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**Optimization of Cone Wall Thickness to Reduce High Energy Electron Generation for Fast-Ignition Scheme**[1] SADAOKI KOJIMA, Institute of Laser Engineering, Osaka University, Japan, ZHANG ZHE, Institute of Physics, National Academy of Science, China, HIROSHI SAWADA, University of Nevada, Reno, USA, FIREX TEAM — In Fast Ignition Inertial Confinement Fusion, optimization of relativistic electron beam (REB) accelerated by a high-intensity laser pulse is critical for the efficient core heating. The high-energy tail of the electron spectrum is generated by the laser interaction with a long-scale-length plasma and does not efficiently couple to a fuel core. In the cone-in-shell scheme, long-scale-length plasmas can be produced inside the cone by the pedestal of a high-intensity laser, radiation heating of the inner cone wall and shock wave from an implosion core. We have investigated a relation between the presence of pre-plasma inside the cone and the REB energy distribution using the Gekko XII and 2kJ-PW LFEX laser at the Institute of Laser Engineering. The condition of an inner cone wall was monitored using VISAR and SOP systems on a cone-in-shell implosion. The generation of the REB was measured with an electron energy analyzer and a hard x-ray spectrometer on a separate shot by injecting the LFEX laser in an imploded target. The result shows the strong correlation between the preheat and high-energy tail generation. Optimization of cone-wall thickness for the fast-ignition will be discussed.

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