



INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of Education initiative)



MoE's
INNOVATION CELL
(GOVERNMENT OF INDIA)



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अभियान
1947 TO 2047



Institute's Innovation Council
Pt. Ravishankar Shukla University Raipur
IIC - PRSU

Institute Innovation Council

**Pt. Ravishankar Shukla University, Raipur
Chhattisgarh – 492010**

(Under The Initiative of Ministry of Education's Innovation Cell)

Aishe Code: U-0093

IIC ID: IC201810375

Report

Institute Innovation Council

Pt. Ravishankar Shukla University, Raipur

Collaboration with

S.o.S in Electronics and Photonics, PRSU, Raipur

Has organized

**One day exposure visit to PCB Design and
Fabrication Facility**

On

27th May, 2025

At

**PCB Design and Facility Lab, S.o.S in Electronics
and Photonics, PRSU Raipur**



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POSTER



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in association with

S.o.S in Electronics and Photonics
Institute of Renewable Energy Technology and Management
Pt. Ravishankar Shukla University, Raipur

Welcomes You

to the exposure visit to

“ PCB Design and Fabrication Facility”

on

May 27, 2025 | 10:30 AM Onwards



Venue

Computer Lab, S.o.S in Electronics , PRSU, Raipur



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Details of Event

Name of Program Type	Field/Exposure Visit to Incubation Unit/Patent Facilitation, Centre/ Technology Transfer Centre such as Atal Incubation Centre (IIC Calender Activity 2024-25)
Name of Program Theme	Visit to PCB design and Fabrication facility at S.o.S in Electronics and Photonics department
Objective	To provide practical exposure to incubation, patent facilitation, and PCB design & fabrication.
Benefit	Provides real-world exposure, boosts innovation, and builds skills in PCB design and IPR management.
Duration of Activity	8 hours
Mode of Event	Offline/ Hybrid
No. of Students Participants	21
No. of Faculty Participants	4
No. of External Participants	0
Expenditure Amount	600

10th Aug



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About the Event

On May 27, 2025, a one-day exposure visit to the PCB Design and Fabrication Lab at the School of Studies in Electronics and Photonics was organized for 21 students from the IRETM and Electronics departments. The visit was coordinated by faculty members Madhu Allalla and Mohnish Kumar Sahu, who ensured that the students received comprehensive insights into the innovative processes involved in PCB design and electronics fabrication. The primary objective of the visit was to provide participants with hands-on exposure to modern PCB design techniques and the photolithography process, emphasizing the integration of innovation in electronics.

The session began with an introduction to the fundamentals of PCB design, including circuit layout planning, schematic design, and the selection of materials suitable for electronic components. The faculty explained the importance of designing compact, efficient, and reliable PCBs, highlighting how innovative design approaches can optimize performance while reducing cost and material usage. Students were introduced to software tools commonly used in PCB design, demonstrating how digital simulations and layouts are critical in modern electronics prototyping.

A significant portion of the visit focused on the photolithography process, a cornerstone technique in PCB fabrication. The students learned how photolithography enables precise pattern transfer from a photomask onto the PCB substrate, allowing for intricate circuit designs. The faculty elaborated on the step-by-step process: cleaning and preparing the substrate, coating it with a photosensitive material, exposing it to ultraviolet light through a mask, and developing the pattern. This technique not only ensures high precision but also enables the fabrication of multilayered PCBs, which are essential for advanced electronic applications.

The students observed demonstrations of etching processes that remove unwanted copper, leaving only the desired conductive pathways. The session highlighted how innovation in design, such as minimizing trace lengths, optimizing signal paths, and reducing electromagnetic interference, directly impacts PCB efficiency and reliability. Students also learned about drilling vias, solder mask application, and surface finishing, which collectively ensure the durability and functionality of the PCB.

Throughout the visit, faculty coordinators emphasized the link between innovative design concepts and practical electronics applications. Students engaged actively, asking questions about real-world applications, troubleshooting, and emerging trends in electronics innovation. The exposure provided an understanding of how conceptual designs are transformed into tangible, functional electronic circuits, bridging theoretical knowledge with practical implementation.

In conclusion, the visit to the PCB Design and Fabrication Lab provided a rich learning experience, enhancing participants' understanding of electronics design, photolithography, and fabrication processes. It fostered innovative thinking and inspired students to explore creative



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solutions in electronics engineering. By observing the complete PCB development process—from conceptualization and design to fabrication and testing—students gained valuable insights into both the technical and creative aspects of electronics engineering. This exposure is expected to encourage further experimentation, skill development, and innovation among future engineers, equipping them to contribute effectively to the rapidly evolving electronics industry.

Photos



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Conclusion/Outcomes

The one-day exposure visit to the PCB Design and Fabrication Lab provided students with hands-on experience in photolithography and PCB fabrication processes. It enhanced their understanding of electronics design concepts, fostered innovation and problem-solving skills, and motivated participants to apply practical knowledge in real-world projects and future research.

Dr. Kavita Thakur
President, IIC PRSU