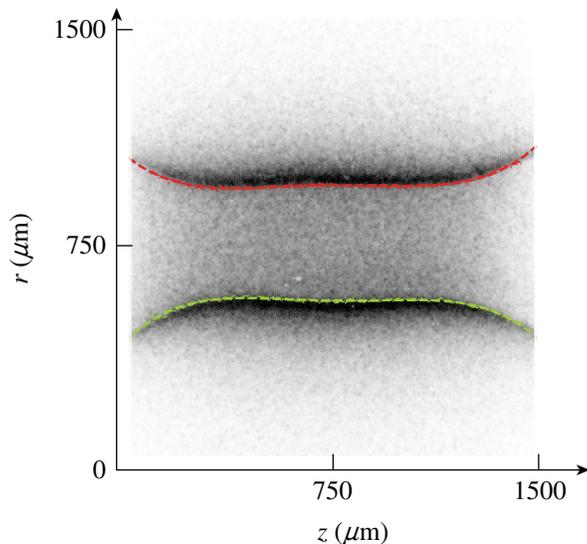


About the Cover:

The photo on the cover shows graduate student Daniel Barnak working on the Faraday rotation system outside the vacuum chamber of the MIFEDS (magneto-inertial fusion electrical discharge system) laboratory, which is used to measure the magnetic field inside



the wide variety of coils used in experiments with MIFEDS. The MIFEDS development unit (with the cover removed) can be seen in the background. Daniel reports on the development of a laser-driven MagLIF (magnetized liner inertial fusion) platform on OMEGA, which uses MIFEDS to provide an axial magnetic field in cylindrical implosions using laser-preheated fuel. The MagLIF fusion scheme was developed at Sandia National Laboratories, where the Z pulsed-power machine is used to implode a cylindrical target (liner) and the Z-Beamlet laser is used to preheat the fuel. MagLIF is now being considered by the National Nuclear Security Administration as one of three possible routes to fusion ignition in the laboratory, alongside indirect drive and spherical direct drive. OMEGA MagLIF experiments use targets that are $10\times$ smaller in linear dimensions than Z targets and will provide the first experimental data on MagLIF scaling to test theories and simulations. The photo to the left shows an x-ray framing-camera image of a cylindrical implosion resulting from an experimental campaign to optimize axial uniformity.

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