

AICTE Training and Learning (ATAL)
sponsored
5 Days Faculty Development Program
(FDP)

on

Novel Materials: Fabrication,
Design & Optimization

During

20th Sept– 24th Sept, 2021



Organized by

Department of Mechanical Engineering
Veer Surendra Sai University of Technology Burla,
Odisha -768018
www.vssut.ac.in

ELIGIBILITY

The course is open for faculty members of the AICTE approved institutions, research scholars, PG Scholars, participants from Government, Industry (Bureaucrats/ Technicians/ Participants from Industry etc.) and staff of VSSUT Burla.

REGISTRATION

- ❖ Course Registration is free for all participants.
- ❖ No TA/DA will be paid to any participant.
- ❖ Seats are limited (only 200) and the participants will be selected by the organizers on the basis of availability of first come first serve basis.
- ❖ On completion of the course an objective/quiz based assessment of all participants will be done and certificates will be awarded to successful participants by respective ATAL Academy.
- ❖ Registration mode : online through the link provided on ATAL Academy website (Course Code:1752)
- ❖ Registration for the programme can be done through AICTE ATAL Portal only. No other modes of registration shall be accepted.
- ❖ Below is the URL for signing up for FDP Registration on ATAL Portal:
<https://atalacademy.aicte-india.org/signup>
- ❖ **Google Meet Link:** meet.google.com/eyv-kppf-vty

RESOURCE PERSONS

1. Prof Alok Satapathy, Dept of Mech Engg, NIT,Rourkela
2. Dr. Sisir Mantry, Principal Scientist, CSIR-IMMT,BBSR
3. Dr. Meghanshu Vasisth, Dept of Mech Engg, IIT, BHU
4. Dr. Animesh Mandal, School of Minerals Metallurgical & Materials Engineering, IIT, BBSR
5. Dr.L.N.Pattanaik, Dept of Mech Engg, BITS Mesra
6. Dr. Jeyaraj Pichaimani, Dept of Mech Engg, NIT Suratkal
7. Dr. Ranjit Kumar Sahu, Department of Mechanical Engineering, NIT, Suratkal
8. Dr. Kaustuv Choudhury, Dept of Mech Engg, NIT, Rourkela
9. Mr.Sunny Dev (CEO, BEYOND EQ), Trainer & Coach of Emotional Intelligence & SKILL DEVELOPMENT

VENUE

The course will be arranged through online mode in the Seminar Hall, Department of Mechanical Engineering of VSSUT, Burla.

IMPORTANT DATES

Last date of Registration: 16th Sept 2021.

ADVISORY BODY

PATRON

Prof. Bansidhar Majhi
Vice Chancellor, VSSUT, Burla

ADVISORY COMMITTEE

Prof Bansidhar Majhi
Vice-Chancellor, VSSUT, Burla
Prof. B. B. Pati
Director IQAC VSSUT Burla
Prof. R.K. Sahu
Dean, F&P, VSSUT Burla
Prof. P.R. Das
Dean, CDCE, VSSUT Burla
Prof. J.R.Mohanty
H.O.D, Dept of ME VSSUT Burla
Prof. J.Rana
Professor, Dept of ME, VSSUT Burla
Prof. D. Mishra
Professor, Dept of PE, VSSUT Burla

Co-ordinator

Dr. Debasmita Mishra
Assistant Professor, Dept of Mech Engg VSSUT, Burla

Co-coordinators

Dr.Santosh Kumar Sahu and Dr.P.T.R.Swain
Assistant Professors ,Dept of Mech Engg, VSSUT, Burla

Organising Committee

Prof. J.R.Mohanty, VSSUT Burla
Prof J.Rana, VSSUT Burla
Dr. C.R.Deo, VSSUT Burla
Dr. Saroj Sarangi, VSSUT, Burla
Dr. Aurovinda Mohanty, VSSUT Burla
Dr. Padmanav Dash, VSSUT Burla
Dr. S.R.Pattanaik, VSSUT Burla
Dr.M.K.Sutar, VSSUT, Burla
Dr.P.Jena, VSSUT, Burla
Dr.P.P.Mohanty, VSSUT, Burla
Dr.Madhusmita Pradhan, VSSUT, Burla
Dr.Swagatika Mishra, VSSUT, Burla
Mrs. Janaki Dehury, VSSUT, Burla
Mr. L. Das VSSUT Burla

Dr. Debasmita Mishra / Dr.Santosh Kumar Sahu / Dr.P.T.R Swain

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ABOUT THE UNIVERSITY & DEPARTMENT

Veer Surendra Sai University of Technology (VSSUT), Odisha formerly known as University College of Engineering, (UCE) Burla was upgraded to a non-affiliating Unitary State University which came into force from 1st day of July 2009 by Odisha Act 9 of 2009. VSSUT is located at the foothills of famous Hirakud Dam, the longest dam of Asia. Burla is known as the intellectual Capital of Odisha with VSSUT, VSS Medical College, Sambalpur University, MCL, WESCO and IIM Sambalpur. It is located 12 kms away from Sambalpur railway station and 3 kms away from Hirakud railway station. VSSUT, Odisha has carved a niche for itself among the best technical institutes in India and is a dream institute for many budding engineers. The University offers B.Tech., M. Tech., Dual Degree, M.Sc, MCA and PhD degrees. The university is surrounded by a large number of Government, public and private industrial sectors such as OHPC, Hindalco, NALCO, NTPC, OPTCL, Vedanta Aluminium Ltd and Bhusan Steel Plant. The institute has an excellent placement record with a number of top ranking companies visiting the campus every year.



The Department of Mechanical Engineering (ME) was established in 1956. It is the mother branch of all other streams. Design, Thermal and Production specialization (PG courses) were introduced in 1972. The department was started in the year 1996 to promote academic excellence and is still continuing to do so.

OBJECTIVE

Novel materials culminate into an interdisciplinary approach which interacts and combines various branches of engineering like Mechanical Engineering, Civil Engineering, Materials engineering, Chemical engineering, Electrical, Electronics and Computer science Engineering /information technology. According to recent advances in fabrication and design and emergence of light-weight and portable technology, there is a wide variety of application starting from building materials to automobiles to aerospace, medical equipments, micro-electronics, sports as well as military equipments. Some applications are already in use in aerospace and automobile industry and still new innovation in new application areas are being developed each and every day. The main objective of the course is to give the participants an introduction to advanced functional materials, to give a know-how of various optimization techniques, about the importance of coating of materials and material simulation and design. This course also provides a basic understanding of mathematical methods for modeling and simulation. It also focuses on the exchange of ideas among the faculties of Science & Technology and Engineering about contemporary development in the manufacturing domain, creating a collaborative workspace for advanced manufacturing technology in general and also for industrial purpose. It also encourages new technology, innovation and research and their application in various areas to enhance quality and efficiency in order to make Indian industries stand-out with an added advantage in this competitive world of material manufacturing and design with the aim of making 'Make In India' successful.

COURSE CONTENT

The faculty development program will cover the following topics:

Introduction to Composite materials , new classes of Composites & their application areas, Advanced Functional Materials (AFMs), Composite Materials: Types, Synthesis & Characterization, Composites for Thermal insulation, Smart Materials and their Applications, Plasma Spray Coatings of Industry Wastes, Taguchi based Multi-Response Optimization in the field of Manufacturing, Practical sessions on Numerical Simulation using ANSYS, Advanced Thermal Barrier Coatings using Nanostructured Feedstock by Plasma & Cold Spraying, Green Composites for a sustainable environment and Smart Materials and their Applications .



All the resource persons will be from reputed IITs, NITs/Reputed Industries/R&D etc.

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Time Table



**AICTE Training and Learning (ATAL) sponsored 5 Days Faculty Development Program (FDP) on
Novel Materials: Fabrication, Design and Optimization from 20th Sept. to 24th Sept. 2021**

Google meet link: meet.google.com/eyv-kppf-vty

Date	Session 1 (10.00-11.30AM)	Session 2 (11.30-1.00PM)		Session 3 (3.00-4.30PM)	
20/09/2021	Inauguration (9.15AM - 10.00AM) Prof. Alok Satapathy, NIT Rourkela	[Lec-1] Registration and Inauguration Advanced Functional Materials (AFMs) Plasma spray coatings of industrial wastes (Coatings-I)	[Lec-2] Introduction to Composite materials, new classes of Plasma Spray Coatings of Industry Wastes (Coating of materials-II) Dr. Sisir Mantry, IMMT, BBSR	[Lec-3] Advanced Thermal Barrier Coatings using Nanostructured Feedstock by Plasma & Cold Spraying (Coating of Materials-III) Dr. Sisir Mantry, IMMT, BBSR	
21/09/2021	[Lec-4] Soft Computation and Evolutionary Algorithms for Optimization (Optimization Techniques-I) Dr. L.N. Pattanaik, BITS. Mesra	[Lec-5] Effect of Powder Material during EDM Dr. Santosh Kumar Sahu, VSSUT, Burla	L U N C H B R E A K	[Lec-6] Emotional Intelligence and Ethics (Use of EI for a successful life) Mr. Sunny Dev (CEO, BEYOND EQ)	
22/09/2021	[Lec-7] Corona Discharge Advanced Manufacturing Technique for Production and Characterization of Novel Materials and their Optimization using an Artificial Smart System Approach Dr. Ranjeet Kumar Sahu, NITK Surathkal	[Lec-8] Thermo-hydraulic characteristics of instant heater faucets: Performance rating and design optimization Dr. K. Chaudhury, NIT, Rourkela		[Lec-9] Composites for Insulation & electronic packaging (Types, Synthesis & Characterization) Dr. D. Mishra, VSSUT, Burla	
23/09/2021	[Lec-10] Robust Design (Optimization Techniques-II) Dr. L.N. Pattanaik, BITS Mesra	[Lec-11] Material Characterization Dr. Meghanshu Vashista, IIT, BHU		[Lec-12] Analysis of Composite Structures using ANSYS (Numerical Simulation and analysis) Dr. P. Jeyaraj, NITK Surathkal	[Lec-13] The Art of Living (TAOL) (Meditation Techniques and Relaxation methods) (4.30PM to 6.00PM)
24/09/2021	[Lec-14] Processing and properties of aluminium based alloys and composites Dr. Animesh Mandal, IIT BBSR	[Lec-15] Green Composites for a sustainable environment (Use of Natural Fiber Composite materials for various applications) Dr. PTR Swain, VSSUT, Burla		[Lec-16] Stress Management Prof. Alok Satapathy, NIT, Rourkela	Valedictory Function (4.30 PM - 5.15PM)



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ORGANIZED BY
DEPARTMENT OF MECHANICAL ENGINEERING
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BURLA, ODISHA, 768018, INDIA.

(A Technical University Under State Government of Odisha)

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Resources Persons



Novel Materials: Fabrication, Design & Optimization,



Prof. A. Satapathy,
NIT Rourkela



Dr. S. Mantry,
IMMT, BBSR



Dr. L.N.Pattanaik,
BITS. Mesra



Dr. K. Chaudhury,
NIT,Rourkela



Dr. R. K. Sahu,
NITK Surathkal



Dr. D.Mishra,
(Coordinator)



Dr. Santosh Kumar Sahu
(Co-Coordinator)



Dr. P.T.R. Swain
(Co-Coordinator)

20th – 24th September, 2021



Mr.Sunny Dev
(CEO,BEYOND EQ)



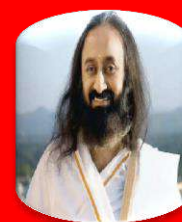
Dr. M. Vashista,
IIT,BHU



Dr. P Jeyaraj,
NITK, Surathkal



Dr. A. Mandal,
IIT, BBSR



The Art of Leaving