

Abstract Submitted
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Perspectives on Recent Progress in Developing Ar K-shell Z-Pinch Sources¹ J.P. APRUZESE, R.J. COMMISSO, B.V. WEBER, Plasma Physics Division, Naval Research Laboratory, D. MOSHER, F.C. YOUNG, L-3 Communications, Titan Group, Reston, VA, J.W. THORNHILL, J.L. GIULIANI, A.L. VELIKOVICH, J. DAVIS, Plasma Physics Division, Naval Research Laboratory, J.S. LEVINE, B.H. FAILOR, H. SZE, N. QI, J.W. BANNISTER, L-3 Communications, Pulse Sciences, P.L. COLEMAN, Alameda Applied Sciences Corporation, C.A. COVERDALE, Sandia National Laboratories — Various developments, including a three-plenum, “pusher-stabilizer-radiator” gas puff nozzle, have culminated in the doubling of achievable Ar K-shell yields on Sandia’s Saturn generator, from 38 to 75 kJ. This was accomplished at comparatively long implosion times of ~ 200 ns. This talk briefly reviews the more than 15 years of steady progress which brought this advance about. The Ar Z-pinch studied over that time have produced K-shell yields ranging from a few kJ on PITHON to ~ 300 kJ on the Z generator. They have been analyzed with a consistent spectroscopic method in an effort to empirically ascertain what properties make such pinches good radiators. We also examine how much they depart from Bennett equilibrium.

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