



## International Conference on Energy Conversion and Storage (IECS-2023)

with a pre-conference  
**Workshop on Electrochemical Energy Systems**  
&  
**an Energy Hackathon Contest**  
(Prize money worth of  
**Rs. 3,00,000/-**)

**January 18-20, 2023**

@ IIT Madras Research Park Auditorium,  
Chennai 600113, Tamil Nadu, India



### About the conference:

Advanced Centre for Energy Storage and Conversion (ACESC), a part of energy consortium of IIT Madras, is organizing this international conference to showcase the recent developments in the area of electrochemical science and technology through lectures, pedagogical type of lectures in the workshop and a hackathon.

As electrochemistry interfaces with many areas of science and engineering, this conference is aimed to provide a platform for knowledge and skill sharing among the electrochemists, researchers, technologists and academicians.

IECS takes pride in inviting students, teams, research scholars, scientists, academicians and industrialists to participate in the conference, workshop and hackathon and requests to reap the benefit out it.

### About Centre of Excellence – ACESC:

Funded under the aegis of the Institute of Eminence (IoE) scheme, we are a group of researchers at IIT Madras teaming up to focus our skill sets on developing technologies for Li-S batteries and perovskite solar cells. ACESC has strong international component, invites, with full funding, visiting faculty and young research fellows from abroad to foster new collaboration and expand research activity. Besides, constantly working on developing joint degree program with foreign institutions.

### About The Energy Consortium:

The Energy Consortium – IIT Madras aims to be a critical contributor to India's Net Zero journey by providing valuable R&D assistance to Indian industries in low-carbon energy transition pathways.

### About IIT Madras:

The Indian Institute of Technology Madras is known both nationally and internationally for excellence in technical education, basic and applied research, innovation, entrepreneurship and industrial consultancy. A faculty of international repute, a highly motivated and brilliant

student community, excellent technical and supporting staff and an effective administration have all contributed to the pre-eminent status of IIT Madras. The Institute is proud to bear the laureate of being No.1 engineering university in India. More recently, IIT Madras has been given the title of Institute of Eminence. IIT Madras has been the top-ranked engineering institute in India for four consecutive years as well as the 'Best Educational Institution' in Overall Category in the NIRF Rankings of 2022 put out by the Ministry of Human Resource Development.

IIT Madras is a residential institute with nearly 550 faculty, 9000 students and 1250 administrative & supporting staff and is a self-contained campus located in a beautiful wooded land of about 250 hectares. The campus is located in the city of Chennai, previously known as Madras. Chennai is the state capital of Tamil Nadu, a southern state in India.

### Themes:

- Solar Cells, Solar Thermal, Solar Fuels
- Fuel Cells and Electrolysers
- Batteries (Metal-ion Batteries, Flow Batteries, Thermal Batteries, Photo-rechargeable Batteries)
- Supercapacitors
- Electrochemical synthesis of ammonia
- Thermoelectric Materials
- Solid-ion Conductors
- Computation (DFT/AI/ML/Multiscale modeling) related to Energy Materials

### Foreign Speakers:

- **Dr. Samira Siahrostami**  
University of Calgary
- **Prof. Yamada Hirotochi**  
Nagasaki University
- **Prof. Rajan Jose**  
Malaysia Pahang University
- **Prof. Werner Paulus**  
University of Montpellier
- **Prof. Vijay Ramani**  
Washington University

- **Prof. Stefan Nikolaus ADAMS**  
National University of Singapore
- **Dr. Ken Watanabe**  
Kyushu University
- **Prof. Alexander Jan-Christoph Kuehne**  
Ulm University
- **Dr. Guyomard Dominique, Jean**  
Jean Rouxel Institute of Materials in Nantes

#### Indian Speakers:

- **Prof. M. S. Ramachandra Rao**  
IIT Madras
- **Prof. K. R. Justin Thomas**  
IIT Roorkee
- **Prof. Satish Patil**  
IISc Bangalore
- **Prof. K. Ramesha**  
CSIR-CECRI
- **Prof. R. Gopalan**  
ARCI Chennai
- **Prof. Amartya Mukhopadhyay**  
IIT Bombay
- **Dr. T.N. Narayanan**  
TIFR Hyderabad
- **Dr. P. Ragupathy**  
CSIR-CECRI
- **Dr. Tharamani C. N.**  
IIT Ropar
- **Dr. Muhammed Musthafa. O. T.**  
IISER Pune
- **Dr. Mary Gladis J.**  
IIST Thiruvananthapuram
- **Dr. Raghunathan Kuppaswamy.**  
GM Technical fellow (retd.)

#### **Top Reasons to Attend the Conference:**

- ✚ Learn the importance of energy conversion and storage for sustainable solutions
- ✚ Enrich your electrochemical wisdom through the tailor-made workshop by experts on advanced electrochemistry
- ✚ Connect with the present and future energy storage and lithium-ion battery markets
- ✚ Explore the opportunities in the foreign universities
- ✚ Expand your network with industry professionals and academicians

#### **Topics covered in the workshop:**

- Chemistry of Li-S battery
- Nitty-gritty of fabrication of solid-state Li-S batteries
- The design and synthesis of organic electroactive materials
- The study of organic electroactive materials in various electrochemical systems (e.g., flow cells, rechargeable batteries,)
- Impedance spectroscopy
- Theoretical investigations of electrochemical interfaces

#### **Resource Persons for the workshop:**

- **Prof. Stefan Nikolaus ADAMS**  
National University of Singapore
- **Prof. S. Sankararaman**  
IIT Madras
- **Prof. S. Ramanathan**  
IIT Madras
- **Prof. Perumal Elumalai**  
Pondicherry University
- **Dr. Yamijala Chaitanya Sharma**  
IIT Madras
- **Dr. Palaniselvam Thangavelu**  
IIT Madras
- **Dr. V. Ganesh**  
CSIR-CECRI

#### **Registration Fee:**

Foreign delegates: **US \$500**  
Accompanying person (if attending conference):  
**US \$300**

Indian Delegates (Academic/ Research): **Rs. 5000/-**  
Indian Delegates (Industry): **Rs. 6000/-**  
Indian Students/ Research Scholars/ Post-Docs:

: **Rs. 3000/- (For conference alone)**

: **Rs. 4000/- (For conference + Workshop)**

: **Rs. 4500/- (For conference + Hackathon) + Rs.1000/-**  
for every additional member of the team

: **Rs. 5000/- (For conference + Hackathon + Workshop)**  
+ **Rs.1000/-** for every additional member of the team

#### **For Details on Hackathon:**

<https://www.ices2023.com/>

The selected teams will be eligible for the final round of selection in the **Carbon Zero Challenge competition** (<http://www.czeroc.in>), which offers funding and training to become an entrepreneur.

#### **Deadlines:**

Abstract submission starts (with registration): **15-09-2022**  
Abstract submission closes (with registration): **15-12-2022**  
Registration for participation without abstract: **03-01-2023**  
Application for Hackathon closes: **15-11-2022**

#### **For registration:**

##### **Step 1: Payment Gateway:**

<https://elearn.nptel.ac.in/iecs2023/>

##### **Step 2: Registering with payment details**

- Abstract submission+ registration for conference and workshop [Click here](#)
- Registration alone without abstract [Click here](#)
- Registration for the foreign delegates [Click here](#)
- Registration for the hackathon [Click here](#)

#### **Organizing Committee:**

**Prof. Kothandaraman R,** IIT Madras

**Dr. P Venkatakrishnan,** IIT Madras

**Dr. Satyanarayanan Seshadri,** IIT Madras

#### **Contact:**

<https://www.ices2023.com/>

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#### **Supported by:**

