Progress Toward Ignition at the National Ignition Facility

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The National Ignition Facility (NIF) has been conducting experiments using the indirect drive approach, with the goal of achieving thermonuclear burn in the laboratory. In these experiments, up to 1.8 MJ of ultraviolet light (0.35 micron) is injected into 1 cm scale cylindrical gold or gold-coated uranium, gas-filled hohlraums, to implode 1mm radius plastic capsules containing solid DT fuel layers. Experiments have demonstrated the ability to achieve densities of 600-800 gm/cc, along with neutron yields within a factor of five necessary to enter the regime of alpha particle heating. To achieve these results, experimental platforms were developed to carefully control key attributes of the implosion. This talk will review the progress toward ignition.

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