Seminar

Institute for Plasma Research

Title : Morphological and Thermophysical Properties of Metal-Oxide Nanofluids

Speaker : Ms. Janki Shah
Sardar Vallabhbhai National Institute of Technology, Surat

Date : 7th June, 2019 (Friday)

Time : 03.30 PM

Venue : Seminar Hall, IPR

Abstract:

Unique properties of nanofluids as heat absorber fluid, due to the smaller size of nanoparticles, which cover a larger surface area, make a bulkive evolution in Nanofluid. Different chemical and cost effective methods of nanofluid synthesis and characterisation are studied. As a result, thermophysical properties of nanofluids are increased due to the potential of the nanoparticles surface area increased which is suspended in the conventional fluid. The initial parameters of thermophysical properties like stability, thermal conductivity and viscosity is enhanced by some parameters like Brownian motion, interface resistance, morphology of suspended nanoparticles and aggregating in nanofluids will be discussed. The presented talk will be mainly focused on experimental studies to answer the question, "How different parameters of nanofluid do affect thermophysical properties of nanofluid?" I will discuss the enhancements of thermophysical properties for nanofluids (Al2O3 and CuO) which will be impacted toward multi-faceted variables including that volume fraction of the suspended NPs, the reaction temperature, that thermal conductivity of the base fluid, the size of the NPs and shape of particles, that pre-treatment process, and the additives of the liquids. These nanofluids have higher stability, enhanced thermal conductivity and lower viscosity are essentially useful for heat transfer application as a coolant.

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