



Celebrating 40 years of Research Collaboration



Current Trends in Photo-Electrochemical and Photovoltaic Materials, Devices, and Applications

 **PGIS RESCON** 2023
RESEARCH CONGRESS

Pre-conference Workshop - I

6th Oct 2023
9.00 am - 5.00 pm

At the Postgraduate Institute of Science
University of Peradeniya
Sri Lanka (or Online)



- Registration link: <https://forms.gle/JP75m3MX2GxANXGw6>
- Registration deadline: **29th Sept 2023, Midnight** (Sri Lankan Time)
- Participation: **In-Person** (limited seats) or **Online**
- Cost: **1000 LKR (3.10 USD)**

● 9.00 am – 10.30 am: **Electrochemical Solar Cells**

Photoelectrochemical (PEC) and photovoltaic (PV) materials and devices are increasingly used for solar energy conversion. Dye-sensitized solar cells continue to be a major focus of research due to their rapid advancements in efficiency and low-cost manufacturing processes. Quantum dot solar cells are gaining attention for their potential to enhance light absorption and tunable bandgaps.



Emeritus Prof. **Lakshman Dissanayake** (National Institute of Fundamental Studies, Sri Lanka)



Prof. **Wijendra Bandara** (Department of Physics, Faculty of Science, University of Peradeniya, Sri Lanka)



Dr. **Chaturanga Thotawattage** (Department of Physical Sciences, Faculty of Applied Sciences, Rajarata University of Sri Lanka)

● 10.30 am – 11.00 am: Tea (Provided)

● 11.00 am – 12.30 pm: **Thin-film Solar Cells**

Thin-film photovoltaic (PV) technology is becoming the most promising among thin-film technologies. Novel semiconductors currently being researched, can be integrated into clothing and building materials to promote efficient solar energy harvesting. Graded bandgap and nanostructured materials including nanowires and nanoscale architectures, are being explored to improve the efficiency and performance of PV devices.



Prof. **Nandu B. Chaure** (Department of Physics, Pune University, India)



Dr. **Olajide Olusola** (Department of Physics, School of Physical Sciences, Federal University of Technology, Akure, Nigeria)



Dr. **Buddhika Dassanayake** (Department of Physics, Faculty of Science, University of Peradeniya, Sri Lanka)

● 12.30 pm – 1.30 pm: lunch (Provided)

● 1.30 pm – 3.00 pm: **Polymer Electrolytes for Energy Applications**

Electrolytes are key components in all electrochemical devices, providing ion transport while hindering electronic conduction between the electrodes. Electrolytes come in many shapes and forms, in liquid and solid state. Their use in different applications will be discussed as well as integrating solar cell technologies with advanced energy storage systems.



Prof. **Bengt-Erik Mellander** (Department of Physics, Chalmers University of Technology, Sweden)



Prof. **Ingvar Albinsson** (Department of Physics, University of Gothenburg, Sweden)



Dr. **Maurizio Furlani** (Department of Physics, University of Gothenburg, Sweden)

● 3.00 pm – 3.30 pm: Tea (Provided)

● 3.30 pm – 4.30 pm: **Panel Discussion**