

Measurement of absolute stopping cross sections by backscattering in thin dielectric films

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Abstract

The present work deals with a different approach to the existing method of backscattering in determining absolute stopping cross sections of light ions in thin dielectric films. In this method, the uncertain molecular density (molecules/cm³) of the film is replaced (using the Lorentz–Lorenz law) by refractive index of the film, refractive index and the molecular density of the corresponding bulk material, which may be known with better reliability. The method has been applied successfully to a study of the stopping cross sections of He²⁺ in thin films of MoO₃, TiO₂, Ge, ZnSe and ZnS.
