



Research Skill Accelerate Program

on

**Product Design and Development for
Sustainable manufacturing**

**Dec 15–Dec 29, 2025
(Two weeks)**



**Organized by
Punjab Engineering College (PEC) Deemed to be University,
Chandigarh
in
collaboration with CSIR-CSIO, Chandigarh & Design
Innovation Center (DIC), IIT Roorkee**

**Supported by
Punjab State Council for Science & Technology, Department
of Science Technology & Environment, Govt. of Punjab**

ABOUT INSTITUTES

Punjab Engineering College (PEC), Chandigarh

With a glorious history spanning over a century, PEC was originally established as Mugalpura Engineering College in Lahore, in undivided India, on November 9, 1921. In late December 1953, the institution relocated to its current campus in Chandigarh.

View More: <https://pec.ac.in/>



Punjab State Council for Science & Technology, Department of Science, Technology & Environment, Govt. of Punjab

Mandate: To Promote Science & Technology for Sustainable Development in the State. In 1971, Shri C Subramaniam, the then Union Minister for Science and Technology and Chairman, National Council for Science & Technology initiated a dialogue with Chief Ministers of all the States emphasizing upon extending support through State Governments to attain developmental goals using Science and Technology. For this, he suggested the establishment of State Science & Technology Councils. View more:

<https://pscst.punjab.gov.in/en>



DIC, Indian Institute of Technology Roorkee

Indian Institute of Technology Roorkee (IIT Roorkee) is among the foremost of the institutes of national importance in higher education. The Design Innovation Center (DIC), named नवोन्मेष, is one of the twenty DICs being set up in the country by the Ministry of Education (MOE), Government of India under the national initiative for setting up of Design Innovation Center, Open Design School and National Design Innovation Network. View more:

<https://www.iitr.ac.in/dic/>



CSIR-CSIO, Chandigarh: Central Scientific Instruments Organisation (CSIO), a constituent unit of Council of Scientific & Industrial Research (CSIR), is a premier national laboratory dedicated to research, design, and development of scientific and industrial instruments. It is a multi-disciplinary and multi-dimensional apex industrial research & development organization in the country to stimulate the growth of the Instrument Industry in India covering a wide range and applications.

View more: <https://www.csio.res.in/>



ABOUT THE PROGRAM

The 'Research Skill Accelerate Program (RSAP)' aims to expand research base in the State by providing opportunity to faculty members from colleges of Punjab to undertake specialized 15 days training at premier Research Institutions in advanced research and instrumentation, technology development, research paper writing, and project grant preparation. By engaging faculty in research environments, the program seeks to empower them with the knowledge and skills required to foster innovation, improve teaching outcomes, and build a stronger research culture in their respective institutions.

SCOPE OF THE PROGRAM:

Under the Program, faculty members (as Trainees) to be selected from the State's Degree and Technical Colleges (both Government and Self-Financed) will undergo 15-days training programs in advanced research areas. These training sessions will be conducted by scientists and experts in their Institutions, leveraging the advanced facilities and expertise available in their laboratories. The program intends to create a platform where selected trainees can acquire practical insights into emerging technologies, methodologies, and tools that they can later integrate into their teaching and research activities.

PROGRAM OBJECTIVE

- ❑ To introduce product design methodologies for sustainability.
- ❑ To identify the need of a new product, the product life cycle, the product design processes and the application of Value Engineering principles in product design.
- ❑ To explore eco-friendly materials, lifecycle analysis, and circular economy principles.
- ❑ To provide hands-on training on design tools & software, 3D printing, non-conventional machining processes, sustainable manufacturing methods, 3D modelling, CNC etc.
- ❑ To visit the industries for exposure to the robotics & automation, exposure to the state-of-the-art facilities in research institution, and sustainable practices.
- ❑ To bridge the gap between academic research and industry best practices in sustainable manufacturing.
- ❑ To improve the collaborative learning and networking among academia, industry, and research institutions.

PATRONS



Professor Rajesh Kumar Bhatia
Director, PEC Chandigarh

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TOPICS

- ❑ Product design, tools & life cycle
- ❑ Sustainable product development
- ❑ Eco-friendly materials & green manufacturing
- ❑ Green composites & green technologies
- ❑ Additive manufacturing (3D printing)
- ❑ Advanced machining & hybrid manufacturing
- ❑ Micro manufacturing technologies
- ❑ Multi-objective optimization techniques
- ❑ Energy-efficient & zero landfill approaches
- ❑ Waste reduction strategies
- ❑ Life Cycle Assessment (LCA) & circular economy
- ❑ Design of Experiments (DOE)
- ❑ Decision-making in product development
- ❑ Robotics, automation & smart manufacturing (Industry 4.0)
- ❑ CNC programming & instrumentation control
- ❑ Prototyping, testing & material characterization
- ❑ Semiconductor fabrication & sustainable materials
- ❑ Advanced semiconductor packaging & integration
- ❑ Bridging research and industry
- ❑ Industry visits: robotics, automation, sustainability
- ❑ Research methodology & collaborations
- ❑ Funding opportunities & intellectual property
- ❑ Technical report writing
- ❑ Research paper writing & publication
- ❑ IP, patents & innovation in design

CONTACT

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TARGET AUDIENCE

This Program is designed for faculty members actively involved in research and teaching. It is ideal for those seeking to enhance their expertise through experts talks, academia-industry collaborations, gain hands-on experience with state-of-the-art facilities and sustainable design and manufacturing practices.

KEY ACTIVITIES

Classroom Learning: Expert talks and interactive discussions.

Hands-on Training: Practical experience to state-of-the-art facilities and advanced manufacturing methods.

Research & Industry Visits: Visits to CSIR-CSIO Chandigarh, BM Packaging Pvt. Ltd, and Brahm Robotics Pvt. Ltd.

REGISTRATION

There is no registration fee to attend the two-week RSAP program. However, interested applicants must register online using the link:



<https://docs.google.com/forms/d/e/1FAIpQLSdItkQVzA6OYLU0nnce0TvsJk6TW2e3p3qJTxr3J8-pFzrHcQ/viewform?usp=header>

Seats are limited to 20 participants, and final selection will be made by a scrutiny committee. Applicants are also required to submit a No Objection Certificate (NOC) from their parent institution.

IMPORTANT DATES

Event	Date
Registration Opens	October 10, 2025
Registration Ends	November 30, 2025
Selection Notification to Participants (via Email)	December 05, 2025
FDP Commences	December 15, 2025