

INTERFACE

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ECS Indian Institute of Technology Madras Student Chapter

From January 18 to 20, 2023, the ECS Indian Institute of Technology Madras Student Chapter hosted a conference where they joined hands with the International Conference on Energy Conversion and Storage (IECS-2023) for the “Fastest Finger First Quiz.” Chapter volunteers arranged a series of quizzes—one per day—via an online platform, encompassing various aspects of electrochemistry. The quizzes were based on the topics discussed each day at the conference. Almost 400 attendees participated in the quizzes and five of the top scorers were recognized with a cash award from IECS.

In association with the SRM Institute of Science and Technology (SRMIST), the chapter conducted a two-day conference *International Workshop on Electrochemical Techniques for Next-Generation Batteries* (IWETN—GB2023). Dr. **T. Maiyalagan** from SRMIST convened the workshop which received an overwhelming response, with more than 130 students registering for the event. The workshop’s first day took place at SRMIST, where renowned electrochemists from various parts of the world enlightened the participants with

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Chapter officers meet with IECS-2023 foreign delegates (from left to right: **Mohana Priya**, **Anoop Naikkath**, **Prof. Yamada Hiroto** (Nagasaki University), **Dr. Ganapathi Kandregula Rao**, **Dr. Ken Watanabe** (Kyushu University), **Prof. Kothandaraman Ramanujam**, **Sravani Potham**, and **Swati Panigrahi**). Photo courtesy of the ECS Indian Institute of Technology Madras Student Chapter.



Biosensors and Electroanalytical Techniques workshop participants meet with the speaker, **Prof. Sadagopan Krishnan**, student chapter faculty advisors, and members.

Photo courtesy of the ECS Indian Institute of Technology Madras Student Chapter.

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recent advancements and current trends in battery technology. Speakers included Dr. **Jagjit Nanda** (Stanford University), Prof. **Soorathes Kheawhom** (Chulalongkorn University) and Dr. **Mogalahalli Venkateshreddy Venkateshamy Reddy** (Nouveau Monde Graphite). The second day's proceedings at IIT Madras campus were divided into two distinct sections. The morning focused on expert lectures by Prof. **Srinivasan Ramanathan** and Prof. **Kothandaraman Ramanujam**, providing attendees with valuable insights and knowledge on impedance and on characterization techniques for batteries. In the afternoon, participants applied the morning's lessons in an engaging hands-on experience that allowed participants to apply what they had learned. The workshop's hands-on activity was supported by equipment from Metrohm India Pvt. Ltd. The workshop ended with an engaging quiz session followed by the distribution of certificates.

On April 19, 2023, the chapter organized a lecture presented by the eminent Prof. **Werner Paulus** from the Institut Charles Gerhardt Montpellier, "Electrochemical Oxygen Intercalation Reactions Followed up by In Situ Neutron and Synchrotron Diffraction at Room Temperature." Faculty and students from various IITM departments attended the lecture, which revolved around structural aspects of Li-ion-rich conducting substances and the relevance of neutron and synchrotron diffraction techniques in determining the exact role and location of the conducting ion in the structure.

On June 27, 2023, the chapter organized a one-day workshop, "Biosensors and Electroanalytical Techniques," led by Prof. **Sadagopan Krishnan** from Oklahoma State University. The workshop started with an homage to the late Prof. **John B.**

Goodenough. More than 60 participants from various institutes across Tamil Nadu Province attended the lecture. The diverse participation added to the workshop's collaborative and engaging atmosphere. In the morning session, Prof. Krishnan delivered two lectures focusing on diverse electroanalytical techniques and their applications in biosensors, meat chemistry, and more.

The afternoon was dedicated to hands-on sessions and interactive activities with expert professors **Raghuram Chetty**, **Raman Vedarajan**, and **Kothandaraman Ramanujam**. To facilitate effective participation, the students were divided into groups. The hands-on session comprised three experiments: electrochemical detection of dopamine with endohedral solvent-filled carbon nanotubes; understanding conductance and conductivity through EIS; and semi-infinite diffusion vs. finite diffusion using rotating disk electrode with EIS. A Fastest Finger First Quiz based on the workshop content was conducted. Two students were awarded with cash prizes through the support of Labkarts India Pvt. Ltd. Interested readers can download the teaching content of the workshop from the meeting [website](#).

In addition, a lecture series in association with the Electrochemical Society of India is ongoing. Thus far, eight talks have been delivered between August 20, 2022, and May 27, 2023 by distinguished speakers who include Mr. **Sanyam Pursi**, Dr. **Venkataraman Thangadurai**, Dr. **Veerabhadrarao Kaliginedi**, Dr. **Tharamani C. N.**, Dr. **S. Senthil Kumar**, Dr. **Siva Rama Krishna Chaitanya**, **Sharma Yamijala**, Dr. **J. N. Balaraju**, and Dr. **S. Ravichandran**.

Upcoming activities include an industry tour in October; *Energy Summit*, an international conference tentatively set for December 2023; and a workshop by Prof. **Venkataraman Thangadurai** (University of Calgary), on February 23, 2024, at IIT Madras. ■



Workshop participants gather with the International Workshop on Electrochemical Techniques for Next-Generation Batteries organizing team. Photo courtesy of the ECS Indian Institute of Technology Madras Student Chapter.