

Seminar

Institute for Plasma Research

Title : A Novel Method of Producing Single Walled Reduced Diameter Silicon Carbide Nano Tubes (SiCNT) with Arc Plasma Treatment

Speaker : Dr. Subrata Pradhan

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Date : 17th April 2017 (Monday)

Time : 03.30 PM

Venue : Seminar Hall, IPR

Abstract :

Silicon carbide nanotubes (SiCNT) hold promising potential towards their usage in high strength structural composite materials, catalyst support, micro filtration membranes, hydrogen storage and even in plasma facing first wall materials. We have invented a novel method of producing straight as well as curved configurations of SiCNT from silicon carbide grains employing arc plasma treatment in certain specific conditions. We have been able to produce single walled SiC nano tubes (SiCNT) having reduced diameter from multiwall nano tubes under certain processing conditions. The typical in situ grown SiCNT have been characterized by XRD, TEM, SAED, EDS, micro Raman spectroscopy and FTIR to evaluate the nanostructures thus produced. A possible physical mechanism of silicon carbide nanotube formations following this route has also been proposed. The talk will elaborate the details of this work.
