

## Integration of TlBr film sensor to TimePix-3 for Direct X-ray Imaging

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Synchrotron science push to higher photon energy requires detector coupled to high-Z sensor overcoming the limitations of the traditionally used silicon detector. Integrating these detector materials with the imaging readout circuit poses a challenge for the integration particularly for small pixel sizes and large pixel count arrays. Consequently, alternate sensor materials and methodologies to couple semiconductors to read out chips may prove attractive. This work reports on the development of single- and poly-crystalline thallium bromide (TlBr) layers coupled to the Timepix-3 pixelated readout chip. TlBr thanks to its high intrinsic resistivity and high density represents an intriguing and novel sensor solution for Hard X-ray hybrid detector systems.

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