

### §3. Archive Activities on Laser Driven Fusion Research

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#### 1. Introduction

In collaboration with the fusion archive activities taken in National Institute for Fusion Science (NIFS), in 2012 we continue an archive activity for the inertial confinement fusion (ICF) research explored mostly at the Institute of Laser Engineering (ILE), Osaka University. This action will stop dissipation and fading of historically important documents, pictures and instruments, and accelerate computerization of them for searching. In JFY 2012, we participated in the Fusion Archive meeting and reported present status and future plan of ICF. Exchange of information on choice of objects, methods and issues appearing through out the activities are useful for us to keep efficiently running the archive at ILE.

#### 2. Background and objectives

ILE was established in 1976 to carry out the ICF researches. It was then reconstructed to be a national user's facility in 2006 to make collaborative researches using a large laser facility such as Gekko XII. Accordingly laser fusion research is categorized as a partial field of "High Energy Density Physics" with high power lasers.

Collection, arrangement, and establishment of a search system for historical items created through out these changes of ILE are important as a social accountability to transfer them to younger generations sustaining these researches in future. Up on these concepts, the archive activity at ILE was started. It is expected to remain comprehensive records of fusion researches not only by way of magnetic confinement but also with inertial confinement approaches.

#### 3. Activities in JFY 2012

The main objectives are to keep historical items in the archive storage room, and to construct a computerized search system to record history of ICF researches explored mostly at ILE. This process will be useful in case of exhibition of fusion research or publishing historic books on fusion research in Japan. This archive activity will be organically-combined with the daily activities created mostly in the administration office at ILE. Before starting, we have investigated similar activities made in the Fusion archives at NIFS or in the National Museum of Ethnology closely located from ILE.

We listed up items that should be treated as archive objects. Then we investigated with whom, how, and where they are recorded or kept. Computerization was first made for items that are recorded in a short-life media such as negative films or audio magnetic tapes. Tabulation of the selected items and down-loading of objective electric files are linked together. Research instruments are recorded with their pictures and drawings, or preserved as they are.

We participated in the Fusion Archive meeting in November 2011 at NIFS, and reported present status and future plan of ICF. The use of the archive data, adoption of new media, efficient way in terms of labor and cost, and effective way of the data handling were intensively discussed. These are being utilized for ILE archives.

ILE had the 40-year anniversary from the start of laser fusion research in the facility of laser engineering belonging to the faculty of engineering, Osaka University. As a memory, we published "Koseki II", an album of ILE activities in the past 4 decays as shown in Fig. 1. It contains outstanding achievements released in press, large projects, completion of major facilities, and list of awarded prizes, and so. (NIFS10KVXP004)

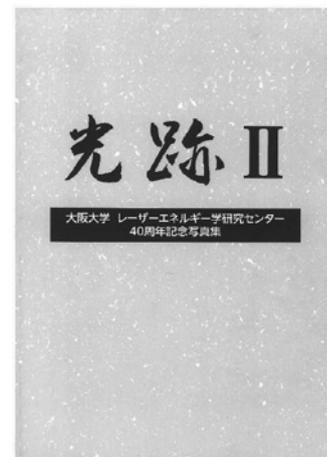


Fig.1 "Koseki-II" album for the memory of ILE 40-year anniversary