

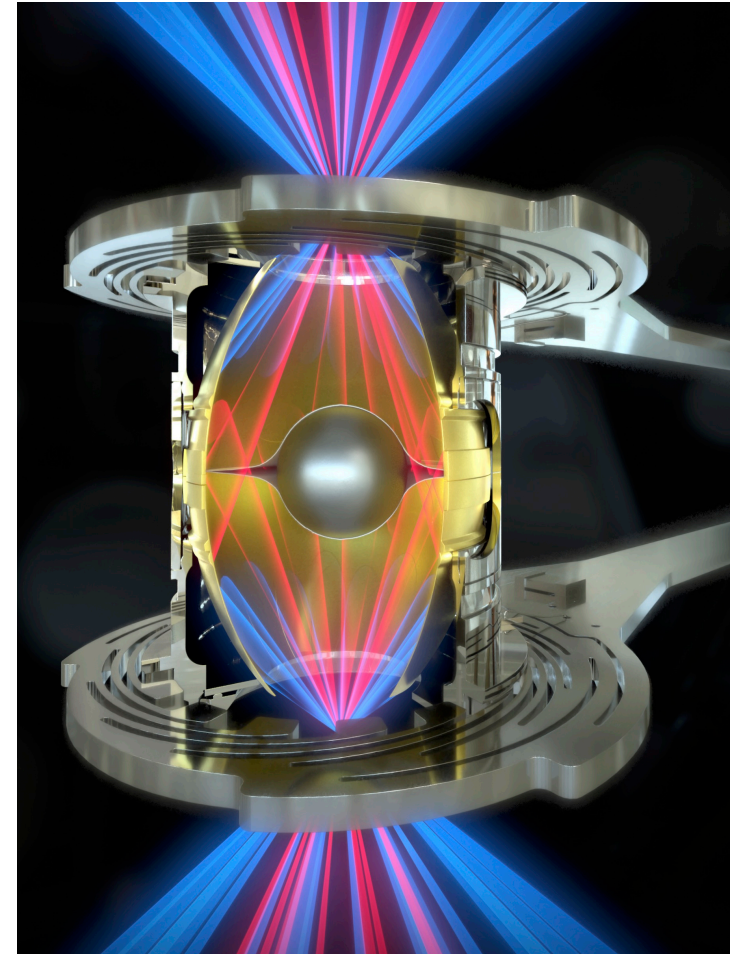
# Reaching 30% Energy Coupling Efficiency For AI and HDC Capsules Using Rugby Hohlräume at NIF

## Advanced hohlraums enhance energy coupling by accommodating larger capsules

- ~3x energy coupling from 10% to 30%, or  $\geq 500\text{kJ}$ , is possible for hot spot ignition
- Symmetry can be tuned by wall angle or wavelength detuning
- Larger hot spot is more robust to defects and instabilities

## High coupling enables volume ignition

- Low convergence requirement
- High-adiabat to suppress instabilities
- Confinement dominated by ablator
- Entire fuel is hot spot, more tolerance to asymmetry and perturbations



Ping, et al. Nature Phys. 15, 138-141 (2019); Phys. Plasmas 27, 100702 (2020)  
Amendt, et al. Phys. Plasmas, 26, 082707 (2019); Phys. Plasmas 27, 122708 (2020)