

Abstract Submitted
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Integrated systems for pulsed-power driven inertial fusion energy¹ M.E. CUNEO, S.A. SLUTZ, W.A. STYGAR, M.C. HERRMANN, D.B. SINARS, R.D. MCBRIDE, R.A. VESEY, A.B. SEFKOW, M.G. MAZARAKIS, J.P. VANDEVENDER, E.M. WAISMAN, D.L. HANSEN, A.C. OWEN, J.F. JONES, J.A. ROMERO, J. MCKENNEY, Sandia National Laboratories — Pulsed power fusion concepts integrate: (i) directly-magnetically-driven fusion targets that absorb large energies (10 MJ), (ii) efficient, rep-rated driver modules, (iii) compact, scalable, integrated driver architectures, (iv) driver-to-target coupling techniques with standoff and driver protection, and (v) long lifetime fusion chambers shielded by vaporizing blankets and thick liquid walls. Large fusion yields (3-30 GJ) and low rep-rates (0.1-1 Hz) may be an attractive path for IFE. Experiments on the ZR facility are validating physics issues for magnetically driven targets. Scientific breakeven (fusion energy = fuel energy) may be possible in the next few years. Plans for system development and integration will be discussed.

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