Terahertz Imaging for Nondestructive Evaluation

**Speaker:** Professor David S. Citrin  
School of Electrical and Computer Engineering  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0250 USA  
and  
Georgia Tech-CNRS Unité Mixte Internationale 2958  
Georgia Tech Lorraine, 2 rue Marconi, 57070 Metz, France

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The terahertz region of the electromagnetic spectrum (100 GHz-10 THz) has undergone rapid technical development over the last thirty years, and only in the last ten years have terahertz techniques become common laboratory and industrial tools. Apart from various applications in spectroscopy, a number of optically opaque materials, such as polymers, glass, textiles, paper, ceramics, and paints, are transparent to terahertz radiation, and thus terahertz imaging may access information about these materials below the surface. In this talk we discuss our recent work on terahertz imaging to obtain three-dimensional information in a nondestructive fashion on materials of emerging importance in the aerospace, automotive, and energy industries.