



**SHRI MATA VAISHNO DEVI
UNIVERSITY,
KATRA, J&K, INDIA**

Organizes

**Two week Refresher Course
(Online)
on**

**MATERIAL SCIENCE & ITS
APPLICATIONS**

(Dec 8 - 20, 2025)

Sponsored by



**MMTTP, University Grant
Commission
(UGC)**

Under

**MALAVIYA MISSION SCHEME
TEACHER'S
TRAINING PROGRAMME
UGC-MMTTC-SMVDU**

ABOUT THE COURSE

This online Refresher Course is designed to provide a comprehensive overview of key concepts and techniques in the field of material science, with a focus on both foundational knowledge and recent advancements. The course begins with an introduction to material synthesis and fabrication methods, offering insights into how materials are engineered at various scales. Participants will explore a range of thin film deposition techniques, essential for modern device fabrication and nanotechnology applications.

In-depth sessions will cover structural and surface characterization tools such as X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Atomic Force Microscopy (AFM), UV-Visible spectroscopy, and Fourier Transform Infrared (FTIR) spectroscopy etc., equipping learners with the skills to analyze and interpret material properties.

The course will also delve into emerging areas such as energy storage materials and their practical applications in modern technologies, as well as the role of computational techniques in material design and analysis. A special focus will be given to biomaterials and a broad spectrum of other advanced materials, highlighting their significance in interdisciplinary research and industry. This program aims to update and strengthen the participants' understanding, fostering skill development for academic, research, and industrial applications.

TOPICS COVERED IN THE COURSE

Following topics will be covered in the refresher course:

- ❖ Introduction to material synthesis and fabrication
- ❖ Thin film deposition techniques
- ❖ Structural and surface characterization such as XRD, SEM, AFM, UV-Vis spectroscopy, FTIR, and more
- ❖ Energy storage materials and applications
- ❖ Computational techniques
- ❖ Bio materials and other materials.



Patron

**Prof. Pragati Kumar,
Vice Chancellor, SMVD University, Katra**



**Prof. Supran K Sharma,
Director,
MMTTC**



**Prof. Sharda M. Potukuchi,
Deputy Director,
MMTTC**



**Coordinator
Dr. Anupam Sharma**



**Co-coordinator
Dr. Ram Prakash**



**Co-coordinator
Dr. Jitendra Sharma**



**Co-coordinator
Dr. Varun Pandey**

WHO CAN PARTICIPATE

Faculty members working in universities and colleges that are included under Section 2(f) of the UGC Act. The teachers of colleges that do not yet come within the purview of Section 2(f), but have been affiliated to a university for at least three years, will be permitted to participate in the courses.

HOW TO REGISTER

- Visit the UGC-MMTTC portal: <https://mmc.ugc.ac.in>
- Use the Direct Registration Link:
<https://mmc.ugc.ac.in/registration/Index>
- From the list of institutions, select Shri Mata Vaishno Devi University
- Choose the Refresher course (8th December – 20th December, 2025)



LAST DATE OF REGISTRATION

The last date to apply for the course is 1st December 2025.

NOC REQUIREMENT

A No Objection Certificate (NOC) from the competent authority is required and may be submitted during the time of registration.

REGISTRATION CHARGES

There is no registration charges to attend this refresher course

CERTIFICATE

E-Certificate will be awarded based on Performance and Participation in quizzes and assignments



SMVDU, KATRA, J&K

(Recognized by UGC under Section 2(f) & 12(B) of the UGC Act of 1956)

For any query or clarification don't hesitate to contact us

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