Application of the Crystal Rainbow Effect as a Basis for a Nuclear Analytical Method

Srdjan Petrović [a)]

Laboratory of Physics, VINČA Institute of Nuclear Sciences - National Institute of the Republic of Serbia, University of Belgrade, Mike Petrovića Alasa 12-14, 11351 Vinča, Belgrade, Serbia

[a)] *Corresponding author: petrovs@vin.bg.ac.rs*

Abstract. In this work the crystal rainbow effect is described. Its application for determination of the ion-solid interaction potential, which is one of basic problem in ion-solid interaction, is presented. The crystal rainbow effect occurs in transmission of ions through channels of a crystal. We show that it is possible, by measuring the angular distribution of transmitted channeled ions, to establish a novel analytical method for determination of the ion-solid interaction potential.