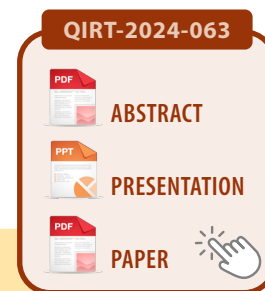




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## TOMOGRAPHY IN INFRARED THERMOGRAPHY: FREQUENCY MULTIPLEXED PHOTOTHERMAL CORRELATION TOMOGRAPHY

A technique named frequency multiplexed photothermal correlation tomography (FM-PCT) was developed to enable non-destructive and contactless cross-sectional imaging for materials characterization and industrial manufacturing applications. By combining advantages of photothermal coherence tomography and pulsed phase thermography, the FM-PCT technique facilitates the generation of three-dimensional thermal images through temporal superposition (stacking) of two-dimensional images from sequential sub-

surface depths. Major feature of FM-PCT is three-dimensional tomographic imaging with fast capture time, and overcomes the problem of spectral aliasing and phase sparsity. In addition, FM-PCT technique is suitable for more general pulse or linear scanning sources. The X-ray micro-computed tomography results demonstrate that FM-PCT imaging features excellent depth precision of subsurface discontinuities / defects in solids.