

International Conference on **MATERIAL SCIENCE AND ENGINEERING**

February 24, 2022 | Webinar

**SUPERCAPATTERY: A Breakthrough in energy storage devices****Ramesh T Subramaniam***Centre for Ionics University of Malaya, Department of Physics, Faculty of Science, University Malaya, Malaysia*

Society has experienced a global surge and reliance on mobile phones, laptops, portable medical treatment, electric vehicles to power our daily lives. The available electrochemical energy storage systems (batteries, supercapacitors and fuel cells) either provide high energy density or high-power density but not both together. We are introducing a novel solid state supercapattery, a smart hybrid device that can be used for smart and sustainable e-transportation (electric/hybrid vehicles). Supercapattery offer higher energy density than supercapacitors and higher power capability than batteries. Solid state supercapattery is expected to demonstrate outstanding advantages in tackling the safety shortcomings of traditional electrochemical devices while meeting high demands on performances. The advancement in manufacturing techniques like 3D printing has enabled the assembly of solid-state electrochemical devices in a more complex geometric configuration. We focus on synthesis and formulation of new types of electrolytes and electrodes to fabricate and optimize solid-state Supercapatterys for electric/hybrid vehicles. A novel complete solid state Supercapattery with economic feasibility is a new breakthrough in electric transportation industry

**Biography**

Ramesh T. Subramaniam is a material scientist experienced in development of polymer electrolytes as a source of energy for use in various electrochemical devices. He was selected as a "TWAS Young Affiliate Fellow" in 2009. In 2010, he received the "Pacific hem Young Scholar Award" from the American Chemical Society and in 2011, the "Young Scientist Award" from IUPAC. In 2017, he was conferred the "Established Scientist Award" by Royal Society and elected as a "Fellow of Royal Society of Chemistry. He is also a recipient of the "Fulbright Fellowship 2017" with tenure at the Princeton University, USA and a recipient of the "International Senior Research Fellowship 2018" at Durham University, UK. In 2020 he was recognized and placed as World's Top 2% Scientists for Career-Long Citation Impact by Stanford University. On the global front, he was the Invited Scientist for World Science Forum and World Economic Forum

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