

EI Seminar

New Energy Science and Digital Energy From Physics First Principle

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Time 3 – 4 pm

Venue Room 2306 (Lifts 17-18),
Academic Building, HKUST ([Location](#))

Abstract

Climate change stimulated a world-wide energy transformation towards new energy such as solar and wind energies that are renewable, particularly in the power and transportation industries. However, there are still lack of consensus as what are the fundamental rules governing the new energy science application. From physics first principle, what are the basic characteristics for a large scale new energy application? What scientific and industry laws it satisfies? Why would we expect PV-Battery Energy Storage based distributed energy resource forming microgrid be the backbone of the future new power? How will digital technology empower the microgrid and intelligent vehicle-grid interaction that form the new power? What are the challenging physics problems of microgrids and new power that deserve further study by physicists?

About the Speaker

Dr. Xiao Yan, founder and chief scientist of Shanghai MS Energy Storage Technology (www.battery-doctor.cn), founding director of Shanghai Volta Energy Storage Digital Research Institute. Long-term attention to the value creation of the industry chain of lithium batteries, research on the knowledge map of lithium batteries, especially how key battery parameters (KBP) behave during the aging process and the rapid extraction of KBP of the entire battery pack at the battery cell level and its consistency. He led the MS Energy team to launch the Prognostic Safety System (PSS), PSS-based digital energy storage maintenance system and developed the "electro-chemical level" diagnostic technology. Graduated from the Department of Physics, Peking University. He went to the United States to get his PhD degree from U Penn through the T D Lee's CUSPEA program. He has worked at the Hong Kong University of Science and Technology, Silicon Valley ReadRite and Seagate, Suzhou Institute of Nanotechnology at Chinese Academy of Sciences, and Shanghai University of Engineering Science. He has published more than 60 papers and more than 50 invention patents. Former CASPA Director, Shanghai Special Expert.

All are Welcome