

Introduction

Composite materials have large scale commercial applications in marine applications, aerospace, automotive, marine, sporting goods, infrastructure, energy storage, biomedical etc. In the recent years, the development of new and improved composites manufacturing processes has caused unlimited product development opportunities. The subject of manufacturing will be dealt within the frame work of composite materials. The design portion includes an explanation of the concepts involved in the detailed design analysis of composites. Concepts of mechanics needed to translate into a mathematical representation of the physical reality through boundary value problems by using commercial Finite Element Analysis software. Participants will be able to extend the capabilities of ANSYS by use of ANSYS Parametric Design Language (APDL). This course will cover the manufacturing and product development knowledge related to composites.

Objective

- Expose the participants to the concept of composite materials and their applications.
- Introduce various manufacturing techniques pertaining to composite materials.
- Discuss various testing and characterization techniques for composites
- To introduce the composite mechanics and composite design concepts using Finite Element Method and mesh independent computational techniques.
- To implement ANSYS Parametric Design Language (APDL) for composite structures.

Eligibility

The course is open to Faculty Members, Students from Engineering Institutes / Colleges / Polytechnics and Practicing Engineers from Industries and R&D Institutions. However, seats are limited.

Course Content

- Introduction to Composite Materials: Basics and Fundamentals.
- Materials used in Composites
- Engineering applications of Composite Materials.
- Manufacturing techniques for Polymer Matrix Composites, Metal Matrix Composites and Ceramic Matrix Composites
- Testing and Characterization of Composites
- Mechanics of Composite Materials
- Introduction to Finite Element Method and Mesh-free technique for the design analysis of Composite materials
- ANSYS Parametric Design Language (APDL) Programming for Composite Structures
- Case studies

Subject Experts

The resource persons for this course are experts from IITs having rich experience in composite materials and their applications.

Dr. Apurbba Kumar Sharma, IIT Roorkee

Dr. Inderdeep Singh, IIT Roorkee

Dr. Akhilendra Singh, IIT Patna

Dr. Rajeev Kumar, IIT Mandi

Dr. Rahul Vaish, IIT Mandi

Dr. Vishal Singh Chauhan, IIT Mandi

Dr. Viswanath Balakrishnan, IIT Mandi

Dr. Mohammad Talha, IIT Mandi

Dr. Himanshu Pathak, IIT Mandi

Dr. Sunny Zafar, IIT Mandi,

Dr. Sumit Sinha Ray, IIT Mandi

Registration Fee

Practicing Engineers: ₹ 8,000/-

Faculty Members: ₹ 6,000/-

Students: ₹ 3,000/-

Registration fee includes course material, working lunch, refreshments and accommodation (sharing basis at hostel).

Date & Time of Registration: 15th January 2018, 9AM at Academic block IIT Mandi, Kamand Campus.

5 Days Workshop on Composite Materials in Engineering Applications: Design and Manufacturing Perspective (15-19 January 2018)

Registration form

Name.....

Qualification

Designation..... Experience

Organization.....

Address.....

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Phone/Mobile No

E – Mail

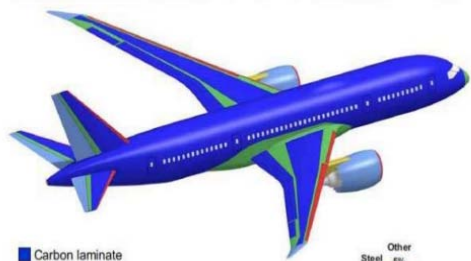
Payment Details

Demand Draft/ NEFT UTR No.....

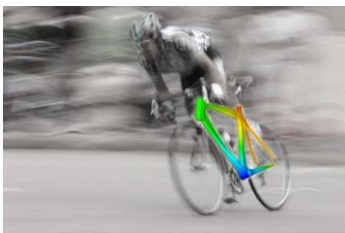
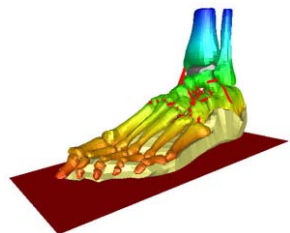
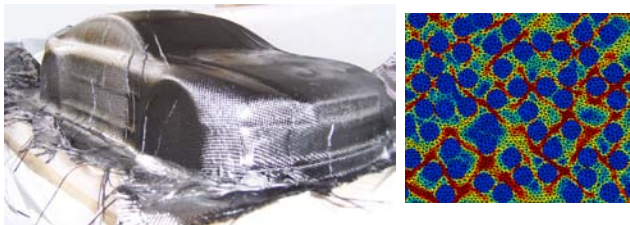
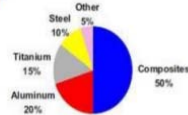
Dated..... Amount.....

Date:..... Signature.....

Note (If Any):



Carbon laminate
Carbon sandwich
Fiberglass
Aluminum
Aluminum/steel/titanium pylons



General Information about Institute

IIT Mandi campus is located in the forested hills of Kamand on the banks of the Uhl river, a tributary of River Beas. IIT Mandi is an autonomous premier engineering and technology institute located in Mandi, Himachal Pradesh. It was established in 2009 by the Ministry of Human Resource Development, Government of India.

The focus of IIT Mandi is to spearhead cutting edge research and development of technologies needed by the world in the years to come. Research groups work together in creating and harnessing the newest technologies needed to serve the people of the region and the country, and to tackle problems of global importance. In order to achieve excellence and high impact locally and globally, IIT Mandi focuses on strongly foster inter-disciplinary R&D. With a view to innovating sustainable technologies for widespread use, IIT Mandi encourages strong Humanities and Social Sciences participation in technology R&D.

How to Apply

The duly filled Registration Form along with the Registration Fees (see fee details overleaf) should reach to the coordinator on or before 15th November 2017. Intimation of selection will be communicated to the participants by 1st December 2017. Fee is payable in advance by Demand Draft in favour of “The Registrar, IIT Mandi” payable at Mandi, Himachal Pradesh or electronic transfer through NEFT.

Contact Address for correspondence

Dr. Sunny Zafar and Dr. Himanshu Pathak
Workshop Coordinators,
School of Engineering,
Indian Institute of Technology Mandi,
Kamand – 175005, Mandi, India
Phone: +91 1905 267 268/224
Email: sunnyzafar@iitmandi.ac.in
himanshu@iitmandi.ac.in

5 Days Workshop on Composite Materials in Engineering Applications: A Design and Manufacturing Perspective (15-19 January 2018)



Coordinators

Dr. Sunny Zafar
Dr. Himanshu Pathak

School of Engineering,
Indian Institute of Technology Mandi,
Kamand 175005, Mandi, Himachal Pradesh, INDIA