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Medium-charged Tin Ions structure and interactions

Thursday, 8 October 2020 13:00 (30 minutes)

..In this talk our progress on identifying and characterizing multiply charged tin ions, structure, charge state, kinetic energy, and their interactions with stopping gas and plasma-facing materials surrounding a laser-produced plasma (LPP) extreme ultraviolet (EUV) light source is presented.
The following topics will be addressed:
• EUV line identifications in medium-charge Sn ions using reconstructed charge state resolved spectra from an electron beam ion trap (EBIT).
• The double-magic structure of Sn ions underlying the efficient generation of 13.5-nm EUV light in Sn LPP EUV sources.
• Optical depth as a single, pertinent scaling-law parameter capturing the overall trends in the observed changes in the complex EUV emission of the Sn LPP plasma.
• Time- and space-resolved optical Stark spectroscopy in the afterglow of the LPP plasma.
• Sn ion interactions with solid material (Ru, Mo) towards improvement of the predictive power of the commonly used SRIM simulation package.
• Aspects of stopping and charge exchange interactions of Sn ions traversing H2 gas.

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