

3D visualization of radiotracers for SPECT imaging using a Timepix detector with a coded aperture

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The report contains a description of the SPECT system based on the Timepix detector with a coding aperture developed at DLNP JINR. Using a semiconductor pixelated detector with CdTe sensor and Timepix readout chip allows conduct research using multinuclide radiopharmaceuticals with high energy and submillimeter spatial resolution for laboratory animals. Are given the main characteristics of the resulting system, examples are shown 2D and 3D images obtained with calibration phantoms. Is being discussed possible development of the system, including changing the field of view and spatial resolution, as well as the ability to create on the basis SPECT / CT scanner installations. The characteristics of the installation are compared with commercial counterparts.

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