

DEVELOPMENT OF A CRITERION FOR IDENTIFYING CONTRAST AGENTS BASED ON HIGH-Z ELEMENTS IN MULTI-ENERGY COMPUTED TOMOGRAPHY

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The one of the main aim for new multi-energy X-ray tomograph development based on the Widepix detector is materials decomposition. The Widepix detector is one of the Medipix family pixelated semiconductor hybrid detectors developed in Medipix collaboration. This detector has a high intrinsic spatial resolution and detecting radiation capable for wide energy range. It make possible to use Medipix detector for multi-energy computed tomography. [1].

In this report presents the stage of development and applying the criterion results for identifying contrast agents in phantom containing probes with various concentrations of La, Nd, Gd and I. This criterion was tested on the energy information based presented in the form of a 2D image and a 3D reconstruction. The criterion is also capable of estimating the concentrations of contrast agents in samples.

1. R. Ballabriga. Asic developments for radiation imaging application: The medipix and timepix family / R. Ballabriga, M. Campbell, X. Llopart // Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment. –2018. –T. 878. –p. 10-23.

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