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Preheat measurement in the laser irradiated targets KAZUTO OTANI, KEISUKE SHIGEMORI, TATSUHIRO SAKAIYA, ATSUSHI SUNAHARA, YOICHI SAKAWA, MITSUO NAKAI, HIROYUKI SHIRAGA, HIROSHI AZECHI, KUNIOKI MIMA, Institute of Laser Engineering, Osaka-University —
We measured the temperature at the rear surface of the planar target. The target preheating is the crucial problem for the experimental researches with the high power laser irradiation. Especially, the fuel preheating can decrease the compression performance of the inertial confinement fusion targets. We applied two types of targets, one is simple foil of polyimide, and another is cryogenic liquid deuterium (LD_2) target. They are corresponding to the ablator and the fusion fuel in ICF target. The cryogenic LD_2 target was sandwiched by thin polyimide foils in both sides of laser irradiation. We observed the self emitting light from the rear surface of the target. When the target is assumed blackbody, the spectrum of emission shapes Planck distribution and tells its temperature. The laser irradiated in the wavelength of 2ω or 3ω to observe the difference of the effect of preheat by changing the laser wavelength. The preheat target was observed by optical pyrometer and VISAR. We will show the experimental results in the presentation.

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