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Development of X-ray Monochromatization Devices for Energy Calibration of Pixel Semiconductor Detectors

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Semiconductor pixelated detectors are expanding their applications in different fields: high-energy physics, medicine, environmental radiation monitoring etc. This class of detector has a high signal recording speed and, thanks to this, allows for the registration of every single photon at a sufficiently high flux. To achieve a good energy resolution of the detector of this class, the per-pixel procedure of energy calibration is required, and monochromatic X-ray sources are needed for that. Developed device at the DLNP allows for the generation of a monochromatic X-ray beam with an energy range of 15–100 keV and a monochromaticity of up to 6%, which will be useful for the procedure of per-pixel energy calibration of pixelated semiconductor detectors.

Summary

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