



**DEPARTMENT OF PHYSICS  
UNIVERSITY OF MUMBAI**



with  
**Materials Research Society of India  
MUMBAI CHAPTER**

Organizes

## **Special Lecture**

**Transport Processes in Lithium-Ion Batteries: What do we know about the Solid Electrolyte Interphase and about Highly Concentrated Electrolytes?**

By

**Prof. Bernhard Roling  
University of Marburg, Germany**



**Abstract:** Transport processes of ions, electrons and molecules play an important role for the power density and cycling stability of lithium-ion batteries. Nevertheless, there is a lack of fundamental knowledge in this field, in particular with regard to interfacial transport. In this lecture, two important transport phenomena are addressed: (i) Mass and charge transport across the solid electrolyte interphase (SEI). (ii) Ion transport in highly concentrated ionic liquid-based electrolytes. The impact of ion correlations on the ion transport, in particular on the  $\text{Li}^+$  transference number under anion-blocking conditions, is discussed.

**Monday, September 24, 2018, 2.30 pm**

**Pherozeshah Mehta Bhavan, Kalina Campus, University of Mumbai**

***Kindly join us for High Tea at 4.30 pm***

Dr. G.P. Kothiyal  
Chairman, MRSI Mumbai Chapter

Prof. Vaishali A. Bambole  
Head, Department of Physics