5 – Day Online

Faculty Development Program (FDP)

on

ADVANCES IN NOVEL COMPOSITE MATERIALS: FABRICATION, ANALYSIS AND OPTIMIZATION

(6th -10th, September, 2021)

Registration Form

1. **Name** _
2. **Designation** _
3. **Department** _
4. **Institution/Organization** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
5. **Address** _
6. **E-mail Address** _
7. **Mobile No.** _
8. **Telephone No.** _

Signature of Applicant

Paste Recent Color Photograph here

Note: The participants are advised to apply online at AICTE ATAL registration portal https://atalacademy.aicte-india.org/signup on or before 25th August, 2021 for the final registration.

CHIEF PATRON

Prof. P.K. Jain Director, NIT Patna

PATRON

Prof. S. K. Verma Dy. Director, NIT Patna

ADVISOR(S)

Prof. Sanjeev Sinha	**Dean (Academic)**
Prof. A. N. Sinha	**Dean (Faculty Welfare)**
Prof. P. Chandra	**Dean (Student Welfare)**
Prof. L. B. Roy	**Dean (R & C)**
Prof. Fulena Rajak	**Dean (Plan.& Dev.)**

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ADVANCES IN NOVEL COMPOSITE MATERIALS: FABRICATION, ANALYSIS AND OPTIMIZATION

(6th -10th, September, 2021)

Organized by

Department of Mechanical Engineering

NATIONAL INSTITUTE OF TECHNOLOGY PATNA

Ashok Rajpath, Patna, Bihar – 800 005, INDIA

Sponsored by

AICTE Training And Learning (ATAL) Academy

All India Council for Technical Education

ABOUT NIT PATNA

National Institute of Technology Patna (NITP) is the 18thNational Institute of Technology created by the Ministry of Education, Government of India after rechristening the erstwhile Bihar College of Engineering Patna on 28.01.2004. NIT Patna marked its humble beginning in 1886 with the establishment of pleaders survey training school which was subsequently upgraded to Bihar College of Engineering in 1924. This made this Institute the 6th oldest Engineering Institute in India. The Institute is situated on the south bank of the holy river Ganges behind Gandhi Ghat (where the ashes of Mahatma Gandhi were immersed in river Ganges). The campus has a picturesque view with its historic building presenting a spectacle of architectural delight and natural beauty. The Institute imparts high level education, training, research and development in science, engineering, technology and humanities along with high quality education and values at UG, PG and Ph.D levels. At present, the Institute has six disciplines offering degree courses viz. Architecture, Civil Engg., Computer Science & Engg., Electrical Engg., Electronics & Communication Engg., and Mechanical Engg., and well-established departments of Physics, Chemistry, Mathematics, Humanities and Social Science.

OVERVIEW OF THE FDP

The composite materials are the best alternative of conventional material due to their high specific strength and stiffness and tailorable material properties. Their application for the fabrication of various structures and structural components is increasing day by day, particularly in weight-sensitive industries. Additionally, the sound knowledge of structural property can help more to explore its application. The structural characteristics can be obtained either theoretically or experimentally. Theoretical investigations using the analytical, exact solution, etc. become complex as the complexity increases in terms of geometry. Finite Element Method (FEM) is one of the emerging versatile and powerful tools used for the complex boundary value problems encountered in the advanced composite structure.

Additionally, the exponential development in computation capability in the last decades, the optimization of structures through various classical mathematical algorithms and techniques evolved rapidly. These advancements enabled the design engineers to deal with the complicated problems efficiently and to produce the best product for specific applications with minimum error. In view of the above, the program is focused on recent advances in the tools and technique of composite material analysis and optimization and by the end of the program, Participants will have a comprehensive understanding of processing, modeling and optimization of composite materials and structures.

LEARNING OBJECTIVES OF THE FDP

After successful completion of the program, the participant will be able to:

1. Know the state-of-the-art in composite materials.
2. Design and develop composite materials for specific applications.
3. Learn the advanced techniques involved in the fabrication of composites.
4. Analyze the static and dynamic behavior of composite structures.
5. Apply optimization techniques in the design and analysis of composite materials and structures

CONTENTS

1. Overview of composites
2. Challenges and opportunities
3. Composite material mechanics
4. Functionally graded material
5. Smart composite material
6. Advanced fabrication techniques
7. Finite element analysis of composites
8. Natural fiber reinforced composites
9. Ceramic matrix and metal matrix composites
10. Tribology of composites
11. Optimization techniques for composites

EXPERT SPEAKERS

Speakers will be from various disciplines of IITs/ NITs/Research Organizations and other institutions of higher learning from different parts of the country.

ELIGIBILITY

1. There is no registration fee for the participants.
2. Faculties, Research Scholars and PG students of Mechanical, Metallurgy, Civil, Applied Mechanics and other relevant departments from AICTE approved institutions are eligible for the Program.
3. Faculty members selected for the program should get the authorization certificates from the Head of the Organization.
4. Participants will be selected on first-come first-served basis.
5. Selected candidates will be intimated by e-mail. Confirmation of participation is to be made by email.
6. The Coordinator's decision will be final in the selection of participants.

IMPORTANT DATES

Receipt of applications: **25th August, 2021**

Information to the selected candidates: **30th August, 2021**

FDP duration: **6th – 10th September, 2021**

TEST AND CERTIFICATE

1. A test shall be conducted at the end of the program.

2. Certificates shall be issued to those participants who have attended the program with minimum 80% attendance and scored minimum 60% marks in the test.