

MEASUREMENT OF CONCENTRATION PROFILES OF THE LIGHTEST ELEMENTS BY THE TAGGED NEUTRON RECOIL METHOD

Determination by non-destructive methods of the content and concentration profiles of the lightest elements (^1H , ^2D , ^3T , ^3He ,...) in materials is an important task, in demand in many technologies (nuclear and thermonuclear, hydrocarbon energy, hydrogen storage, etc.), and in fundamental research (studying the dynamics of saturation and diffusion of hydrogen in metals, etc.). A convenient nuclear physics method, which has a large depth of analysis and applicability to objects of arbitrary configuration and in any state of aggregation, is the Neutron Elastic-scattering Recoil Detection (NERD) method [1,2], based on the detection of recoil nuclei of these elements from the scattering of (quasi)monochromatic fast neutrons.

Section

Nuclear physics (Section 1)

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