University Science Instrumentation Centre (USIC)
In collaboration with
Special Centre for Nanosciences (SCNS)
Jawaharlal Nehru University (JNU), New Delhi-67

Organizes a
Two days "Hands-on-Training" on
PCB–to–MMIC Design, Fabrication & Testing
Lab-to-Fab Workshop

28-29nd April, 2025

Venue: Convention Centre, Lecture Hall, JNU

COURSE BENEFITS

- You will be awarded with the Course Completion Certification
- You will be trained by the Industry and Academia experts
- You will gain the knowledge on the PCB (Printed Circuit Board)-to-MMIC (Monolithic Microwave Integrated Circuits) design concepts which will give you a competitive edge over your fellow graduates when applying for a Job
- You will learn about the different PCB types and Designs, Schematic design, Component layout, Placement methods, and Routing Techniques.
- You will be able to create a Novel Electronic product (Product Development Course)
- Companies that hire you will not have to undergo a lengthy training program as you have already been taught about the PCB design concepts and intensive hands-on training on designing a complete Electronic Product from scratch.

ORGANIZERS

Patron:

- Hon. VC Prof. S Dhulipudi Pandit, JNU

Co-Patrons:

- Prof. Brajesh Kumar Pandey (Rector-I), JNU
- Prof. Dipendra Nath Das (Rector-II), JNU

Chair:

- Prof. Bijoy Kumar Kuanr, Chairperson, SCNS, JNU

Co-Chair:

- Mr. Sanjeev Kumar, Director, USIC, JNU

Conveners:

- Dr. Sandeep Kumar, SCNS, JNU
- Dr. Neha Paras, SCNS, JNU

Co-Conveners:

- Sh. Amrish K Gajjar, USIC, JNU
- Sh. Jitender Kumar, USIC, JNU
- Sh. Vinod Kumar, USIC, JNU

Core Organizing Committee:

- Prof. Satyendra Singh, SCNS, JNU
- Dr. Pankaj Thakur, SCNS, JNU
- Dr. Balaji Birajdar, SCNS, JNU
- Dr. Pratima Solanki, SCNS, JNU
- Dr. Tulika Prasad, SCNS, JNU
- Dr. Prakash Kanoo , SCNS, JNU
- Dr. Vinod Kumar, SCNS, JNU

REGISTRATION FEE DETAILS

- UG & PG Students : Rs. 2500 + 18% GST
- PhDs/Faculty/ Postdoc : Rs. 3000 + 18% GST
- Industry: Rs. 5000 + 18% GST
- Last Date of registration : 8th March 2025

Note: Open for 50 participants only (first come first serve basis)

Registration at:

https://docs.google.com/forms/d/1Ji_SUtVZ1SM61d1FOq6k9LmsaSAJ6UyQRfn5ZmFZccI/edit

Contacts:
For general query, please contact us at
Mob no.: 9654463102
Email: pcb.scns123@gmail.com

ABOUT THE WORKSHOP

In the line of Honourable Prime Minister's Skill Development Program for the Unnat Bharat Abhiyan which is inspired by the vision of transformational change in rural development processes by leveraging knowledge institutions, this training includes fundamental concepts of MMIC/MIC PCB design, introduction to design schematic and layout using PCB design software. Hands-on training will be given on source schematic, placing and routing the board and testing the fabrication data. Training session also includes demo on PCB fabrication using PCB making set-up. The training program will be useful for participants to develop their hardware circuits in project works. Participants will gain practical skills in activities such as circuit construction, exporting circuits to PCB layout, working with through holes and vias, and performing routing, among other techniques. This may facilitate to go for small scale industries set-up or to fulfil established companies represent skilled labours.

ABOUT USIC & SCNS, JNU

Jawaharlal Nehru University (JNU) is a public Central university ranked #2 by NIRF (2024) & NAAC Accredited JNU A++ grade. The University Science Instrumentation Centre was established in Jawaharlal Nehru University in 1979 under the scheme of UGC for providing in-house facilities of Design / development / fabrication and maintenance of sophisticated scientific instruments and the training of researchers / teachers and technical staff of the University involved in the technical activities. While Special Centre for Nanoscience (SCNS) is an inter-disciplinary research and teaching Centre at JNU. The Nano science facility comprises several state-of-the-art fabrication/thin film deposition instruments and characterization laboratories facilities. The research program of the SCNS has been focused on both thematic areas of national importance and basic research with significance to the development of Nanoscience and Nanotechnology.

The Participation fees for the above programmes will be accepted only through e-transfer/RTGS/NEFT

Bank detail as under for e-transfer:

1. Bank Account No.: 35404650496
2. Bank Address: State Bank of India, JNU, New Delhi-110067
3. Beneficiary Name: JNU Sponsored Seminar & Conference
4. IFSC Code: SBIN0010441
5. MICR Code: 110002428

SCAN TO REGISTER

PROGRAMME CONTENTS:

1. Introduction to basic fundamentals of Monolithic Microwave Integrated Circuits (MMICs)/Microwave Integrated Circuits (MICs)
2. Design, Simulation, Understanding PCBs, Single layer and multi-layer PCBs, Holes, Vias and Layers Limitations of passive circuits with examples
3. Hands-on Training on PCB Prototyping with design examples: Process flow, mask design and photolithography
4. Hands-on Training on Major Measurement equipments such as network analyser, spectrum analyser etc.
5. Future perspectives of MMICs/MICs

WHO CAN ATTEND:

- Candidates having or pursuing B.Tech/M.Tech/MS in (ECE & EEE) and/or BSc/MSc/PhD degree in physics/electronics

CURRENT STATS AND FUTURE GROWTH

- The PCB market is expected to grow to approximately $72 billion in 2026
- According to the survey, approximately 55% of the market represents the market portion among the five top PCB design firms. The forecast for sales by 2029 is estimated at $7.92 billion for the computer-aided design market.
- A large organization in India is looking into the possibility of establishing a semiconductor assembly unit which is likely to become functional soon, will create more than 5,000 jobs. This move will boost “Make in India” initiative in the field of electronics. It encourages companies to develop, manufacture and assemble products made in India
- The market is expected to surge in the coming years, due to the rise in the sales and number of electric vehicles, worldwide.
- Electronics production has the potential to reach up to US$260Bn and generate 1Cr jobs providing an alternate source of employment to IT sector.

Associations

Ambition Technologies

RESOURCE PERSONS

- Prof. Bijoy Kumar Kuanr, SCNS, JNU, New Delhi
- Dr. Sandeep Kumar, SCNS, JNU, New Delhi
- Dr. M. Prasad Gupta, Lead Engineer, IIT Madras
- Dr. P Gorre, Lead Engineer, IIT Hyderabad
- Dr. Mukesh Khandelwal, Department of Electronic Science, Delhi University
- Dr. Ashwani Kumar, Department of Electronic Science, Delhi University
- Dr. Vikrant, IIT-CARE, Delhi
- Mr. Amrish Kumar, USIC, JNU
- Mr. Jitender Kumar, USIC, JNU
- Mr. Vinod Kumar, USIC, JNU
- Dr. Monika, Delhi University, Delhi
- Mr. Prashant, Delhi University, Delhi
- Ms. Sheetal, Delhi University, Delhi
- Mr. Pushpendra, JNU, Delhi

Research Facilities

Microwave Signal Processing Devices

SCNS, JNU

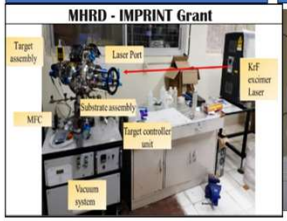
MMICs are used in Transmitter & Receiver circuits: for Civilian use like (i) mobile phone, (ii) tracking and landing planes in severe weather conditions, & in Military use In Phased-array antenna system, etc.

Fabricated MMICs

Filter, Phase shifters, isolators, Mixer, Directional coupler, Power Limiter, S/N Enhancer, Resonator, Delay lines, Comb-frequency Generator, Printed Antenna Arrays, Phased Array Antenna

Pulse Laser Deposition System

MHRD - IMPRINT Grant

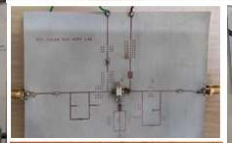


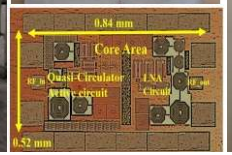
Sputtering & E-Beam deposition system

SERB Grant

Vector Network Analyzer & Spectrum Analyzer

USIC





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