two-layer PCB making machine, 3D scanner, 3D printer, PCB design tool, embedded and software design tools, pressure sensor calibration setup, various gas & pressure sensors, electronic modules & components and processor-based evaluation kits.

To know more, <http://sysefandpackagingfacility.cense.iisc.ac.in/>



**Krishna Prasad**  
Technology Manager  
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# Research @ CeNSE

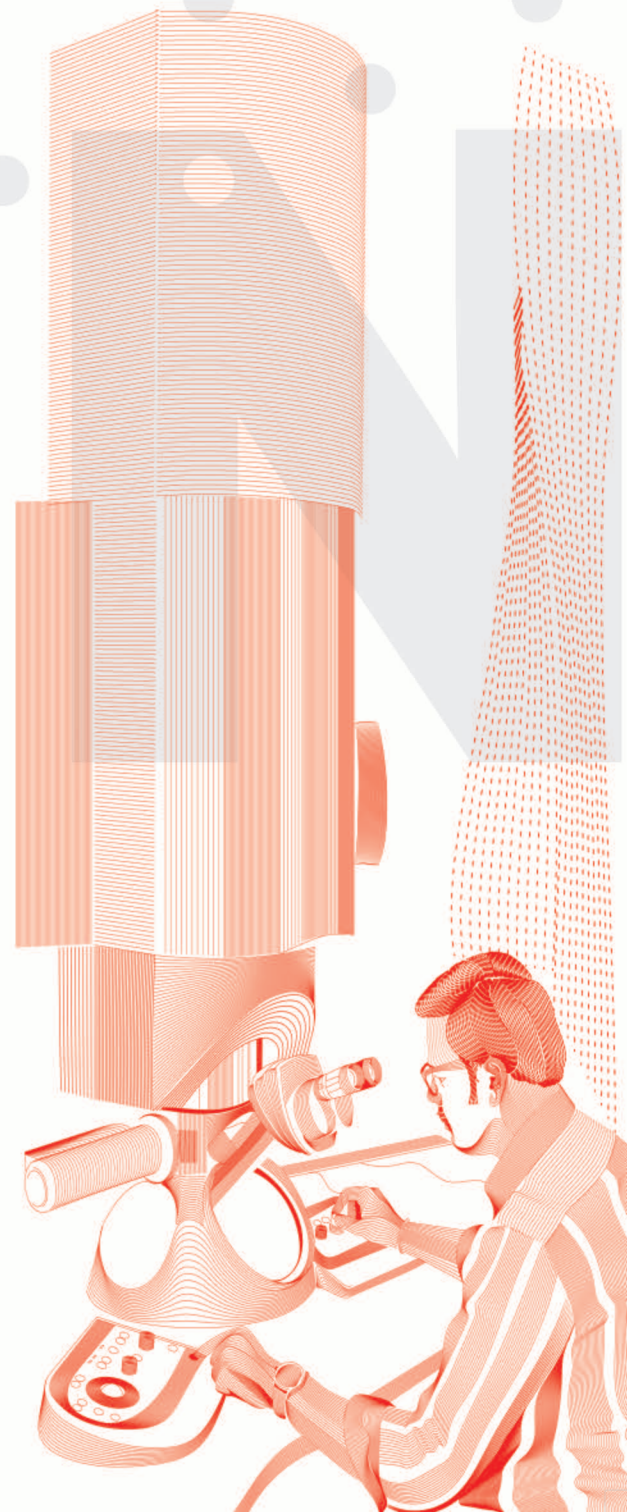
Thematic labs and facilities  
Interdisciplinary research culture

The most striking feature of the Centre is its interdisciplinary research culture. Being housed within the IISc campus gives the Centre further access to world-class academic expertise in many disciplines- from Mathematics and Computer Science to Chemistry, Physics, and many others. The researchers benefit from this unusually high degree of interdisciplinary synergy.

Research by students and professors is carried in the various thematic labs and facilities (listed in next page), along with the state-of-the-art national facilities like the National Nanofabrication Centre, Micro- and Nano- Characterisation Facility, Packaging lab and the Systems Engineering Facility.



Advanced Opto-nano-Electronics (A-OnE)  
NEMS  
Optics, nanostructures and Quantum fluids  
Quantum Matter  
Semiconductor Devices  
Multidisciplinary Micro and Nano Systems  
Nanopore Research  
Nanodevices and Sensors  
Functional Thin Films and Electron Microscopy  
Microfluidic Devices and Heterogenous Systems  
MEMS  
Microsystems and Fluctuation Dissipations  
Photonics Research  
A Brain Like Electronics Laboratory (ABLE)  
Crystal Growth  
Polymer Processing  
Photovoltaics and Energy  
Nonlinear Photonics and High Power Laser  
Heterojunction  
Biosensors  
Gas Sensors  
Biophotonics and Bioengineering  
Neuro Electronics





# Core Faculty

## Aditya Sadhanala (Assistant Professor)



PhD - University of Cambridge  
**Advanced Opto-nano-Electronics  
(A-OnE) Laboratory**

Nanofabrication, nano-structured materials, optoelectronics,  
spectroscopy, device engineering  
[sadhanala@iisc.ac.in](mailto:sadhanala@iisc.ac.in)

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## Akshay Naik (Associate Professor)



PhD - University of Maryland, College Park  
**NEMS@CeNSE laboratory**

Nano-/Micro- Electromechanical Systems, NEMS and MEMS  
sensors, Fundamental research in MEMS & MEMS  
[anaik@iisc.ac.in](mailto:anaik@iisc.ac.in)

## Ambarish Ghosh (Professor)



PhD - Brown University  
**QuAN2M Laboratory**

Nanorobotics, Quantum Fluids, Liquid and Superfluid Helium,  
Active matter, Nanobiotechnology, Biophysics, Quantum sensing,  
Plasmonic metamaterials, 2D materials, Optoelectronics  
[ambarish@iisc.ac.in](mailto:ambarish@iisc.ac.in)

## Chandan Kumar (Assistant Professor)



PhD - Indian Institute of Science  
**Quantum Matter Laboratory**

Quantum Sensing, Scanning SET of 2D materials, Quantum  
transport of van der Waals heterostructures, Nanoelectronics,  
Electron hydrodynamics, Low temperature physics, Moire  
superlattice  
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## Digbijoy Nath (Associate Professor)



PhD - Ohio State University  
**Semiconductor Devices Group**

Wide band gap materials and devices, 2D layered semiconductors,  
GaN for microwave and power applications  
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## Gayathri Pillai (Assistant Professor)



PhD -National Tsing Hua University  
**Multidisciplinary Micro and Nano Systems Laboratory**

Acoustics, MEMS/NEMS, Inertial Sensors, MEMS/NEMS  
Nonlinearity, Piezoelectricity, Sensors and Actuators,  
Systems on chip  
[gpillai@iisc.ac.in](mailto:gpillai@iisc.ac.in)

## Manoj Varma (Professor)



PhD - Purdue University  
**Nanopore Research Group**

Solid-state nanopores, nanopore based single molecule DNA and protein sequencing, single molecule sensing using nanopores  
[mvarma@iisc.ac.in](mailto:mvarma@iisc.ac.in)

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## Navakanta Bhat (Professor)



PhD - Stanford University  
**Nanodevices and Sensors Laboratory**

Electrochemical Biosensors, SERS & Lab-on-a-chip devices, Gas sensors, 2D nanoelectronics with MoS<sub>2</sub> and Graphene, Al/GaN high electron mobility transistors, novel materials and processes for CMOS and MEMS applications  
[navakant@iisc.ac.in](mailto:navakant@iisc.ac.in)



## Pavan Nukala (Assistant Professor)



PhD - University of Pennsylvania

**Functional Thin Films and Electron Microscopy Laboratory**

Correlated Systems, Ferroic Oxides, in situ electron microscopy and spectroscopy, material networks for neuromorphic computing, phase change materials, thin film x-ray diffraction  
[pukala@iisc.ac.in](mailto:pukala@iisc.ac.in)

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## Prosenjit Sen (Associate Professor)



PhD - University of California Los Angeles

**Microfluidic Devices and Heterogenous Systems Laboratory**

Microfluidics, Lab-on-chip, Droplets, Interfacial phenomenon in microfluidics, Fluidic sensors, Heterogeneous integration  
[prosenjits@iisc.ac.in](mailto:prosenjits@iisc.ac.in)

## Rudra Pratap (Professor)



PhD - Cornell University  
**MEMS Laboratory**

MEMS/NEMS, MEMS & NEMS Sensors, Vibratory Mechanobiology,  
Materials for MEMS/NEMS, Fundamental research in NEMS/MEMS,  
Transduction-targeted material development  
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## Saurabh Chandorkar (Assistant Professor)



PhD - Stanford University  
**Microsystems and Fluctuation Dissipations Laboratory**

MEMS/NEMS, Materials for MEMS/NEMS, MEMS/NEMS sensors,  
fundamental research in MEMS/NEMS, Capacitive, Piezoelectric  
and Microfluidics package, phononic crystals, resonators &  
oscillators  
[saurabhc@iisc.ac.in](mailto:saurabhc@iisc.ac.in)

## Shankar Kumar Selvaraja (Associate Professor)



PhD - Ghent University-IMEC  
**Photonics Research Laboratory**

Photonics Research Laboratory  
Photonics, Optical Sensing, Integrated Optics, Lasers, Optical  
Data/Tele-communications, on-chip photonic sensors, Photonic  
integrated Circuits  
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## Sreetosh Goswami (Assistant Professor)



PhD - National University of Singapore  
**A Brain Like Electronics Laboratory (ABLE)**

Brain-inspired computing, Artificial intelligence, Neuromorphic  
circuits, In-memory computing, Molecular electronics,  
Nanoelectronics, Nonlinear dynamics and chaos  
[sreetosh@iisc.ac.in](mailto:sreetosh@iisc.ac.in)

## Srinivasan Raghavan (Professor & Chair)



PhD - Pennsylvania State University  
**Crystal Growth Group**

Thin Film growth, nano-structures and bulk crystals, Growth of group IIIA (Ga, In, Al) nitrides, oxides & 2d materials, Stress and defect structure evolution, Effects of stress on crystal properties and device performance.  
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## Supradeepa V R (Associate Professor)



PhD - Purdue University  
**Nonlinear Photonics and High Power Laser Laboratory**

Photonics, Optical Data/Tele-Communications, Nonlinear Optics in Fibers and Integrated Nanophotonic Devices, Fiber Lasers and Amplifiers, Optical Frequency Combs and Ultrafast Lasers, Optical Signal Processing.  
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## Sushobhan Avasthi (Associate Professor)



PhD - Princeton University  
**Heterojunction Lab**

Thin-film solar cells, photodetectors, thin-film transistors, functional oxide electronics, atomic layer deposition, pulse laser deposition, large-area printable electronics, and advanced optoelectronic characterization  
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## Vini Gautam (Assistant Professor)



PhD - Jawaharlal Nehru Centre for Advanced Scientific Research  
**Neuro Electronics Laboratory**

Neuroengineering, neural interfaces, neural tissue engineering, nanobiotechnology, bioelectronics, biomaterials  
[vini@iisc.ac.in](mailto:vini@iisc.ac.in)

# Visiting Faculty

## M M Nayak (Emeritus Professor)



PhD - Indian Institute of Science  
**Former Director, LVPO, ISRO, Dept. of Space**

MEMS packaging, Pressure Transducers,  
Temperature sensors, System Integration,  
Testing, Calibration  
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## R Muralidharan (Visiting Professor)



PhD - Indian Institute of Science  
**Former Director, Solid State Physics Laboratory, DRDO**

Electronics, III-Nitrides, High power RF devices,  
GaN Technology.  
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## S A Shivashankar (Visiting Professor)



PhD - Purdue University  
**Former Professor at CeNSE, IISc**

Chemical synthesis of nanomaterials,  
nanostructured thin films, development  
of chemical precursors, Lead role in INUP  
& I-STEM, extending CeNSE facilities to  
external researchers

[shivu@iisc.ac.in](mailto:shivu@iisc.ac.in)

## Outreach @ CeNSE

Indian - Science, Technology and Engineering facilities map (I-STEM)

I-STEM is a web portal, supported by the Govt. of India, hosting a national and regional “inventory of resources” by the Govt. of India, to match users with the resources they need, in an efficient and transparent manner. This will lead to a leap in R&D productivity and greatly enhance the effectiveness of public investment.

Through I-STEM, a user can make a reservation for using a desired facility, at a prescribed user fee, which depends on whether the user is from the academia (and whether s/he has a research grant), a public institution, or from industry. A panel of experts when formed over time to help users (via the Web) to make the most informed use of resources made available through I-STEM.

For more details, please visit <https://www.istem.gov.in/> or download the app (I-STEM) from Google Play Store.





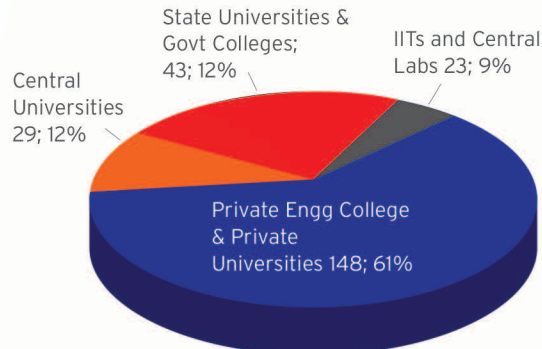
# Outreach @ CeNSE

## Indian Nanoelectronics Users Program (INUP & INUP-i2i)

Indian Nanoelectronics Users Program - idea to innovation (INUP-i2i) is a joint program run by CeNSE@IISc, IITB, IITG, IITM, IITKGP & IITD, and funded by the Ministry of Electronics and Information Technology (MeitY), Govt. of India for accelerating research and development in nanoelectronics in India. The program provides familiarization workshops and hands-on-training to qualified and motivated researchers in academia in state-of-the-art facilities.

**INUP funded by the Ministry of Education, Govt. of India, provides basic lecture series training and advanced training (hands-on) to qualified and motivated researchers in the academia at two state-of-the-art facilities at CeNSE.**

Through these programs, the participants get to carry out their research project that is selected on a competitive basis. Experienced technologists and domain experts assist them, making it possible for aspirants in even remote corners of India to be engaged in very current R&D.



- 39 Workshops
- 66 Trainings
- 665 Projects
- 880 Institutes
- 5324 Manpower
- 327 Publications
- 469 Theses
- 23 Patents

# Outreach @ CeNSE

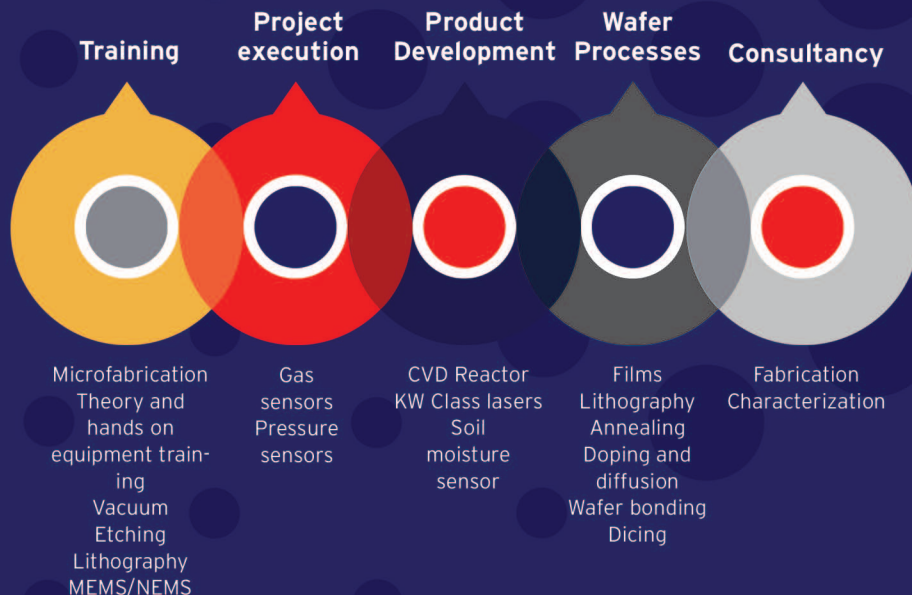
CeNSE DBT Nano-Biotechnology Alliance (C-DNA)



C-DNA is a novel training program funded by the Department of Biotechnology, which combines theoretical lectures and hands-on training on nanofabrication and characterization tools, aimed at researchers from biology or medical background (PhD students, post-doctoral fellows, faculty, medical doctors, postgraduates, biologists) interested in pursuing research in nanobiotechnology. The program is aimed at catalysing research and education in nanobiotechnology across the entire country (especially in places with minimal availability of facilities) with a focus on the engineering aspects of this interdisciplinary field.

For more details, <http://cdna.cense.iisc.ac.in/>

# Services @ CeNSE



## Industry Interface @ CeNSE

Industry Affiliate Program - IAP

Industry affiliate program (IAP) is engineered to bring industry on board at CeNSE and work with them as extended teams. This initiative has increasingly become a critical component of our innovation system with multiple high-tech industries joining hands with us. IAP members at CeNSE get handheld privileges of facility usage, consultancy & research projects with faculty, training, student internships, networking, distinguished lectures, and visits to CeNSE and IISc.

To know more visit, <http://www.cense.iisc.ac.in/content/industry-affiliate>

**rakon**

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Centum Electronics Limited  
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**cyti**



**L&T Technology Services**

  
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**APPLIED MATERIALS**<sup>®</sup>

**भारत इलेक्ट्रॉनिक्स**  
**BHARAT ELECTRONICS**



**L Tulasi Gandikota**

Lead, Industry Interface, CeNSE

CEO, INCeNSE, Karnataka Govt. sponsored Incubator for nanotechnology startups

lgandikota@iisc.ac.in

# Industry Interface @ CeNSE

## Industry Interface

CeNSE engages with various companies for research collaborations, student hiring, training, facility usage and M.Tech fellowships



wistron

3M



AMD



Honeywell

ASML



Rambus

space Associates, Inc.  
Ann Arbor, MI USA  
www.k-space.com

MOS  
Ultra-Scan

APC



# Incubation @ CeNSE

A speciality incubator focussed on nano, semiconductor hardware deeptech sartups

From Lab-to-market, INCeNSE provides the best launchpad for hardware deep-tech startups.

With the birth of every great idea is also born the challenge of translating that idea into a market ready product. Access to deep resources, ace acceleration programs and an innovative community of experts is at the heart of any successful transformation.

Funded by the Govt. of Karnataka and birthed & housed at the Centre of Nano Science and Engineering, INCeNSE provides a fertile ground for hardware deep-tech startups in nanotechnology and science.

Access to state-of-the-art labs and fabrication facility that are teeming with the best technologists and faculty with deep domain knowledge will ensure the journey of your nano idea catches the right pace.



## Opportunities @ CeNSE

Available opportunities

### Faculty positions

CeNSE strongly encourages women faculty candidates to apply.

We invite applications for faculty positions. The candidates should have an excellent academic and research record with at least 3 years post-PhD research experience. We pursue interdisciplinary research across several disciplines mentioned in our research focus areas.

All applications for faculty positions have to be routed through the portal at the link:

<https://recruitment.iisc.ac.in/frp/>

For more details, visit, <http://www.cense.iisc.ac.in/content/careers>

### Technical positions

Many technical positions like facility technologists and technology managers at the central facilities; project assistants and project associates for various projects; software development, etc keep getting advertised. For regular updates, follow <http://www.cense.iisc.ac.in/content/careers>

### PostDoc positions

CeNSE is a platform for interdisciplinary research across several disciplines with focus on micro-nanoscale science and engineering. Candidates with excellent academic and research record are encouraged to submit applications for academic and industry sponsored postdoctoral positions. Applicants from all research fields relevant to micro-nanoscale science and engineering are encouraged to apply.

### Administrative positions

Visit the page, <http://www.cense.iisc.ac.in/content/careers> for regular updates on new openings.

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