



Faculty Development Program



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Discussion Points

Title : Flexible Energy Storage Devices - Role of Polymer Electrolytes and Corrosion Protection at Interfaces

Date : 05-Mar-2024 - 05-Mar-2024

Time : 10:00 - 17:30

Venue : CDMM 304

- Session 1- Compare various types of polymer electrolytes for flexible energy storage
- Session 2- Explore advantages of polymer electrolytes, including flexibility, high ionic conductivity, leakage-free operation, and shape versatility
- Session 3- Mechanisms of corrosion at electrode-electrolyte interfaces in flexible energy storage
- Session 4: Effectiveness of various corrosion protection strategies



Resource Person 1 - Details

Name : Dr Ramesh T Subramaniam

Designation : Professor Faculty of Science, Department of Physics

University/ Company : University of Malaya, Kuala Lumpur

Address : Malaysia, 50603.



Resource Person 2 - Details

Name : Dr Ramesh Kasi

Designation : Associate Prof, Department of Physics Faculty of Science

University/ Company : Universiti Malaya, Kuala Lumpur

Address : Malaysia, 50603.

Resource Person's Profile :

1. Profile of Dr Ramesh T Subramaniam

PhD - University of Malaya 2004

Invited as nominator for The Nobel Prize in Physics for 2021 by Nobel Committee for Physics on behalf of the Royal Swedish Academy of Sciences.

World's Top 2 percent (Precisely close to Top 1 percent) Scientists

2. Profile of Dr Ramesh Kasi

Doctor of Philosophy (Advanced Materials) in 2007 from Universiti Malaya, Malaysia.

AREAS OF EXPERTISE:

Polymer Electrolytes, Electrode Materials, Energy Storage and Harvesting Devices, Energy Corrosion, Protection, Antifouling, Protective coatings, Electrochemical Analyses.

Polymer electrolytes have sparked interest in the field of flexible energy storage devices owing to their flexibility, high ionic conductivity, stable electrochemical performances, being leakage-free and excellent mechanical & electrochemical properties. The overall performance of the energy storage device is greatly influenced by electrolyte ion type, concentration, and the operating temperature. In the recent years, corrosion at the electrode-electrolyte interface has been identified as an area of interest. The FDP sessions explore deep into the crucial roles of polymer electrolytes and corrosion prevention in advancing this technology. Prof Dr. Ramesh T Subramaniam will talk about latest advancements in developing and characterizing polymer gel electrolytes for energy storage devices. It will also cover the discussed the challenges and future development of various gel electrolytes for flexible energy storage devices. Dr. Ramesh Kasi will address the applications of polymeric materials for energy storage, effect of corrosion at interfaces of electrode-electrolyte and preventive measures.

Cyclic voltammetry, galvanostatic charge-discharge, electrochemical impedance spectroscopy

**Coordinator's: Prof. AHANKARI SANDEEP SURESHRAO 15792 - Associate Professor
Sr. - SMEC
Prof. VASUDEVAN R 12625 - Professor Higher Academic Grade -
SMEC**