

Superconducting Thin Films For Levitation of NIF Targets

Wednesday, 22 August 2018 17:00 (20 minutes)

A key challenge in achieving ignition at NIF is the asymmetries introduced by capsule supports, which perturbs the implosion and reduces yield. This talk will detail a new approach to develop stable, support free levitation using thin superconducting films of magnesium diboride, deposited on the surface of the diamond capsules. We have demonstrated straightforward, scalable formation of MgB₂ thin films down to 50 nm using a two-step vapor reaction technique. The films have critical temperatures up to 34 K, and surface roughnesses as low as 1 nm, making them promising candidates for quantum levitation.

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