

## **Progress of Laser direct-drive implosions on the SGIII prototype facility**

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Gas-filled capsules are directly imploded by laser energies of 6.5 kJ with 8 laser beams at SG III prototype laser facility. Nine different types of diagnostic instruments are used in the experiments, providing an understanding of the relevant target physics. The in-flight dynamics of imploding capsules is measured by streaked x-ray radiography. And a new developed 16-framed K-B x-ray framing camera is used to acquire 2D blow-off emission images of the in-flight shell and asymmetric shapes of hot spots. The measured D-D neutron yield of the gas-filled capsule is  $1 \times 10^8$  at best shots, and decreases with the asymmetry of in-flight shell, which is mainly decided by the laser spot distribution at the capsule surface.