What About Hydrogen?Keynote Session B IVDate: Friday, Dec 17, 2021Time: 11:30 AM-12:25 PMSpeaker: Arindam Ghosh, Professor, Curtin University, Australia

Abstract:

Due to the increasing concern for climate change and its implications on the future of humanity and this planet, renewable energy is being increasingly used in electric power generation. So far, Wind Power generation and Solar Photovoltaic based power generation have gained much attention and these technologies, along with different storage options are maturing very fast and the cost of their installation is reducing. Other technologies are under development including Concentrated Solar Power (CSP), Wave Power etc. and the 'Holy Grail' of energy production – Nuclear Fusion. Recently, however, Hydrogen has been mentioned very frequently around various countries in the world – both for automotive usage and for power generation.

Hydrogen has a high energy density by weight but has a low energy density by volume. Even when highly compressed, stored in solids, or liquified, the energy density by volume is only 1/4 that of gasoline, although the energy density by weight is approximately three times that of gasoline or natural gas. However, this is not a primary source of energy. Hydrogen, generated from renewable sources, has the potential to transport renewable energy long distance and store it long term. This talk will focus on the different aspects of hydrogen energy and will look at the plans that are being considered for the generation, storage, transportation, and usage of Hydrogen.