

§3. Development of Cryostat for Fast Ignition Experiments

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At ILE, Osaka University, the FIREX (Fast Ignition Realization Experiment) project has been conducted to demonstrate heating of a compressed core to 5 keV using a several PW laser pulse from the Gekko laser. In 2003, development of the FI (fast ignition) target with a reentrant cone and a gas feeder pipe was started at ILE and development of the cryostat and the characterization technique is studied at

NIFS. Implosion experiment of the cryogenic target will be conducted on collaboration of ILE and NIFS. Figure 1L is the time schedule toward heating of compressed core up to 5keV.

Main achievement in 2003 was development of a 5- μ m-diameter gas feeder pipe to minimize the influence on the implosion symmetry and fabrication of low density foam to support a cryogenic fuel layer. Resorcinol formaldehyde (RF) foam was chosen for the foam material because of its high transmittance of visible light which can allow optical characterization of the cryogenic layer. Figure 1 is a timetable for the project. A polystyrene shell target with the gas feeder and the reentrant cone is also shown.

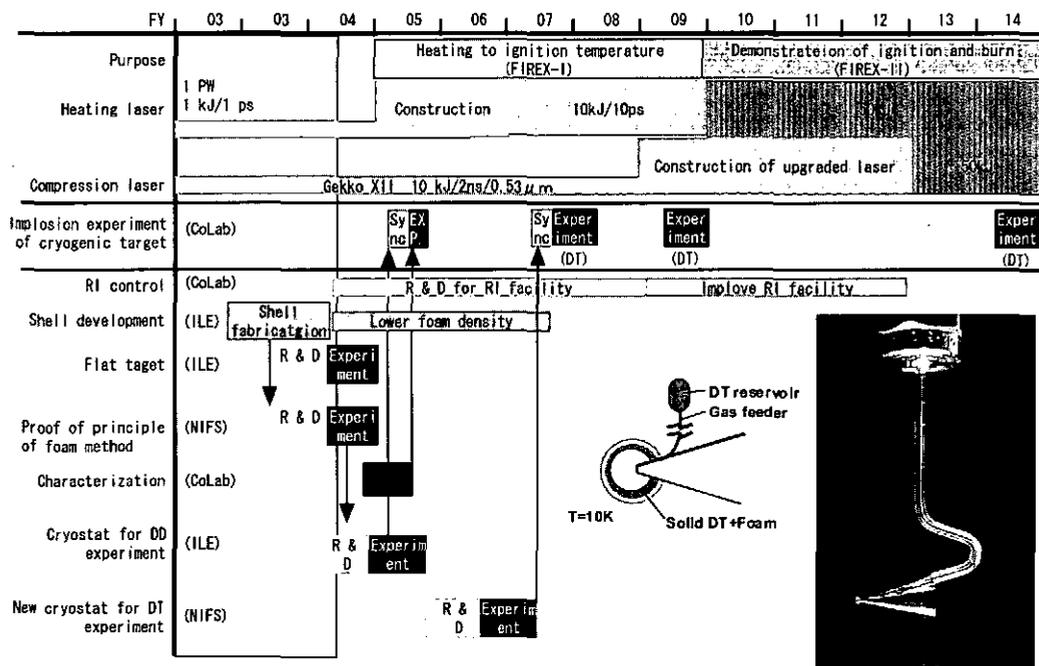


Fig. 1 Time chart for Fast Ignition Experiments and a FI test target