



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

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

## **DEPARTMENTAL SEMINAR**

# **Condensed Matter and Materials Physics**

**31<sup>st</sup> January, 2023**

**4.00 PM**

**ONLINE/ FERMION**

### **SPEAKER**

**Prof. Ashwani K. Tiwari,**

**Professor, FRSC**

**Dean of International Relations and Outreach**

**Department of Chemical Sciences**

**Indian Institute of Science Education and Research (IISER) Kolkata**

### **TITLE OF THE TALK**

**DYNAMICS OF H<sub>2</sub>O DISSOCIATION ON METAL SURFACES**

### **ABSTRACT**

Dissociation of H<sub>2</sub>O on a metal surface is rate-limiting step in many industrially important reactions. In a few recent experiments, it has been observed that dissociation of H<sub>2</sub>O on a metal surface is mode-selective. In other words, this reaction is not statistical in nature and therefore, one cannot use transition state-based theories to get insights of this reaction. Our quantum dynamical calculations show that mode-mode coupling along the reaction path is the key factor in deciding the quantum of mode-selectivity in this reaction.

### **HOST FACULTY**

**Prof. Manoranjan Kumar, Professor**

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