

# Seminar

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## Institute for Plasma Research

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**Title :** Irradiation induced structural and electrical modification in graphene

**Speaker :** Dr. Sunil Kumar

Inter University Accelerator Centre (IUAC),  
New Delhi

**Date :** 20th January 2017 (Friday)

**Time :** 03.30 PM

**Venue :** Seminar hall, IPR

**Abstract :**

Graphene is an important material for space related nano-electronic devices. Radiation present in space environments may affect graphene based device performance. For proper use of graphene based devices in space application, it is necessary to study the effect of irradiation on it. Ion beam is an important tool to simulate space radiation condition in laboratory. The present study therefore is undertaken to investigate the behaviour of graphene under extreme condition of high energy density to test it for application in space environment and to have a better understanding of the behaviour of graphene under ion irradiation. Swift heavy ion of energy ~MeV range has been used to irradiate few layer graphene. Pre and post characterization were done by Raman, AFM, SEM, and synchrotron based XRD source. Insitu electrical measurements were done with the help of semiconductor parametric analyzer. Swift heavy ion athermal annealing effect and radiation stability of graphene under extreme conditions will be discussed.

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