

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Narrow bandwidth Laser-Plasma Accelerator driven Thomson photon sources¹ C.G.R. GEDDES, H.-E. TSAI, T.M. OSTERMAYR, M.V. AMBAT, W.M. WALLACE, K.C. DEERING, J. VAN TILBORG, CS. TOTH, J.-L VAY, R. LEHE, C.B. SCHROEDER, Lawrence Berkeley National Laboratory, D.P. GROTE, A. FRIEDMAN, Lawrence Livermore National Laboratory, E. ESAREY, Lawrence Berkeley National Laboratory — Compact, high-quality photon sources at MeV energies for nuclear nonproliferation and other applications can be provided by Thomson scattering of a laser from the electron beam of a Laser-Plasma Accelerator (LPA). Recent experiments and simulations demonstrate controllable LPAs in the energy range appropriate to MeV sources and indicate that high flux photon beams with narrow energy spread can be achieved via control of the accelerator, scattering laser pulse shape and laser guiding. Undesired background bremsstrahlung can be mitigated by plasma based deceleration of the electron beam after photon production. The path from current experiments towards a compact photon source system will be presented.

¹Supported by U.S. DOE NNSA DNN RD, and by DOE SC grant DE-AC02-05CH11231.

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Date submitted: 03 Jul 2019

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