

Abstract Submitted
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Status of NDCX-II, a short-pulse ion accelerator for ion beam-driven physics studies¹ A. FRIEDMAN, J.J. BARNARD, R.H. COHEN, M. DORF, D.P. GROTE, S.M. LUND, W.M. SHARP, LLNL, A. FALTENS, E. HENESTROZA, J.-Y. JUNG, J.W. KWAN, E.P. LEE, M. LEITNER, B.G. LOGAN, J.-L. VAY, W.L. WALDRON, LBNL, R.C. DAVIDSON, E.P. GILSON, I.D. KAGANOVICH, PPPL, HEAVY ION FUSION SCIENCE VIRTUAL NATIONAL LABORATORY COLLABORATION — Construction of the Neutralized Drift Compression Experiment-II (NDCX-II) is underway at LBNL; completion is due March, 2012. This ion induction accelerator will enable studies of Warm Dense Matter and basic target physics for heavy-ion-driven Inertial Fusion Energy. NDCX-II compresses and accelerates a 20-50 nC Li⁺ pulse to 1.2-3 MeV, then shortens it to sub-ns duration in a neutralizing plasma and focuses it onto a target.² Extensive simulations optimized the design and adapted it to induction waveforms generated on a test stand; ensembles of runs established tolerances and expected performance. NDCX-II is extensible and reconfigurable; we describe the baseline design and variants, and the status of the project.

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²A. Friedman, et al., Phys. Plasmas 17, 056704 (2010).

A. Friedman
LLNL

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