Abstract Submitted
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Interferometric and Synthetic Aperture Real-Time Terahertz Imaging[1] KE SU, ZHIWEI LIU, DALE E. GARY, JOHN F. FEDERICI, Department of Physics, New Jersey Institute of Technology, ROBERT B. BARAT, Otto York Department of Chemical Engineering, New Jersey Institute of Technology, ZOI-HELENI MICHALOPOULOU, Department of Mathematical Sciences, New Jersey Institute of Technology — Over the past several years, several methods of real-time THz imaging have been developed. In this presentation, we describe a synthetic aperture imaging method of THz imaging. A 4-element THz detector array is used to reconstruct 2-D images of a point source through the interferometric synthetic aperture imaging method. A capture rate up to 63frames/s can be achieved. The recorded video showing the movement of the terahertz source in real time can be viewed at http://www.njit.edu/∼ks265/imagingvideo.html after baseline and phase correction. Furthermore, a high power THz source will be integrated in this CW THz system for longer stand-off imaging distances.

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