

**TEQIP Sponsored On-Line Faculty
Development Programme (FDP)**

On

**Recent Developments in Surface Coatings
and its Application in Manufacturing
(RDSCAM)**

(07th – 11th September 2020)

Patron

Prof. Atal Chaudhuri
Vice Chancellor, VSSUT Burla

Co-Patron

Prof. Amar Nath Nayak
Co-ordinator, TEQIP-III

Chairman

Prof. J. R. Mohanty
HOD, Mechanical Engineering

Coordinator

Dr. Saroj Kumar Sarangi
Associate Professor
Mechanical Engineering Department



Organized by

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

REGISTRATION

Registration Fee:

There is no registration fee for the programme

Eligibility:

This programme is open to all the members of AICTE/UGC affiliated colleges, universities, research scholars, students, faculties, staffs.

- The Brochure of the Programme can be downloaded from the University website www.vssut.ac.
- **Last date of registration is 7th September 2020 (Monday)**

About VSSUT Burla

Veer Surendra Sai University of Technology (VSSUT) Odisha was formed by Odisha Act 9 of 2009 by upgrading University College of Engineering (UCE), Burla to a non-affiliating Unitary State University which came into force from 1st day of July 2009. The University has eleven departments covering all the major engineering, science and humanities disciplines, offering B.Tech., B.Arch., M.Tech., M.Sc. and Ph.D. programs. VSSUT is located at the foothill of Hirakud Dam – World's longest dam. Burla is known as Intellectual capital of Odisha with VSSUT, Sambalpur University, VSS Institute of Medical Science and Research, Chipilima Agriculture College and Indian Institute of Management – all within a radius of 15 KMs. VSSUT is surrounded by metal and power industries and is referred as Odisha's "Growth Corridor". VSSUT campus is about 10 kms from Sambalpur railway station. The University has currently 4400+ students,

300+ sanctioned faculty, 500+ support staffs and 20000+ graduate students (alumni).

Mechanical Engineering Department

The Department of Mechanical Engineering was established in 1956. The committed faculties are teaching with dedication for excellence. During last 6 decades, this branch produced around 3500 high standard self-motivated professionals to serve humanity, both nationally and internationally, at par with excellence. It has established linkages with world class R&D organizations and leading educational institutions in India and abroad. This department has got sponsored projects from DST, AICTE, CSIR and UGC.

Scope of the Course

The course will cover detail methods of surface engineering, hard and soft coatings, manufacturing capabilities, use of coatings for cutting tools, single/multilayer nano surface coating technology, developments of ceramic coatings, material processing of hard phases, various tribology tests, machining tests etc. Faculties and researchers from academic and industries will be greatly benefitted from this on-line short term course.

Objectives

- To understand the technological developments in different methods for manufacturing of surface coatings.
- To learn the recent use of CNC machining and surface coatings on cutting tools such as TiN/TiC/TiCN/Al₂O₃/AlON/TiB₂/TiAlN/diamond for machining. The methods such as UBMS, PACVD, HFCVD etc. are used for improvement of surface engineering.

- To learn different techniques of CVD and PVD methods of coatings.
- To learn ceramic and refractory coatings for high temperature applications.
- To acquire knowledge on multilayer nano-coating techniques
- To learn the methods of high speed machining and its advantages.
- To understand use of coating in reduction of cutting forces/torque by Kistler's Piezo Electric Crystal Dynamometer
- Study of formation of chips, modifications of chip morphology during machining, microhardness, microstructure of the work piece etc..
- To study pattern of different wears, Tool life, machining errors, surface texture of the work-piece, machinability, chattering effect and many more.

Contents of the Course

- Surface engineering like CVD and PVD coating of tools.
- Synthesis of hard coatings
- Design of coatings and use of Plasma science
- Introduction of Nanotechnology in Surface Engineering
- Tribology of coating(s)
- Challenges in synthesis of coatings
- Material Characterizations of coatings
- Machining of work-piece with advanced coated tools

- Application of coatings in automobiles, manufacturing and space industries

Executive Committee

Prof. J. Rana
 Dr. B. B. Pani
 Prof. D. Mishra
 Prof. D. Dhupal
 Dr. P. Mishra
 Dr. S. R. Pattanaik
 Dr. K.K. Ekka
 Dr. S. K. Pal

Advisory Committee

- Prof. B. B. Pati, DEAN F&P
- Prof. U. R. Jena, Dean, CEP
- Prof. J. P. Panda, SRIC
- Prof. S. K. Swain, Dean, Academic
- Prof. P. C. Swain, Dean, PG&SR

Speakers

Eminent professors, scientists from IIT, VSSUT, experts from R&D organizations like NML, IMMT, TRL will deliver lectures in this short course. The course will cover different methods of manufacturing, material processing and testing. Faculties, researchers from industries will be greatly benefitted from this short term course.

Resource Persons

- Prof. A. B. Chattopadhyay, IIT KGP
- Prof. A. K. Chattopadhyay, IIT KGP
- Prof. S. K. Paul, IIT KGP
- Prof. P. P. Bandopadhyay, IIT KGP
- Prof. B. D. Sahoo, IGIT Sarang
- Dr. S. K. Basu, Sandvik Asia, Pune

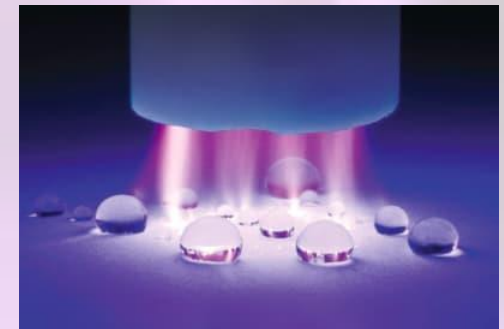
- Prof. K. K. Singh, NIFFT Ranchi
- Prof. S. K. Patel, NIT RKL
- Prof. S. Ghosh, IIT Delhi
- Dr. A. Ghosh, IIT Madras
- Dr. M. Baistha, IIT BHU
- Prof. V. G. Sargade, Dr. B. A. Technological University Lonere

Guidelines:

The session will start from 10.30 AM and end at 5.00 PM.

One week Online Programme on Recent Developments in Surface Coatings and its Application in Manufacturing (RDSCAM)

(07th – 11th September 2020)



For Registration Contact:

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 Mechanical Engineering Department
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