



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Chemical and Biological Sciences

7th December, 2022

4.00 PM

ONLINE/ FERMION

SPEAKER

Dr. Ankit Raj,

Postdoctoral Researcher

USIL-NYCU, Hsinchu, Taiwan,

TITLE OF THE TALK

**TOWARDS STANDARDIZATION OF RAMAN SPECTROSCOPY: ACCURATE
WAVENUMBER AND INTENSITY CALIBRATION SCHEMES FOR ABSOLUTELY
QUANTITATIVE ANALYSIS**

ABSTRACT

Raman intensities of molecular hydrogen were established as primary standards for Raman intensity calibration. For this purpose, CC response theory was used for wavelength dependent polarizability computation which was then combined with accurate ro-vibrational wavefunctions to obtain rovibrational matrix elements of polarizability relevant to explain the observed Raman intensities. The position of the Raman bands in the experiments serving as excellent frequency standards were used for reliable wavenumber calibration. Lastly, intensity comparisons with respect to H₂ were done for Raman cross-section determination.

HOST FACULTY

Prof. Ranjit Biswas, Sr. Professor
