

## §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 his speech, information of the peaceful use of atomic energy opened a place 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 method within the next two decades. His speech gave the opportunity to declassify the information of nuclear fusion energy research of the world.

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 conference held in the world in 1960's. In 1971, Japan Atomic Energy Research Institute (JAERI) held “Panel on Low Beta Toroidal Systems” was an international conference held for the first time in Japan. In addition, the fifth IAEA Conference held in Tokyo in 1974.

We have investigated the cooperative research on archival studies on the history of Fusion Energy Conference since 2008. 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Conference and international exchange of nuclear fusion in Japan by interviews with nuclear fusion researchers and historical documents.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 researches 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 In this fiscal year, we investigated historical documents and proceedings on international conference and studied a history of international exchange on nuclear fusion research.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2-1 Investigation of historical documents for international conference and international exchange of nuclear fusion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We have investigated proceedings and historical documents for international conference and international exchange.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 keep in five institutions that are NIFS, Japan Atomic Energy Agency (JAEA), Sakata Memorial Archival Library, Department of Physics, School of Science, Nagoya University, the National Diet Library, and CST Library, Nihon University. In NIFS, the documents are stored in four locations that are Fusion Science Archives, Research Information Office, and Library.

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 on nuclear fusion research of JAEA at the twilight period”, “Resurvey of a historical fact of Plasma Physics and Nuclear Fusion Research -On the current of discussion about B-plan in the Kakuyugo Senmonbukai (Special Panel on Nuclear Fusion Research)-”, “Tihiro Ohkawa's history of nuclear fusion research on D.C.Octopole” and “Studies on history of Fusion Energy Conference - Comparison of Performance of Machines in Reports of the Third International Conference on Plasma Physics and Controlled Nuclear Fusion Research -” etc. The results of our research were presented at the meeting of the Physical Society of Japan, at the annual meeting of Japanese Society for the History of Science and Technology and at the annual conference of CST, Nihon University.

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

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

### 3. Summary and future planning

We investigated proceedings and historical documents for international conference and international exchange efficiently by this collaborative research.

As future planning, we would like to study a history of international conference and international exchange on plasma physics and nuclear fusion research in detail. At first, we would like to collect and investigate historical documents (especially, conference proceedings and reports etc.) for the Second United Nations Conference on the Peaceful Uses of Atomic Energy.

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