

# FRONTIERS IN BIOMATERIALS AND CRYSTALLOGRAPHY

## NATIONAL SEMINAR (1-3 FEBRUARY 2024)

X-ray diffraction is one of the most significant developments of the 20th century. As of today, crystallography is an indispensable research tool that uses powerful techniques like X-ray diffraction, neutron diffraction, and electron diffraction. Demonstration of diffraction from crystals by Laue and co-workers in 1912 followed by the foundations of X-ray crystallography laid by William Lawrence Bragg and William Henry Bragg in 1914 led to understanding the composition and structure of matter at molecular and even atomic scale. Over the last 110 years, crystallography has advanced a lot and opened up several branches in Physics, Chemistry, Biology, Biotechnology, Pharmacology, etc. Most of the biologically significant molecules like drugs, proteins, nucleic acids and the ribosome were investigated by X-ray diffraction at atomic resolution to understand their biological functions. Many of the advanced materials exhibiting exotic magnetic and electric properties have a strong dependence on their crystal structure and in this context, their structure elucidation is very essential. Enormous contributions from X-ray crystallography have enriched the development of technological and medicinal applications.

### About SPAP

The School of Pure and Applied Physics (formerly the Material Science department) is one of the departments that started along with the establishment of the Mahatma Gandhi University in 1983. Currently, the department is one of the premier research departments across various universities in India. The school comprises more than 20 researchers covering a wide area of research including biophysics, astrophysics, advanced materials, solar physics, optoelectronics, photonics and crystalline materials, sol-gel optics, ultrafast, and attosecond Science.



**SCHOOL OF PURE AND APPLIED PHYSICS**  
**MAHATMA GANDHI UNIVERSITY**  
**KOTTAYAM - 686 560**

## SCOPE

Small Molecule Crystallography  
Macromolecule Crystallography  
Crystallography in drug design and pharmaceuticals  
Crystal growth and characterization  
Crystals for device applications  
Powder diffraction & Rietveld refinement  
Metal-organic framework  
Functional materials: structure and defects  
Smart Materials  
Nano-biomaterials  
Drug- macromolecular Interactions  
Nanoparticle – Macromolecular interactions  
Biomaterials  
Biosensors  
Biopolymers

**ABSTRACT DEADLINE : 25/01/2024**

### Registration fees\*

Students / Researchers : 250 INR  
Teachers : 500 INR

## National advisory Committee

Prof. Rejani Kant (University of Jammu)  
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## Speakers



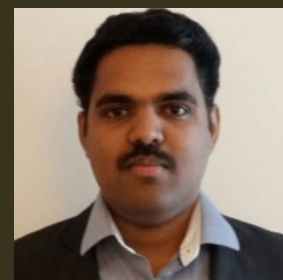
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\*Only spot registration, but confirm your participation via  
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**Targeted Audience: Teachers & Students of University departments/centers and  
affiliated colleges**