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**Assembling Fuel for Fast Ignition in Cone-shell targets for Good Transport Coupling**[1] MAX TABAK, HENRY SHAY, DAVID STROZZI, LAURENT DIVOL, DAVID GROTE, DAVID LARSON, JOHN NUCKOLLS, GEORGE ZIMMERMAN, Lawrence Livermore National Laboratory — Coupling highly divergent electron beams to the fuel in Fast Ignition designs will require putting the critical surface where the electrons are born close to the high fuel density region and creating magnetic structures that can guide the flows of relativistic electrons. We use asymmetric implosions to protect the cone tip from a high pressure jet launched from the compressed,high pressure fuel region. In order to protect the cone from hard xray photons photons generated in the hohlraum we have studied using hard photon absorbing layers in the ablator as well as high-density carbon cones that don't couple to these hard photons. We have studied how to produce material structures that will produce large magnetic fields for electron guiding when the fuel is driven with relativistic electrons. In particular, we have studied how to insert materials of differing resistivities in the electron paths, so that azimuthal fields can be generated via Faraday's law. In addition, we have studied the structure of axial and radial magnetic fields produced by compression of seed fields.

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