Hydrogen Depth Profile Determination of Materials by Elastic Recoil Detection Analysis

Róbert Riedlmajer[1, a)], Dušan Vaňa[1], and Marián Hazlinger[2]

[1]*Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology in Trnava, Advanced Technologies Research Institute, Jána Bottu 25, 91724 Trnava, Slovakia*
[2]*Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology in Trnava, Institute of Materials, Jána Bottu 25, 91724 Trnava, Slovakia*

[a)]Corresponding author: robert.riedlmajer@stuba.sk

Abstract. Detection of elastically scattered recoils instead of projectiles offers the possibility to hydrogen depth profile determination of samples and is still a quantitative method for materials analysis. ERDA is combined with Rutherford back scattering (RBS) and particle induced X-ray emission (PIXE), allowing the simultaneous characterization of the hydrogen content and depth profile for important industrial materials.