

## §9. Study on History of International Exchange and International Conference on Plasma Physics and Nuclear Fusion Research

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### 1. Background and Purpose

In 1953, David Dwight Eisenhower delivered a speech entitled “Atoms for Peace” in the United Nations General Assembly. After this speech, information of the peaceful use of atomic energy has been open to the public.

The First United Nations Conference on the Peaceful Uses of Atomic Energy (Geneva Conference) was held in 1955. Homi J. Bhabha who was a chairman of this conference explained that he ventured to predict that a method would be found for liberating fusion energy in a controlled manner within the next two decades. His speech was the opportunity to declassify the information of nuclear fusion energy research of each country. In the Second Geneva Conference in 1958, the session of nuclear fusion was established, and researchers from many countries announced their result of the nuclear fusion research. Consequently, the International Atomic Energy Agency (IAEA) held Conference on Plasma Physics and Controlled Nuclear Fusion Research (IAEA Conference) in 1961. After that, a great number of international conferences were held in 1960’s. In 1971, Japan Atomic Energy Research Institute (JAERI) held the first international conference on nuclear fusion research field in Japan: Panel on Low Beta Toroidal Systems. In addition, the fifth IAEA Conference was held in Tokyo in 1974.

We have investigated the cooperative research on archival studies on the history of Fusion Energy Conference since 2008. As a result, we found out historical facts on Fusion Energy Conference and international exchange of nuclear fusion in Japan by interviews with nuclear fusion researchers and historical documents. Based on these results, we started a large-scale investigation of international conference and international exchange of nuclear fusion research. In this fiscal year, we investigated historical documents and proceedings on international conference and studied a history of international exchange on nuclear fusion research.

### 2. Content and result of this research

2-1 Investigation of historical documents for international conference and international exchange of nuclear fusion research

We have investigated proceedings and historical documents for international conference and international exchange. These documents are kept in as follows: i) NIFS Fusion Science Archives, ii) NIFS Library, iii) the National Diet Library and iv) CST Nihon University Library. Especially, we investigated materials on the history of International Conference on Plasma Physics (Nagoya, 1980) because of the interview of Yoshihiko Ichikawa (Professor Emeritus, Nagoya Univ. and NIFS). In addition to the above, we investigated the scientific journals and collected the conference report of the Second United Nations Conference on the Peaceful Uses of Atomic Energy (1958) and the First International Conference on Plasma Physics and Controlled Nuclear Fusion Research (1961).

2-2 Studies on history of international exchange and international conference on plasma physics and nuclear fusion research

Based on these documents, we have studied about “History of nuclear fusion research at the dawn stage in JAERI, ETL and RIKEN”, “The history of the nuclear fusion community’s movement for invitation of international conference to Japan at the dawn stage of plasma physics and controlled nuclear fusion research” and “Kodi Husimi’s overseas inspection of plasma physics and nuclear fusion research laboratories in Europe and USA”.

The results of our research were contributed to the scientific journals and will be presented at the annual meeting of Japanese Society for the History of Science etc. in next fiscal year.

2-3 Compilation of a chronological table on international exchange of plasma physics and nuclear fusion research in Japan

We revised a chronological table on international exchange of plasma physics and nuclear fusion research in Japan. To be concrete, we added historical facts about international exchange of the middle of 1960’s to the table.

### 3. Summary and future planning

Based on this collaborative research, we investigated the historical documents for international conference and international exchange efficiently.

By the end of this research, we would like to collect and investigate historical documents (the proceedings and reports of international conference etc.) and make the detailed chronology of the international conference and international exchange on the plasma physics and nuclear fusion research field.

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