

RBS METHOD FOR STUDYING OBJECTS WITH A NON-PLANAR SURFACE

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The study of the elemental composition of the modified surface of the samples was carried out by the RBS method. The energy of helium ions was $E_0 = 2$ MeV, the scattering angle $\theta = 170^\circ$, the angle of incidence of alpha particles $\alpha = 60^\circ$. A gallium phosphite (GaP) sample was used for calibration. After obtaining experimental data, modeling and analysis of the spectrum was carried out using the SIMNRA program. Figure 2 shows the RBS energy spectra of planar (a) and cylindrical (b) samples from the E110 zirconium alloy.

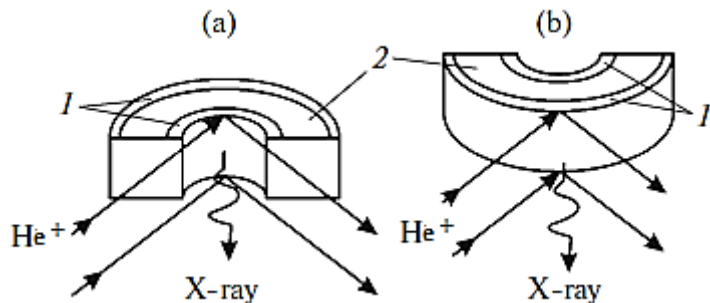


Figure 1 – The layouts of the RBS investigations of the element distribution in the depth of surface layers of (a) the outer and (b) inner surfaces of cylindrical fuel-rod cladding fragments: (1) surface layers, (2) volume of the cylindrical cladding, and primary high-energy He⁺ beam.

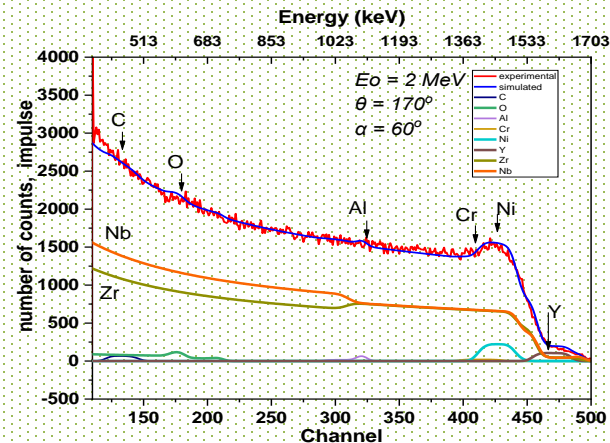
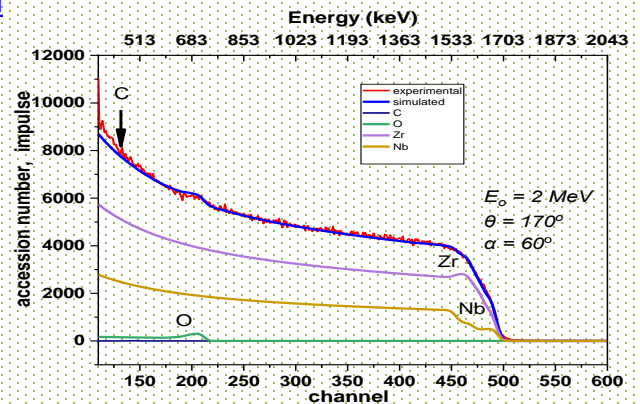


Figure 2 – RBS energy spectra of planar (a) and cylindrical (b) samples from the E110 zirconium alloy.