

Seminar

Institute for Plasma Research

Title : Molecular dynamics study of single particle and collective effects in dusty plasmas

Speaker: Mr. Srimanta Maity

Institute for Plasma Research, Gandhinagar

Date : 25th November 2019 (Monday)

Time : 03.30 PM

Venue : Seminar Hall, IPR

Abstract:

Dusty plasma medium has proven to be an ideal test bed for studying various macroscopic phenomena where particle level dynamics can also be tracked. In the strong coupling regime, the dusty plasma medium displays visco-elastic and crystalline behavior. We have studied various properties of the dusty medium in crystalline phase which will be presented in detail in the talk. The observation of both collective and single particle responses to externally applied disturbances (viz., by inserting static as well as moving high charge particles) have been shown. The crystalline layer formation in three-dimensions in the presence of gravity and the external electric field has been studied. The parametric dependence of the formation of number of layers has been classified. The bilayer formation is studied in further detail, wherein the structural phase transition has been shown and characterized.
