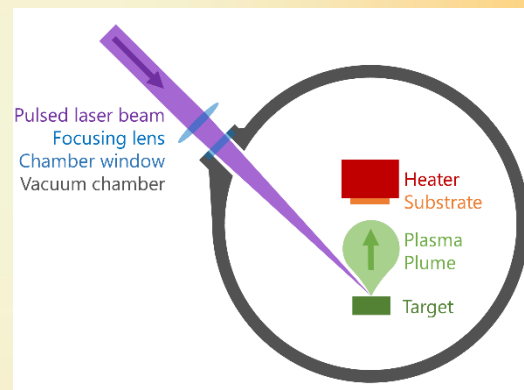
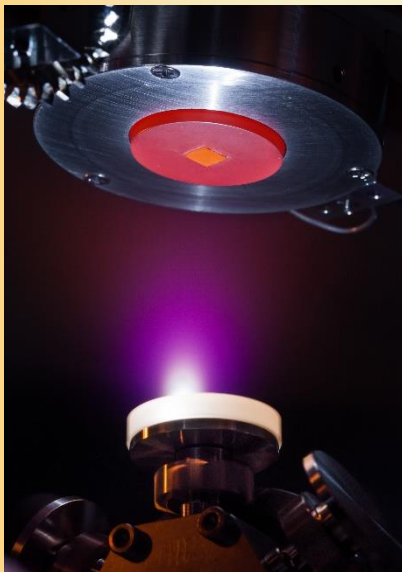


Terça-Feira, 14 de Novembro às 15h
Anfiteatro EC1.01, Azurém

Pulsed laser deposition of thin films: a simple and versatile technique for structure-composition-property studies

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Resumo: The pulsed laser deposition (PLD) is probably the most versatile laboratory technique to grow thin films to investigate the interdependence between structure, composition and properties. Simple changes of the deposition conditions such as substrate temperature, nature and pressure of the gaseous atmosphere, laser fluence, repetition rate, and wavelength will result in the growth, starting from one target only, of films having a rather wide range of compositions, crystalline grain sizes, textures, stress levels and properties.

These advantages of the PLD technique will be illustrated with examples of nanostructured SiC, ZrC and ZrN thin films or amorphous (indium zinc oxide) films grown by PLD and used to investigate the effect of radiations on their structure, composition and properties. The second example is the deposition on Ti surfaces of various coatings to improve the mechanical, chemical and biological properties of the surface. We also deposited mixtures of compounds by a combinatorial pulsed laser deposition technique to reduce the grain size and obtain amorphous protective coatings.