

Ion beams for surface analysis and modification

tutorial

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IMPRS
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Abstract

Ions beams with the energy of a few MeV are of the importance fo the research of the thin film multilayer devices. On the one side, Ion Beam Analysis (IBA) is widely used for accurate determination of the stoichiometries, elemental areal densities and impurity distributions in the thin films. This analysis to some extent can be called non-destructive. On the other side, MeV ion beams are transferring enough energy to modify the surface and are widely used for surface implantation (IBM) and accordingly modification of properties.

I would like to discuss the main physical phenomena behind the interaction of high energy ions with surfaces and the application of ion beams in Surface Science. The acceleration of ions and how they are utilized for Rutherford Backscattering Spectroscopy (RBS) and Particle -Induced X-ray Emission (PIXE) are the theme of this tutorial.

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