

Abstract Submitted
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Cone surface roughness and angle dependence in high intensity laser-plasma interactions NATHALIE LE GALLOUDEC, University of Nevada, Reno, BYOUNG ICK CHO, University of Texas, Austin, EMMANUEL D'HUMIERES, University of Nevada, Reno, JENS OSTERHOLZ, University of Duesseldorf, Germany, YASUHIKO SENTOKU, University of Nevada, Reno, TODD DITMIRE, University of Texas, Austin — Cones targets of different surface roughness and angle were irradiated with the Thor laser (0.5J, 40fs, 800nm, 7micron focal spot, $3 \cdot 10^{19} \text{W/cm}^2$) at UT Austin. Smooth cones show surface structures of the order of 1-5 microns, while rough cones show surface structures of the order of 15 to 20 microns. A coordinated approach between the precision of laser parameters, available imaging diagnostics and target alignment, as well as optimizing signals on flat targets of similar material and thickness allowed us to systematically align and shoot these conical targets. Optical emission images, x-rays spectra, optical spectra of the emitted light from the tip were recorded. Preliminary data seem to suggest that a rough surface finish is more efficient. As an exploratory approach a few long nose targets were also shot. Experimental data and supporting simulations will be presented.

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