Surface Analysis of Materials BY LOW ENERGY Mev ION BEAMS

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ABSTRACT

This article is about surface analysis by nuclear techniques, which are essentially non-destructive, and computer simulation. The energy analysis method for nuclear reaction analysis is used. Elastic scattering is a particular and important case. Energy spectra are computer simulated and compared to experimental data, resulting in target composition and concentration profile information. The simulations use, mainly, target parameterization and published nuclear data. The method is successfully applied to determination of a uniform concentration profile of ^{12}C in a thick target, through the $^{12}C(d, p_0)^{13}C$ reaction. Elastic scattering of (4He)+ ions is applied to depth profiling of Zn, S in a thick target and Al, O in a thin film target respectively.

Keywords: Surface analysis; Nuclear reaction analysis; Elastic scattering; Computer simulation.

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