



## Faculty Development Program



**VIT**<sup>®</sup>  
Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

**Title :** Advancing Towards Net Zero: Innovations in Decarbonisation and Sustainability

**Date :** 2025-11-12 - 2025-11-12

**Time :** 10:00 - 17:30

**Venue :** CDMM 304

### Event Outcome

- Participants will gain a comprehensive understanding of decarbonisation strategies



#### **Resource Person 1 - Details**

**Name :** Kumar Patchigolla

**Designation :** Professor, Net Zero Industry Innovation Centre

**University/ Company :** Teesside University, UK

**Address :** United Kingdom, TS13BX.



#### **Resource Person 2 - Details**

**Name :** Senthilarasu Sundaram

**Designation :** Professor, Sustainable Energy Materials

**University/ Company :** Teesside University, UK

**Address :** UK, TS13BX.



#### **Resource Person 3 - Details**

**Name :** Hari Upadhyaya

**Designation :** Professor, Intelligent Manufacturing Systems

**University/ Company :** London South Bank University, UK

**Address :** UK, SE10AA.

## **Resource Person's Profile :**

### **1. Profile of Kumar Patchigolla**

Hydrogen is increasingly recognised as a key energy carrier for achieving global net zero goals. However, conventional hydrogen production methods, primarily reliant on fossil fuels, contribute significantly to greenhouse gas emissions. Decarbonising hydrogen production involves transitioning from grey hydrogen to cleaner alternatives such as blue, green and turquoise hydrogen. Blue hydrogen uses carbon capture and storage (CCS) to mitigate emissions from natural gas reforming.

### **2. Profile of Senthilarasu Sundaram**

The session on Dual Harvesting of Solar Energy for Decarbonisation Photonic and Thermal Innovations explores cutting-edge approaches to maximize solar energy utilization. It focuses on integrating photovoltaic and photothermal technologies to simultaneously generate electricity and heat, enhancing overall energy efficiency. The talk highlights advancements in materials, system design, and hybrid applications driving sustainable energy solutions.

### **3. Profile of Hari Upadhyaya**

The invited talk on Integrating Solar Photovoltaic and Thermal Technologies Materials, Storage, and Sustainable Energy Solutions focuses on the convergence of solar PV and thermal systems to enhance energy efficiency and sustainability. It explores advancements in energy storage, heating and cooling applications, and functional materials that optimize solar energy utilization. The session highlights innovations in coatings, lighting

The Faculty Development Programme (FDP) on Advancing Towards Net Zero, Innovations in Decarbonisation and Sustainability aims to build knowledge on emerging strategies, technologies, and policies driving carbon reduction. It will cover renewable energy integration, carbon capture, green technologies, sustainable practices, and policy frameworks. Through interdisciplinary learning and innovation, the FDP empowers educators and researchers to promote sustainable solutions and contribute effectively to achieving a low-carbon, resilient and environmentally responsible future.

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**Coordinator's: Prof. RANJITHA J 13605 - Associate Professor Grade 1 - CO2  
Prof. NANTHA GOPAL K 10783 - Professor Grade 2 - SMEC**