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K-shell radiation from z-pinch plasmas generated by hybrid gas-puff implosions onto on-axis wires.[1] DANIEL KLIR, J. CIKHARDT, J. KRAVARIK, P. KUBES, V. MUNZAR, K. REZAC, Czech Tech Univ, A.V. SHISHLOV, R.K. CHERDIZOV, F.I. FURSOV, V.A. KOKSHENEV, N.E. KURMAEV, N.A. RATAKHIN, IHCE in Tomsk — Production of energetic protons, deuterons, and neutrons up to 60 MeV is observed in z-pinch experiments on the GIT-12 generator at 3 MA current and 0.6 MV driving voltage. Efficient ion acceleration is obtained with a hybrid gas-puff z-pinch, i.e., with an inner deuterium gas puff surrounded by an outer hollow cylindrical plasma shell. The behavior of the hybrid gas-puff z-pinch on GIT-12 can be characterized as a high-density plasma opening switch with a microsecond conduction time, 3 MA conduction current, nanosecond opening, >20 Ω impedance after opening, and >60 MV stand-off voltage [1]. These are unique properties that can be employed in the fast transport of current into an on-axis load. For this purpose, we place Al or Ti wires on the axis of the hybrid gas-puff z-pinch. The experimental results on K-shell radiation and plasma-on-wire dynamics are presented and discussed. [1] D. Klir, et al., NJP **20**, 053064 (2018).

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