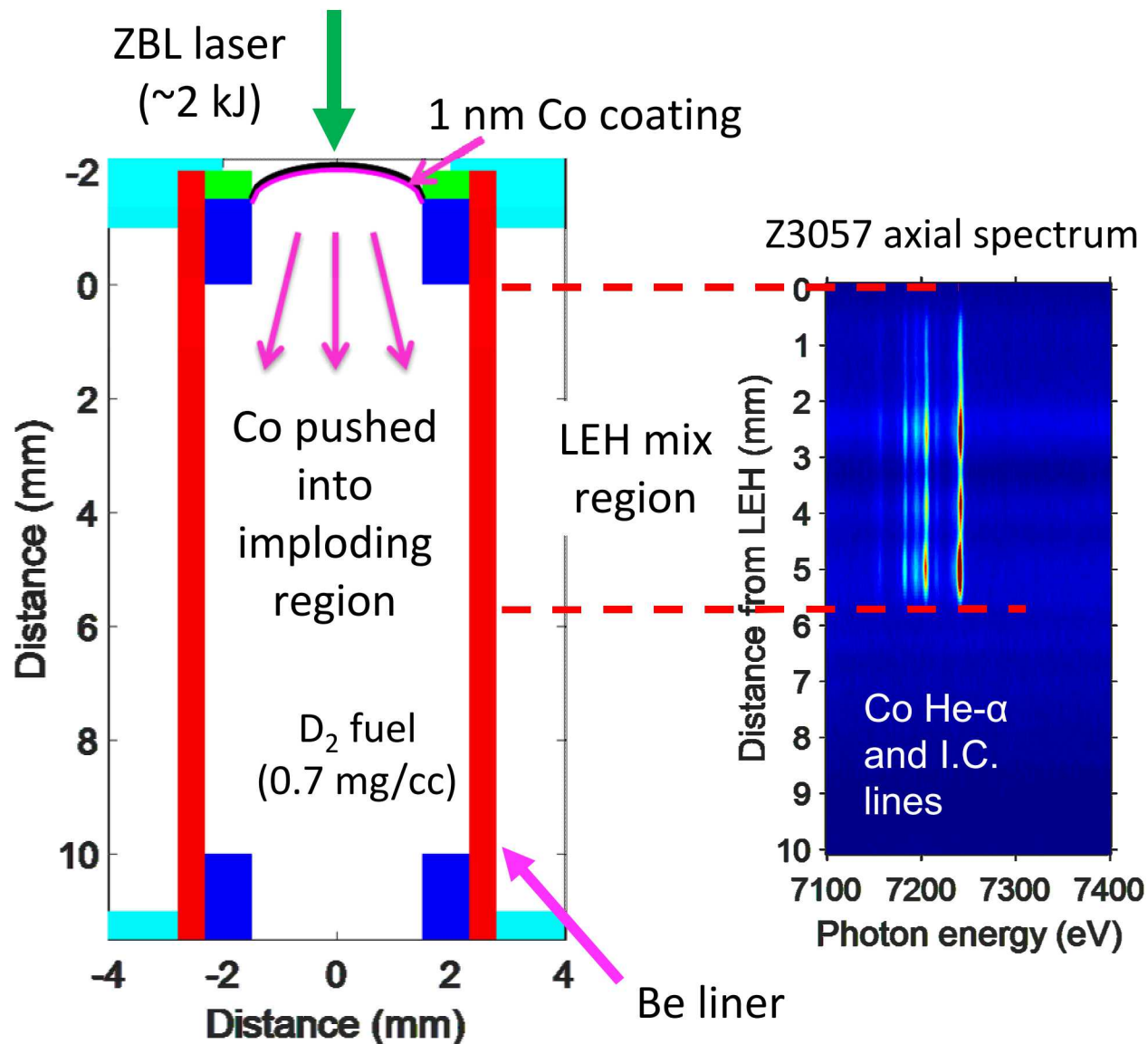


Mid-Z foil dopants should enable quantification of LEH foil mix in MagLIF

This paper describes objective technical results and analysis. Any subjective views or opinions that might be expressed in the paper do not necessarily represent the views of the U.S. Department of Energy or the United States Government.

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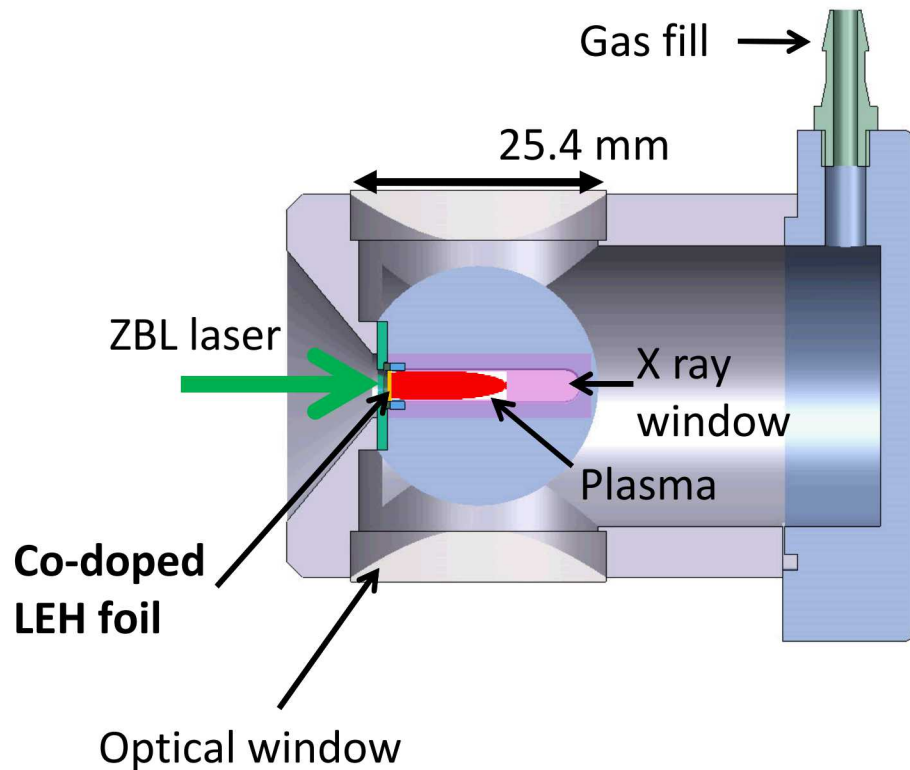


- Laser preheat can push LEH foil material into MagLIF fuel and degrade performance
- Mid-Z coatings allow the mix location to be determined spectroscopically
- Mid-Z doped foils should allow the amount and location of LEH foil material mix to be determined
 - First test is planned in March 2019

A. Harvey-Thompson et al., Phys. Plasmas, 25, 112705 (2018)

Offline laser experiments show good energy coupling through Co-doped LEH foils

“PECOS” gas cell target



- A 2.2 mm diameter, 1.6 μm Co-doped (1% by weight) LEH foil can contain 120 psi of D_2
- ZBL can couple ~ 1.6 kJ through the foil ($\sim 65\%$ of incident energy)
- This is more energy coupled at a fuel higher density than has been achieved before in MagLIF