

# THE HINDU

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## Need for moving towards greener battery technologies

Special Correspondent

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*This will make technology of electrochemical energy storage sustainable: expert*

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Valid: Jean-Marie Tarascon, University of Picardi, delivering Michael Faraday medal lecture at Central Electro Chemical Research Institute in Karaikudi on Wednesday. — Photo: L. Balachandar

**Jean-Marie Tarascon, Director, ALISTORE-ERI & University of Picardi, France, on Wednesday stressed the need for moving towards greener battery technologies so as to increase the sustainability of energy storage.**

**Delivering Michael Faraday medal lecture 2011,**

jointly organised by the Michael Faraday Memorial Trust and Central Electrochemical Research Institute at CECRI in Karaikudi, he said the evolution of batteries, which began from 1800, had undergone innumerable changes. New technologies had been introduced by various scientists and scholars from time to time. It had impacted the civilization over the last 200 years in many ways. The introduction of Lithium-ion batteries was considered as a start of the revolution in battery history. The Li-ion battery technology, which relied on versatile chemistry, had also undergone many changes over the years.

Mr. Tarascon added that while the conventional battery chemistries were based on aqueous electrolytes, lithium systems had undergone a change from the aqueous to on aqueous medium, making it possible to exploit the high cell voltages and charge densities characteristic of lithium. However, the technology was on threshold of absorbing challenges such as safety of users, cost-effectiveness, duration of power, sustainable development and so on. The usage of nano-materials could be explored for increasing the energy storage level. It could double the benefits.

Mr. Tarascon, who holds the 2010-2011 chair on “sustainable energy society and environment” at the College de France in Paris, said that the world power demand was poised to increase from 14 TW (Terra Watts) to 28 TW in 2050, creating the necessity to improve battery systems with higher energy and power densities and to wean away from the fast depleting fossil fuels.

Sharing concern over the possible degradation of environment, he said the lithium battery technology utilized 287 kWh of energy and

released 110 kg of carbon dioxide for every kWh of battery energy. Therefore the scientists had to work towards finding solutions towards greener battery technologies so as to make the technology of electrochemical energy storage sustainable.

Stating that known resources of lithium were expected to last 80-100 years, the new technologies could be based on lithium-air, lithium-sulfur and lithium-organic. They were expected to revolutionize the electrochemical storage, Mr. Tarascon added.

Earlier, he was awarded Michael Faraday medal 2011 by K.T. Jacob, INAE Distinguished Professor, Indian Institute of Science, Bangalore.

Vijayamohan K. Pillai, Acting Director, CECRI, Yagnaraman, former Director, CECRI, Muthukrishnan, secretary, Society for Advancement of Electrochemical Science and Technology took part.