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GREEN HYDROGEN FOR ENVIRONMENTAL SUSTAINABILITY

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ABSTRACT

Green energy and sustainable natural environment are the most interesting topics in this modern world. As the fossil fuel resources are depleting so far, non-conventional energy resources ensure another energy source to overcome the future scarcity of fuel. Green hydrogen is a vital renewable feedstock that plays a crucial role in transitioning to a zero-carbon dioxide emission future. This presentation covers the research and development in the field of green hydrogen production methods for net zero carbon dioxide emissions. Different industrial hydrogen production methods including steam reforming, biomass pyrolysis and their contribution to global CO_2 emission would be discussed. The recent trends and future challenges in the field of photo and electrocatalytic water splitting systems will also be discussed. Moreover, different analytical tools used to characterize the recently developed photo/ electrocatalysts. Further, the implications in the research and development of solid oxide fuel cell using hydrogen energy as a drive to decarbonize the electricity and transport industries would be discussed. The precise objective is to bring the sustainable initiatives that generate green hydrogen for replacing carbon-intensive non-renewable fossil fuels.

BIOGRAPHY

Dr. Arun, P.S is working as Assistant Professor in the Department of Chemistry, St. John's College, University of Kerala. He has published research papers in reputed Journals. He is having Membership in Scientific Associations such as Founder executive of Indian Association for Hydrogen Energy and Advanced Materials, Details, NACE international, Executive Committee member of Kerala University Department of Chemistry Alumni Association, He has more than 10 years of teaching and research experience.