Seminar

Institute for Plasma Research

Title : Elemental analysis using spectral emission from laser produced plasma

Speaker: Mr. Pravin Kumar Tiwari
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Date : 1st May 2019 (Wednesday)

Time : 3.30 PM

Venue : FCIPT Seminar Hall, IPR

Abstract :

Laser Induced Breakdown Spectroscopy (LIBS) is a spectroscopic technique for elemental analysis of specimens (solid, liquid or gas) with no or little sample preparation. LIBS has gained considerable scientific attention over the other known spectroscopic techniques owing to its simplicity. In LIBS, a high power pulse laser is used to generate the plasma at the sample surface and spectral emissions from the plasma is studied for compositional analysis of the sample. Now a days, the assurance of drug quality and quick mineral testing in drug is vital for the pharmaceutical industry. In the present work, a method has been suggested for fast identification and quantification of minerals in drugs using LIBS technique. In order to enhance the merits of LIBS technique, Multivariate methods e.g. Principal Components Analysis (PCA) and Partial Least Square Regression (PLSR) analysis have also been applied over the LIBS spectral dataset for discrimination/classifications and to measure the concentration of the constituents present in the sample. The present approach can be suitable tool for on-line impurity analysis for the industrial applications.