

Seminar

Institute for Plasma Research

Title : Nonlinear excitations in flowing complex plasmas

Speaker : Ms. Surabhi Jaiswal

Institute for Plasma Research, Gandhinagar

Date : 2nd February 2017 (Thursday)

Time : 02.00 PM

Venue : Seminar Hall, IPR

Abstract :

Equilibrium plasma flows occur in many natural situations such as in galactic jets, solar wind etc. as well as in magnetic and inertial fusion experiments. The encounter of such plasma flows with a stationary charged object can give rise to a rich variety of dynamical phenomena such as one observes in the interaction of the solar wind with the earth or other planets. The study of such an interaction in a laboratory setting can provide much insight into fundamental processes governing linear and nonlinear collective excitations arising from the encounter. A dusty plasma, consisting of micron or submicron sized particles immersed in an electron-ion plasma, provides a unique platform and a convenient tool to explore such phenomena. In this talk I will describe my flow related experimental investigations that have been carried in a versatile dusty plasma experimental (DPEX) that has been developed at IPR. Topics that will be covered include various techniques of dust flow generation, methods for flow velocity measurement, and finally experimental results pertaining to the excitation of nonlinear coherent structures like precursor solitons and dispersive shock waves.
