

To commemorate India's 75th Independence (AzadikaAmritMahotsav) and the coinciding CSIR-Central Electrochemical Research Institute's 75th Foundation Year (CSIR-CECRI@75), CSIR-CECRI, Karaikudi in association with Society for Advancement of Electrochemical Science and Technology (SAEST), Karaikudi is organizing a monthly Lecture Series on '**Electrochemical Science and Technologies: A Path Forward to Sustainable Society**' by having special lectures by eminent personalities in the field of electrochemical science and technologies, and allied areas. The objective is to popularize the knowledge on electrochemical science and technology and its impact on energy, environment, healthcare, and industrial sector with a view to promote interest among students, scholars, scientists and technologists.

In this series, the first lecture was delivered by **Prof. M. V. Sangaranarayanan**, Professor Emeritus, Department of Chemistry, Indian Institute of Technology (IIT) Madras, Chennai on April 28, 2022 at 11:00 am at Abdul Kalam Auditorium, CSIR-CECRI. The lecture was on physical mode and attended by undergraduate and graduate students, PhD scholars and scientists. In his lecture on "Phase transitions at Electrochemical Interfaces", Prof. Sangaranarayanan highlighted the fundamental issues faced by theoreticians in modeling the electrochemical double layers and in explaining underpotential deposition of metals. He also shared his recent experience of using the Ising model to understand the liquid/liquid interfaces.



Dr. S. Srikanth, Former Director, CSIR-National Metallurgical Laboratory, Jamshedpur delivered a lecture on "A Future Hydrogen Economy - Reality or a Pipe Dream" on April 28, 2022 at 3.00 p.m. in Abdul Kalam Auditorium. In his lecture, Dr. Srikanth presented the economics of hydrogen as a future fuel in the global as well as Indian scenario. He emphasized the multiple challenges associated with the cost of hydrogen production and storage, the large-scale supporting infrastructures that need to be overcome to realize hydrogen as the commercial fuel.



As a part of the monthly Lecture Series on 'Electrochemical Science and Technologies: A Path Forward to Sustainable Society' in commemorating India's 75th Independence (AzadikaAmritMahotsav) and the coinciding CSIR-Central Electrochemical Research Institute's 75th Foundation Year (CSIR-CECRI@75), **Dr. R. Gopalan**, Regional Director, International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI), Chennai delivered a lecture on "Opportunities in Materials Technology for Electric Vehicle and Stationary Applications" on May 23, 2022. In his lecture, Dr.Gopalan provided an overview on the need for electric vehicles by comparing the CO₂ footprints from gasoline-based vehicles and e-vehicles. His lecture also highlighted the current status of various batteries and challenges related to the electrode materials. Dr.Gopalan also addressed the technology gaps and supply chain issues that India is facing in the production of high capacity batteries to power e-vehicles. The R&D activities and technologies developed at ARCI in the recent past especially in the energy storage sector were also highlighted. Dr.Gopalan concluded his lecture by providing a roadmap of various battery chemistries and technologies, and their application sectors. The lecture also had a very interactive session with Dr.Gopalan through questions from students and scientists.





The Lecture Series on ‘Electrochemical Science and Technologies: A Path Forward to Sustainable Society’ in marking the celebrations of India’s 75th Independence (Azadika Amrit Mahotsav) and CSIR-CECRI’s 75th Foundation Year (CSIR-CECRI@75), had two lectures in the month of June. **Prof. M. M. Shaijumon**, Associate Professor, School of Physics, Indian Institute of Science, Education and Research (IISER) Thiruvananthapuram delivered a lecture on “Designing Electrode Architectures for Rechargeable Batteries” on June 02, 2022. In his lecture, Prof. Shaijumon showed the exciting electrochemical properties of layered 2-dimensional materials. His research group’s efforts in understanding the origin of unusual electrocatalytic and energy storage properties due to the nanoarchitectures of various 2D materials like MoS₂, WS₂, etc. have been highlighted.

Prof. Shaijumon also interacted with the PhD scholars of CSIR-CECRI and shared his research experiences and importance of collaboration while doing research.



On June 17, 2022, **Dr. T. Prem Kumar**, Retired Scientist of CSIR-CECRI delivered a lecture on “Shifting Gears: India Goes Electric”. His lecture included the history of batteries since ancient time, the current status of various battery technologies, and compared the Indian and global scenario of electric vehicles. Dr.Prem Kumar also addressed the issues related with the thermal runaway of batteries, especially the lithium ion batteries and associated fire hazards. He also showed the future prospects of electric vehicles and various schemes of Government of India for the transition to electric mobility were also highlighted. The lecture also had a very interactive session with through questions from students and scientists.

