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A Combined Energy and Angular Dispersive X-ray Diffraction System Using a Novel Pixellated X-ray Detector for Material Identification.

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A novel pixellated energy resolving x-ray detector is used in a combined energy dispersive and angular dispersive x-ray diffraction set-up enabling the acquisition of multiple scatter angles without the use of multi-collimation between the sample and the detector, using narrow beam geometry. A system with 20x20 pixels of 250x250μm pitch and Cadmium Telluride detector material is used to acquire numerous samples of pseudo-crystalline materials and others including plastics The detection configuration makes full use of the ability to acquire both energy and angular information simultaneously. The technique's ability in enhanced offline material identification is evaluated through the use of multivariate analysis software and energy-angle maps.

Preferred medium (Oral/poster)

Poster

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