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The Interaction of the Ion and X-ray Beams with Energies Less than 30 keV with Deuterated Crystal Structures

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At the ion accelerator HELIS [1,2] at the LPI, the X-ray spectra from surface of deuterated crystal targets under ion beam irradiation were studied. Additional peaks were found in the X-ray fluorescence spectra. Their appearance cannot be associated with any known elements, and is probably caused by the channeling effect of the ion beam or the products of nuclear reactions in the crystal structure of the targets. The measurements of neutron- and charged particle fluxes from deuterated targets during irradiation by ion or X-ray beam with energies less than 30 keV, indicate a possible stimulation of nuclear reactions in the deuterated crystal structure under ion or X-ray beam irradiation.

References

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2. A.V. Bagulya, O. D. Dalkarov, M. A. Negodaev, A. S. Rusetskii, and A. P. Chubenko, Phys. Scr. 90 (2015) 074051 (5pp)

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