

Abstract Submitted
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High-Power THz Sources for High-Energy-Density Physics Applications¹ GERRIT BRUHAUG, Laboratory for Laser Energetics, University of Rochester, HANS G. RINDERKNECHT, MINGSHENG S. WEI, Laboratory for Laser Energetics, GILBERT W. COLLINS, J.R. RYGG, Laboratory for Laser Energetics, University of Rochester, YIWEN E, KAREEM GARRIGA, X.C. ZHANG, Institute of Optics, University of Rochester — THz radiation provides a unique probe into matter that is currently not available at high-energy-density facilities like the Laboratory for Laser Energetics (LLE). Currently THz radiation is used to measure dc conductivity, provide insight into chemical and phonon structure, and even measure temperatures of static targets at standard conditions. THz radiation would provide an entirely new diagnostic window into HED matter and allow for new insights to be gained in conductivity and chemical structure. Extremely powerful THz sources can also be used as phase change drivers or heaters for targets. Recent work has shown that high-intensity lasers can be used to generate never before seen THz powers that are of interest as drivers.³ This poster will outline current work being done at the LLE to develop THz diagnostics and powerful THz sources. W. Ghann and J. Uddin, in *Terahertz Spectroscopy*, edited by J. Uddin (IntechOpen, Rijeka, Croatia, 2017), Chap. 1. C. L. Davies *et al.*, *J. Infrared Milli. Terahz. Waves* **39**, 1236 (2018). G. Liao *et al.*, *Proc. Natl. Acad. Sci.* **116**, 3994 (2019).

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