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Challenges and solutions: New nano-materials for renewable energy applications

As the world is facing energy crisis, across the globe all scientist trying to find alternative energy sources by 2022 with the help renewable energy via fuel cell, solar cell, battery, wind, bio fuels and small hydro plants. This is an initiative step to reduce the cost and to make user friendly technology. The demand for clean and sustainable energy has stimulated great interest in fuel cells, which allows direct conversion of chemical fuels to electricity. Among all types of fuel cells, solid oxide fuel cells (SOFCs)/ hydrogen fuel cell (HFC) have the potential to offer the highest energy efficiency of 60% approximately and excellent fuel flexibility without pollution. Currently, many scientists, researchers, and engineers around the globe are showing keen interest in commercializing of SOFC technology. Thus, one of the most popular and innovative sources of renewable energy for the future is the hydrogen economy based SOFC research. However, the materials choice for SOFC fabrication is still a major and challenging task in the field of SOFCs. Thus there is need to search alternative new electrode and electrolyte nanomaterials which can be synthesize easily with cheaper synthesis technique and in less time by saving energy to minimize the actual cost of fabrication of SOFC from its commercialization point of view. In the present and most past author tried for the solution of the challenges of SOFC by investigating new materials and synthesis technique compared to conventional one such as microwave assisted glycine-nitrate process (MS-GNP) is one of the best time and energy saving technique with enhanced expected results for SOFC applications. Thus three is need to think by the oil and gas industries too to take interest in this alternative source of energy and fuel for the transportation and stationary application point of view.

Biography

Shabana Parvin Shaikh has completed her PhD at the age of 27 years from RTM Nagpur University, Nagpur and she has completed her postdoctoral studies from National University of Malaysia, Malaysia. She has delivered talk as invited speaker and Keynote speaker at the international level such as China, Germany, Spain, UK and Malaysia. She has published her work in several high impact international journals. She is currently working as research scientist in Pune and contributing herself in the innovative research ideas in collaboration with national research institute and industries at her individual level. She is the reviewer for few international peer reviewed journal such as hydrogen energy and renewable and sustainable energy reviews. She is a regular member of International Academy of Electro-chemical Science and few more organizations. Research is her passion and she is very keen to do innovative applicative research as an independent researcher since her PhD.

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