Development of B-10-Based Detectors for Neutron Imaging.

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Results are presented on the development and testing of neutron detector prototypes based on the boron-10 isotope. One of the detectors is designed for high-resolution neutron imaging and uses a chevron stack of microchannel plates (MCP) with a B-10-coated radiator as a neutron-sensitive conversion layer. Another detector employs a scintillation material with B-10 nanoparticles added to the matrix and is intended for the detection and monitoring of neutron fields. The tests were performed at the IREN facility in collaboration with FLnP JINR.