

Gamma-camera and Gamma-probe development in Turkey using CdZnTe crystals

X- and Gamma-ray medical imaging systems utilizing CdZnTe as active material offer great advantages compared to conventional scintillator systems. CdZnTe based detectors have better energy resolution, better scatter rejection capability and allow faster readout. On the other hand, the material itself is hard to produce and due to its' use in defense-related applications, it is hard to import large quantities.

To overcome these difficulties, a collaboration between METU Crystal Growth Laboratory, Sabanci University High Energy Astrophysics Laboratory and Ileri Ar-Ge Ltd. has been formed to develop the imaging systems in-house. The collaboration includes scientists from Abant Izzet Baysal University, Anadolu Saglik Merkezi and Istanbul Oncology Hospital as well.

In this presentation, after a brief summary on crystal growth and surface preparation, a more detailed description of the detector and collimator design and tests will be provided. Future work regarding phantom tests and clinical tests will be discussed as well.

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