

## **Advances in X-Ray Scintillator Technology**

Durst R., Diawara Y., Mednikova G., Thorson T., Valdna V. \*, Summers C. \*\*

Bruker AXS Inc., Madison, Wisconsin; \*Tallinn Technical University, Tallinn, Estonia; \*\*Georgia Institute of Technology, Atlanta, Georgia.

Scintillator screens were one of the first techniques employed for imaging ionizing radiation and they remain one of the most important technologies for x-ray detection. We describe recent developments in x-ray scintillator screens including: 1) new low band-gap scintillators such as ZnSe and ZnTe which offer significantly higher quantum gain than classical high bandgap scintillators such as Gd<sub>2</sub>O<sub>2</sub>S, 2) advances in scintillating fiberoptic screens and pixelated scintillators for high energy imaging and 3) multilayer scintillator screens which exhibit improved efficiency and spatial resolution relative to classical powder phosphor screens.