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## Single-shot elemental contrast imaging using PiXirad photon counting detector

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Image detection of an elemental interest in compound samples has a specific interest in many research applications. Pixirad is a new X-ray imaging system, based on chromatic photon counting technology. The detector has a capability to count x-ray photons transmitted through the object and produce an image corresponding to the chosen energy thresholds at one exposure. Combined with wide broadband polychromatic sources, pixirad makes it possible to produce elemental contrast imaging from a single measurement. The technique operates in full-field imaging mode and uses two energy bandwidths before and after an absorption edge of an element of interest to attain its elemental distribution. In addition to the use of this detector, a three dimensional imaging of a soft tissue will also be applied.

### Keywords

X-ray imaging ,elemental contrast ,Tomography ,Pixirad detector

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