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# P3.238 Heating of dense plasma to > 10 keV by femtosecond laser pulse for ICF

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In the last decade, it has been intensively studied to heat a compressed DT fuel to an igniting temperatures of about 5 keV by using picosecond laser pulses. In the present work, we have investigated to create high temperature (> 10 keV) plasma at relatively high densities, by using a femtosecond laser pulse combined with a specially structured micron-sized target. The structured target is designed such that the total volume is minimized to make the resultant energy density maximum, while the inner total area is maximized to make the laser absorption maximized. As a result, the fuel plasma is heated to unprecedentedly high temperatures, because the characteristic time of plasma heating is shorter than that of hydrodynamic decompression.

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