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X-ray tomography using thin scintillator films

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We developed method of thin scintillator films preparation based on thermal CsI(Tl) deposition on glass substrates. The influence of deposition conditions on the micro columnar structure and crystalline property of the films was studied by scattering electron microscopy. The element composition was investigated by X-ray fluorescence method. We measured light output and spacial resolution as a function of input photons energy (5-35 keV) and film thickness (2-20 mkm). It was observed the strong anti-correlations between the time of CsI(Tl) deposition, film light output and thallium concentration. The films can be used for charged particles beams monitoring as well as for X-ray imaging applications including micro tomography and topography.

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