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Use of the Medipix2 Based CdTe Microprobe in Dental Imaging

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For medical imaging devices and techniques the emphasis is generally put on obtaining high resolution and low dose images of samples or patients. Hybrid single photon counting devices together with new sensor materials and advanced techniques of image reconstruction makes this requirement more feasible. In particular cases like direct observation of dental implants also the size of the imaging device itself plays critical role.

This work presents the comparison of the images from the commercial dental imaging system with the images from Medipix2 USB Lite devices equipped by Si and CdTe sensor. The single photon counting nature of the Medipix2 chip allows virtually unlimited dynamic range of the images and thus increases the contrast significantly. The dimensions of the USB Lite device are reduced to 15 mm x 60 mm (which means that 25 % out of the total device size is actually sensitive area). Detector of this size can be used directly inside the patients' mouth.

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