NSAC-NCN Seminar Series

"Exploiting field-matter interactions in nanotechnology applications"

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Date: Friday, March 23, 2012
Time: 3:30-4:30 PM
Venue: Birck 1001

Abstract: Field-matter interactions can be exploited for various pursuits in nanotechnology. I shall present highlights of my research activity which spans over past 10 years. Fields (electric field/laser) have been observed to induce material modifications. Photochemical transformations for carbon materials at reduced dimensionality such as graphene (2D) and carbon nanotubes (1D) will also be presented. Excited state electron transfer has been employed to achieve white light in graphene- ZnO nanocomposite systems and enhanced photocatalysis in graphene-TiO2 nanocomposite systems. Lasing action in semiconductor nanostructures is yet another area which is relevant for field-matter interactions.

Bio: Dr. Prashant Kumar, got his Master's degree in Physics in 2003 from Jawaharlal Nehru University, New Delhi and Ph.D in Physics in 2009 from University of Hyderabad. He has worked for past 3 years as DST sponsored Nanoscience and Technology Post Doctoral fellowship at International Centre for Materials Science (ICMS), JNCASR Bangalore with Prof. C.N.R. Rao. Currently he is a visiting scholar at Birck Nanotechnology Centre and working with Prof. Fisher, Prof. Janes and Prof. Xu. His research directions attempts to understand field-matter interactions better and exploit it for various nanotechnological applications. He has authored about 40 international scientific journals, several review articles as well as book chapters and has edited a book on nanotechnology. He serves on editorial board of few nanotechnology based journals. His biography has appeared in Marquis who's who in science and engineering - 2011-2012, 11th edition.