

8. Fusion Science Archives

1. Academic Purposes

After 50 years activities on fusion research, we are now approaching the new age to perform burning plasma experiments as an international project (ITER Project). However, many steps of research and development that requires large amount of additional investment are anticipated before realizing the commercial use of fusion energy. In order to receive continual support to this research from the society, it is necessary to fulfill the accountability for the fusion research. From this viewpoint, it is important to show the historical process of the fusion research so far based on evidential documents and materials and open them to the public. It will also be useful for the future generation to trace back the past research policy and review it. Our activities fall into two principal subjects:

- (1) To collect documents of historical importance for clarifying the long-year fusion research in Japan, to construct their catalog database based on international archival standard, and to open them to the public.
- (2) To write on historical processes of fusion research by analyzing the collected historical documents.

The research activities at the Fusion Science Archives (FSA) are carried out under the collaboration of several tens contributors from universities and research institutions as well as the core staffs of FSA shown below.

Head: Harukazu Iguchi,

Staffs: Sachiko Hemuki, Keisuke Matsuoka, Chusei Namba, Kazue Kimura.

Our research program covers not only fusion research but also the wider field of natural sciences. The collaborators include natural scientists, science historians, sociologists as well as fusion scientists. There are two branch activities. One is the collaborative work on fusion research history, in which fusion scientists from universities and Japan Atomic Energy Agency (JAEA) are participating. The other is the collaborative work on the history of inter-university research institutes and the Graduate University for Advanced Studies (SOKENDAI), in which scientists from those institutions and other universities are participating.

2. Outline of the Research Activities and Productions

In the fiscal year of 2012, twelve research subjects were approved at the Committee of General Collaboration Research. Major activities are listed below: Details on each research activity are described in the subsequent separate subsections.

- (1) Collection of new documents was continued. Those people who gave their documents to FSA are Masami Fujiwara (ex-director of NIFS), Osamu Motojima (former director of NIFS), Tatsuhiko Uda (former professor of NIFS), Tetsuo Tanabe (former professor of Kyushu Univ.) and NIFS administration office.
- (2) Three activity reports were presented at the Fusion Energy Joint Conference held at Kobe International

Conference Hall in June 29th, 2012. Titles and the top authors are as follows:

#1: "History of Plasma Heating Devices and Technology in Japan" by T. Kuroda.

#2 "From the Beginning of Fusion Energy Research to the JT-60 -Archive of the Prof. Kenzo Yamamoto-" by S. Matsuda.

#3: "Archival Finding Aid Available via Internet" by C. Namba.

(3) Online disclosure system for catalog-database using a cloud-type server operated by a commercial company was utilized as a test operation for a year. Three institutions (NIFS, KEK, and SOKENDAI) participated in this system where a cross retrieval tool is provided. About 1,500 data from the total number of 24,000 catalog-database of NIFS-FSA were installed and opened through Internet. The system is planned to expand to many other databases of inter-university research institutions.

(4) Records of oral histories taken in the former fiscal year are printed and registered with ID numbers. They are the interview record for the life history of Shigeru Mori (the ex-vice director of JAERI) and the lecture record of Michiji Konuma (the ex-director of the Physical Society of Japan) whose title is "History of Elementary Particle Physics in Japan and the Archives for the Yukawa Hall (present Yukawa Institute for Theoretical Physics)". Their copies were delivered on request.

(5) Interview to Yoshihiko Ichikawa (Prof. emeritus of NIFS) was carried out at NIFS on Sep. 28 and Nov. 27, 2012. Audio record was converted to printed letters and is now under proofreading.

(6) Group meetings among those scientists and archivists from inter-university research institutions on natural sciences and other universities were carried out three times in this fiscal year. The first meeting was held at NIFS in July 2012, the second held at KEK on October, and the third held at the meeting room of NINS Tokyo Office in March, 2013. Researchers from more than ten institutions and universities gathered and exchanged information on recent activities. New members from this fiscal year were invited to the meeting, which was intended to expand the research network. Research plan for the future has been discussed to go further into the history and evaluation of the inter-university research institutions as a unique Japanese system.

(7) Leaders' meeting for each general collaborative research was held at NIFS in Dec. 2012. Status and plan for each research program were presented and useful information was exchanged.

(8) The act for the management of official document was enacted in April 2011. Official documents made by administration offices are now in the control of the law. In collaboration with the NIFS administration office, we decided to collect official documents of historical importance. Series of boxes (H-series) for official documents are prepared. (NIFS11KVXP011) (Iguchi, H.)