



Value Added Course on
**SOFTWARE TOOLS
FOR NANOSCALE
MATERIAL
CHARACTERIZATION
IN ENGINEERING
APPLICATIONS**

**11th, 12th, 18th, & 19th
January 2020**

**Venue: SMV 110 (Smart
Class Room)**

No of Participants: 60

**Registration fee: Rs. 400/-
(per head)**

**Coordinators and Resource
Persons:**

Dr. Aabid Hussain Shaik

Dr. Mohammed R. Chandan

SCHEME

Nanomaterials now-a-days find immense application in many domains such as in conducting films, sensors, drug delivery, nanofluids, lab on chip, energy storage devices, catalysis etc. due to unique optical, electrical, mechanical and chemical properties. Hence, proper characterization of these nanomaterials in terms of phase morphology, crystal structure and surface properties are very essential. This course will equip the participants with various software tools in analysing nanoscale properties of materials.

Session	Topic
Day 1	Introduction to the world of nanoscience and nanotechnology. Synthesis and stability of nanostructures Hands-on session on synthesis of nanoparticles (Practical Session)
Day 2	Characterization techniques at nanoscale – SEM, TEM, EDAX, UV etc Hand-on session on morphological analysis using ImageJ software (Practical Session)
Day 3	Application in heat transfer Application in conducting films. Phase analysis using SASfit. (Practical Session)
Day 4	Interpretation of crystal lattice using JCPDS (Practical Session)

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Course outcome:

- 1. Understand the synthesis of nanomaterials and their application**
- 2. Describe the basic science behind the properties of materials at the nanometer scale**
- 3. Comprehend advanced experimental and computational techniques for characterizing nanomaterials**

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E-mail: aabidhussain.s@vit.ac.in & md.rehaanchandan@vit.ac.in

For any queries contact -
Student coordinators :

1. Visalakshi (7708728819)
2. Abhiram (9620381629)
3. Sparsh Goyal (9871580985)

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