

SERB (KARYASHALA), DST, GoI sponsored

HIGH-END WORKSHOP ON ADVANCED TOOLS FOR COMPOSITE DEVELOPMENT AND CHARACTERIZATION

June 12 to 23, 2023

Organized by

Department of Mechanical Engineering
IIT Bhilai, Raipur-492015



KARYASHALA

The goal of “Karyashala” is to provide hands-on experience and knowledge on advanced tools for composite development and characterization to the young scholars and post graduate students from various universities and colleges to carry out high-end scientific research. The workshop duration will be for two weeks, and the lectures will be delivered by dynamic and pragmatic faculties from various IITs and NITs.

OBJECTIVE

The objective of the workshop is to train PG and PhD students on special equipment used for composite development, processing, characterization, and testing. The Workshop shall cover fundamental aspects and technical background of the following – Fundamental of composites, Composite development and characterization, Mechanical and tribological behaviour of composites. Intense hands-on training shall be provided on the operation and maintenance of following sophisticated equipment – bottom-pouring stir-casting facility with different casting routes, hot extrusion of cast, sample preparation for metallurgical investigations, automatic micro-indentation hardness facility, optical microscopy – image processing through ImageJ software, SEM – principles and demo.

ELIGIBILITY

The scheme is meant to support PG and PhD students who are having a strong orientation towards scientific and engineering research and are pursuing their degree from university/institution within India in the fields of engineering technology and science and having an interest in scientific research. The event is only to support/train potential PG and PhD (M.Tech/M.E/M.Sc./M.S./PhD) level students in their endeavours for pursuing a scientific career.

IMPORTANT POINTS

- The period of Karyashala is for two weeks.
- The candidates will have hands-on experience and knowledge on advanced tools for composite development and characterization for its application in engineering science industries.
- During the hands-on and demo sessions of the workshop each group of participants shall be asked to work on a specific problem that shall be defined during the initial days of the sessions and will try to get some inferences towards the end of workshop.
- A certificate regarding successful completion of Karyashala shall be issued to the candidates on satisfactory completion of the event and on submission of the assignment report and 100% attendance.
- Candidates not completing the requisite period will not be issued any certificate.

ABOUT THE DEPARTMENT

IIT Bhilai was established in 2016 and Mechanical Engineering department is one of the first established department of IIT Bhilai and offers B.Tech, M.Tech and PhD programs in various fields of engineering and advanced research. The core department offers a thorough and well decorated academic structure for theoretical understanding and their practical applications. Mechanical engineering department has efficiently combined the traditional and futuristic laboratories to inculcate technological skills among the pursuing students. The department conducts various EDP/MDP/FDP/workshops programs along with strong capabilities in executing R&D and consultancy projects for government and industry. The department is having state of the art labs and infrastructure facilities to offer such high-end workshops.

HOW TO APPLY

- Applicants should fill the application form given in page no. 2.
- Applicants must produce a No Objection Certificate given in page no. 3 duly signed by their supervisor/head of the department/head of the institute.
- The last date to apply: May 29, 2023
- Notification to selected participants: May 31, 2023
- The selected candidates will have to acknowledge and accept the offer through return email by June 1, 2023, failing which, the candidature will be cancelled.
- There is **NO REGISTRATION FEE** for the participants.

TOPICS COVERED DURING THE WORKSHOP

➤ Fabrication Methods:

- Liquid state fabrication - Stir Casting Route
- Solid state fabrication – Friction Stir Processing, Hot extrusion

➤ Characterization Techniques:

- Optical Microscopy
- Electron Microscopy
- X-Ray Diffraction

➤ Testing Methods:

- Microhardness
- Tensile Testing
- Compression test

NOTE

The event is limited to 15 nos. of PG and PhD students only. The selection of the eligible students will be done based on ‘first-come first-serve’ basis. Accommodation at hostel, food and travel reimbursement to and fro by train by shortest route in 3rd Class AC will be provided from the SERB fund to the selected candidates as per GoI norms.

Organizers

Dr. Jose Immanuel R, Assistant Professor, IIT Bhilai
Dr. Rahul Jain, Assistant Professor, IIT Bhilai

Coordinators

Mr. Ilyas Hussain, Mobile: 8982615958
PhD Scholar Email: ilyash@iitbhilai.ac.in
Mr. P Jaya Teja, Mobile: 8790508072
PhD Scholar Email: pillij@iitbhilai.ac.in
Mr. Shivraj Gahir, Mobile: 8763275755
PhD Scholar Email: shivrajgahir@iitbhilai.ac.in

Workshop Venue



IIT Bhilai, GEC campus, old Dhamtari road,
Sejbahar, Raipur-492015, Chhattisgarh