Ph. D. Pre-Submission Seminar

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Title of the Thesis: Investigation on Novel Nanostructured Materials for Sustainable Energy Applications

Date and Time: 15.05.2018 & 02:30 p.m.
Venue: Seminar Hall (GF), Department of Physics, CUTN

Abstract

In the last few decades, energy usage and demand has increased by many folds due to rising population growth and industrial revolution. At present, nearly 80% of the global energy demand is met from fossil fuels, which are non-renewables and it leaves behind carbon footprints after usage, causing environmental pollution and climate change. Owing to the serious concern over climate change due to the increasing greenhouse gas emissions from fossil fuel usage, environmental friendly renewable energies are the prime choice for satisfying our future energy needs. Some of the clean energy conversion and storage systems which has potential applications are hydrogen powered fuel cells, solar cells, supercapacitors, batteries etc. Recently, electrode materials for supercapacitors, batteries and fuel cells has received enthusiastic research attention. However, electrodes and energy storage materials has practical issues, due to their high cost, poor cyclic stability, low energy density etc. Therefore, it is essential to find novel materials for clean energy storage and conversion systems.

The thesis aims for the development of novel materials as catalyst support medium and electrode materials for hydrogen storage and supercapacitor applications. We have demonstrated a new synthesis method for developing high surface area graphene based carbon nanomaterial having high capacitance [1] and also graphene based catalyst support medium for improving the hydrogen storage behavior of magnesium hydride [2].

References

All are Welcome

Seminar Coordinator
Head of the Department