

February 21, 2025

Press Release

### **JMI organizes XX Abdus Salam Memorial Lecture on “Metrology for Quantum Technologies”**

The Department of Physics at Jamia Millia Islamia (JMI) organised the XX Abdus Salam Memorial Lecture on February 20, 2025, at the Conference Hall of the FTK-CIT centre. The memorial lecture titled “Metrology for Quantum Technologies” was delivered by Prof. Achanta Venu Gopal, Director, CSIR-National Physical Laboratory-New Delhi.

The Department of Physics, JMI has instituted the Abdus Salam Memorial Lecture to honour the ideals championed by Salam, particularly the importance of promoting education and research in fundamental sciences in developing countries. Each year, a distinguished scientist is invited to deliver the lecture, aimed at inspiring audiences and sharing the enthusiasm surrounding new discoveries, concepts, and challenges.

The lecture began with a welcome address by Prof. Azher Majid Siddiqui, Head of the Department of Physics, JMI. Prof. Seeduddin, Dean of the Faculty of Sciences, then highlighted the significance of the Abdus Salam Memorial Lecture before introducing the speaker to the audience.

In his lecture, Prof. Venu Gopal emphasized the need to replace conventional metrology methods with quantum metrology. This advanced approach redefines fundamental units, such as the kilogram using Planck’s constant and length based on the speed of light in a vacuum, the voltage standard through superconducting circuits via the Josephson effect, and the resistance standard using the Quantum Hall effect. He further presented various experimental results related to the photonics of metamaterials, surface-enhanced Raman spectroscopy, laser cooling, and ion trapping, demonstrating their application in achieving high-precision measurements of physical quantities such as length, time, and fundamental constants.

The lecture was followed by a discussion session with the speaker. It concluded with a vote of thanks by Prof. Mohammad Zulfequar, senior Professor of the department. Prof. Venu Gopal graciously participated in an interactive session with Ph.D. scholars in the committee room of the Department of Physics, followed by another engaging session with the Department’s faculty members.





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