

## §5. A Study of History of Nuclear Fusion Research Based on the Method of Oral History

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### 1. Background and purposes

More than 22,000 written documents of fusion science were collected and stored at NIFS Fusion Science Archives, in addition, some oral histories were also stored to complement NIFS FSA. It should be clear that no one can understand true history only by written documents, like meeting minutes or experiment records. It is fruitful to have interviews with fusion researchers who played an important role in fusion research in the past, since they could give detailed explanations, unique circumstances, or background situations behind the events. One of the lessons we get from various experiences of individuals is that there are different perspectives or view points to understand the events. Oral histories, therefore, help us to avoid superficial understanding toward history.

### 2. A poster presentation at JCFE

A poster presentation on the oral history of the late Professor Emeritus Chushiro Hayashi, was given at the Joint Conference on Fusion Energy in June, at Takayama city, titled “Fusion science research in 1950s in Kyoto University.” The facts in those days concerning fusion science research in Kyoto University became evident through the interview. It is well known that the two-week long seminar on astronomical nuclear phenomena was already held on the scale of all over Japan previous to the 1<sup>st</sup> International Conference on the Peaceful Uses of Atomic Energy in 1955. Little was known, however, about other activities on fusion science those days in Kyoto University. A few years ago, some handwritten memos on fusion research were found out in Professor Hideki Yukawa’s notebook, which had been archived in Yukawa Hall Archival Library. The notebook said that study groups, “*genshiryoku kenkyukai*” and “*genshiryoku konwakai*” were continuously held with Hayashi’s leadership around 1955. Besides these study groups, ultra-high temperature research meeting was regularly held those days. In 1957, Hayashi became a professor of nuclear physics, having charge of nuclear energy course. Since then he researched both astronomical nuclear phenomena and nuclear fusion on the earth. He also organized a group of *Helicon* Project beyond the various fields of science and engineering in Kyoto University. They built a ceramic device, Heliotron A, but they tried to fail to experiment with it. When Hayashi retired from Kyoto University, he cleaned up the device, which had been left for long time in the corner of the office. Looking back the days, he expressed regret over it and said he would not have thrown it away if he had known archival activity at that time.

### 3. Participation in a workshop of Japan Oral History Association (JOHA)

There was a workshop held on “Creating our history and writing down our history,” sponsored by JOHA, on Nov. 14, in Tokyo. Some issues concerning interview skills were raised and reviewed by the participants. It was fruitful to discuss the problems in carrying out interviews with other participants who majored in various social fields. The author introduced them some oral history activities on fusion science at NIFS

### 4. An interview with Professor Shigeru Mori

An interview with Professor Shigeru Mori, a former vice-president of Japan Atomic Energy Research Institute, was carried out at JAEA office in Tokyo on March 10, 2011. The interview was planned and conducted under collaboration with JAEA and Nihon University. The interviewers were Iguchi, H. and Kimura, K. from NIFS, Matsuda, S. and Yoshida, H. from JAEA and Amemiya, T. in Nihon University. The interviewers including the author figured out the issues to be investigated in interviewing Professor Mori. A letter of questionnaire entries was addressed to him in advance. He was involved in the mission-oriented projects as a leader domestically and internationally, the questionnaires consisted of mainly issues about the international projects, some devices and experiments in JAERI. To understand the root of his principles or way of thinking it is essential to know about his childhood circumstances and educational background. Therefore, the questionnaires had rather big range, key words are as follows:

- 1) Episodes during period from childhood to high school  
Birthplace, family, father’s occupation, life during the war, teachers or friends who influenced him,
- 2) Life and researches in The University of Tokyo  
Professor Goro Miyamoto’s training on experiment, Episodes of other researchers in the laboratory,
- 3) A-B dispute for future fusion research
- 4) His first visit to America in 1960
- 5) Period during the days in JAERI (1961~ )  
Hard experiences in early days in JAERI  
JFT-1, JFT-2, JT 60, Doublet III
- 6) International exchanges  
International Torus Symposium, IAEA conferences in Tokyo, Japan-US Agreement on Cooperation in Research and Development of Science and Technology
- 7) INTOR  
Rose Meeting, Chairman of INTOR Workshop, Steering Committee
- 8) Atomic Bomb on Hiroshima
- 9) Life at present

He was so strong mentally that he concentrated entirely on talking for 4 hours without taking any break. The written record of the interview will be completed in the next fiscal year.

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