

Seminar

Institute for Plasma Research

Title : Plasma discharges for the ambient processing and detection of materials

Speaker : Prof. James Bradley

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Date : 14th December 2016 (Wednesday)

Time : 03.30 PM

Venue : Seminar Hall, IPR

Abstract:

Atmospheric-pressure plasmas are finding many applications in industry and technology ranging from thin film deposition to wound healing. At the University of Liverpool, dielectric barrier discharges (DBD's) are being developed and studied for the processing of polymeric materials. Two configurations are being considered: parallel plate discharges for the treatment of polypropylene and plasma jets for the polymerisation of soft organic films including polyacrylic acid. To diagnose these plasmas, a suite of techniques are being used, including molecular beam mass spectrometry, non-invasive current probes and nano-second 2-D imaging. Thin films produced by the jet configuration are analysed using XPS and TOF SIMS. In addition, the use of plasma jets for ambient desorption-ionisation mass spectrometry is discussed, showing promise as a new form of plasma-based surface analyse tool.
