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## A protype X-ray imaging system using pixelated energy resolving detectors

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A prototype X-ray imaging system, using the principle of tomographic energy dispersive diffraction imaging (TEDDI) has been developed at the University of Manchester's School of Materials. The non-destructive 3D imaging system makes use of a state of the art collimator array and a pixelated Si energy resolving detector. A proof of concept for the system has successfully been carried out using metal, polymer and organic samples being exposed to a white X-ray beam from a synchrotron source. The new rapid TEDDI system is limited to thin, low density materials due to the low stopping power of Si at higher X-ray energies. In this presentation the results of substituting Si for CdZnTe as the active detectors will be presented. A new ASIC and detector system for the rapid TEDDI measurements has been designed using our initial findings. This design will also be discussed.

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