EuroSciCon

Euroscicon Conference on

Physical Chemistry and Analytical Separation Techniques

October 08-09, 2018
Amsterdam, Netherlands

Amin A ElMeligi, J Org Inorg Chem 2018 Volume: 4
DOI: 10.21767/2472-1123-C6-016

FUTURE OF NANOMATERIALS IN HYDROGEN ENERGY AND EFFICIENCY OF HYDROGEN STORAGE

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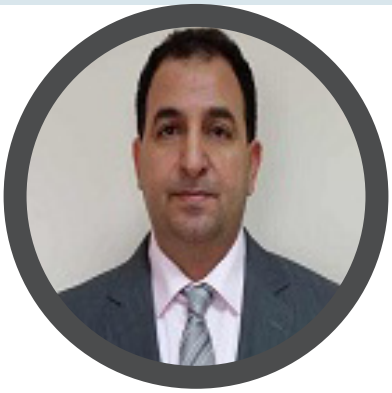

Over ten years, hydrogen energy has been applied in transportation. The infrastructure has been built and still in progress but construction can be expensive, estimated to be $1 to $2 million per hydrogen station. Hydrogen energy is clean with zero pollution. Hydrogen is a suitable source of energy since it can easily be used in automobiles similar to gasoline. The main concern is the onboard storage, which is considered as one of main barriers for utilizing hydrogen as a source of fuel. The main concern is the storage of hydrogen to be safely applied. There is a development in the hydrogen storage materials, especially nanomaterials. Recently, polyaniline is shown to possess outstanding hydrogen storage properties by carefully modifying the nanostructure of the material. By reducing the crystallite size of the hydrogen storage material such as hydride materials, nanolayered materials, the hydrogen storage can be improved. More research is needed to increase and to improve the efficiency of hydrogen storage materials

Biography

Amin A ElMeligi is a Professor of Physical Chemistry and Dean of student affairs at AMA International University, Math and Natural Science Department, Bahrain and National Research Centre, Centre of Excellence for Advanced Science, Physical Chemistry Department, Egypt. He has received his BSc and MSc from Cairo University. He received his PhD from UMIST, Manchester, UK and Cairo University, Egypt under joined supervision system. He has over 25 years of research and teaching experience. He participated in a number of national and international research projects. He is a Member of international and national organization, especially, International Centre for Diffraction Data (ICDD), USA. He was a Visiting Scientist from 2000 to 2004 at University of Durham, Chemistry Department. He is a frequent speaker in national and international conferences on materials and renewable energy, especially hydrogen storage materials, hydrogen productions and hydrogen energy and layered nanomaterials. He has published more than 35 papers in reputed journals and has been serving as an Editorial Board Member and Reviewer of reputable journals.

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