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CZT in pre-clinical research, diagnostics, and image-guided therapeutics

Sunday 6 September 2009 17:00 (30 minutes)

Cadmium Zinc Telluride (CZT) for single-photon emission imaging applications has seen remarkable progress in recent years. CZT is a room-temperature semiconductor that is capable of excellent energy resolution and intrinsic spatial resolution (including depth-of-interaction) –making it versatile in spectroscopic and pinhole magnification configurations. CZT is used in cutting-edge multi-head, multi-pinhole pre-clinical microSPECT and dual-head, high-sensitivity breast imaging for early stage detection of small lesions. Advantages of CZT also include MRI compatibility and a limiting volumetric spatial resolution as small as 0.5 mm in the imaging plane as well as throughout depths of 5-10 mm. Dual isotopes and x-ray fluorescence can be imaged readily with CZT and new applications such as real-time image guided biopsy exploit this capability. Performance of current CZT products and prototypes will be reviewed.

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