

Plenary Talk : “New Dimensions in Green Hydrogen Production Technologies”



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Abstract

Hydrogen has recently been recognized as a remarkable energy solution to combat global warming/climate change and achieve carbon neutral/free societies. There have been global efforts in many countries since last year to begin developing strategic plans and road maps accordingly for transitioning to hydrogen based economic system from an oil dominated economy and find technological ways to make it as smooth as possible. In this regard, there are two key requirements: materials and technologies. Furthermore, the most critical requirement here is the production of green (clean) hydrogen which is expected come out of renewable energy sources for hydrogen production. This plenary presentation will discuss the key methods and technologies (including electrochemical, chemical, thermal, hybrid, photonic, microwave and mechanical based ones) for hydrogen production, dwell on challenges, opportunities, technological dimensions and future directions. It will also address the need for deploying renewable energy systems for hydrogen production in an integrated fashion. The role of hydrogen for various sectors will also be discussed.