Progresses of inertial fusion energy program at GPI Hamamatsu toward mini-reactor CANDY

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- A mini-reactor CANDY [1,2] that based on kj-class diode-pumped solid-state laser (DPSSL) is proposed to perform feasibility studies of the power plant in fast ignition scheme fusion.

Progress 1: Pellet injection & engagement
- The 10 Hz operation, the same frequency with laser repetition, is achieved beyond 2 min. with illumination shot ratio of 40% per sec; 5 times improvement from the previous 1 Hz operation[3,4].

Progress 2: Target Physics [Kitagawa ID:784/Ozaki ID:834]
- LFEX laser with energy/pulse duration of 0.3-0.9 kJ/1.5-2 ps was successfully illuminated into the counter-imploded core of density 3 g/cc, ion temperature of $T_i \sim 0.7-0.9$ keV along axis or transverse of the imploding laser bundle.