

## §7. Archival Studies on History of IAEA Fusion Energy Conference

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### 1. Background and Purpose

Fusion Energy Conference is known as the most important conference in the field of nuclear fusion research. The name of the nuclear fusion would be known by the speech of Chairperson Homi J. Bhabha in the First United Nations Conference on the Peaceful Uses of Atomic Energy in 1955. In the Second United Nations 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) established in 1957 would hold Conference on Plasma Physics and Controlled Nuclear Fusion Research. This conference was renamed Fusion Energy Conference in 1996.

After the Second United Nations Conference, the research of the nuclear fusion in the world has reached the 50<sup>th</sup> year in 2008. Therefore, we started the cooperative research on archival studies on the history of Fusion Energy Conference. In this fiscal year, we investigated historical documents for Fusion Energy Conference and studied a history of international exchange of nuclear fusion research in Japan.

### 2. Content and result of this research

#### 2-1 Investigation of historical documents for Fusion Energy Conference and international exchange of nuclear fusion research in Japan

We investigated historical documents for Fusion Energy Conference and international exchange in Japan. These documents are kept in the followings: i) NIFS Fusion Science Archives, ii) NIFS Research Information Office, iii) NIFS Library, iv) Institute of Physical and Chemical Research (RIKEN) Library, v) Sakata Memorial Archival Library (SMAL), Department of Physics, School of Science, Nagoya University and vi) the National Diet Library.

#### 2-2 Historical Studies of Fusion Energy Conference

Based on these documents, we studied about “History on nuclear fusion research of Institute of Physical and Chemical Research (RIKEN) at the twilight period”, “Resurvey of a historical fact of Plasma Physics and Nuclear Fusion Research -On the then Opinions on Bhabha’s remark about the Possibility of Controlled Nuclear Fusion Reactor

at the first United Nation Conference of Peaceful Uses of Atomic Energy-”, “On the effect of the group of particles (Soryushiron-Group) on nuclear fusion research plan in Japan”, “Tihiro Ohkawa’s history of nuclear fusion research from 1965 to 1970” and “Studies on history of Fusion Energy Conference -On the comments of Japanese attendee about Third International Conference on Plasma Physics and Controlled Nuclear Fusion Research and its effect on nuclear fusion research in Japan-” 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 College of Science and Technology, Nihon University.

#### 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 (see Table.1). To be concrete, we added historical facts about international exchange of 1970’s to it. This chronological table is kept in NIFS Fusion Science Archives and Group of History of Science, Department of physics, CST Nihon University.

Table.1 The second edition of chronological table on international exchange of plasma physics and nuclear fusion research in Japan (example 1971)

年代	日本国内での動き(学術会議、原子力委員会、大学単位等)	会議報告・会議情報	国際状況(国際会議、国際交流等)
1971	<p>121 原子力特別委員会核融合部会第6期第1回・新田合同⑩日本学術会議第7次会議</p> <p>6 国際交流について</p> <p>森委員から原研主催の国際パネル準備の状況報告、高山国際交流小委員会から、IAEAのワシントン会議の国内の応募状況についての報告と、今年予定されている海外でのおもな集会につき、資料2による説明があった。</p> <p>次いで、伏見部会長からIAEAのIFRC(International Fusion Research Council)の日本のメンバー選出について、科技厅から意見を求められているとの報告があった。議論の後、部会長に一任することとなった。</p> <p>34 MSラビーバービッチより伏見康治宛の書簡が届く。</p> <p>LAアルチモビッチが原研主催の国際トラス討論会に出席しなかった点に遺憾の意を表した2月17日付の伏見の手紙に対する返答。</p> <p>⑪核融合研究誌26巻別冊その2内のp.113に日本語訳が掲載</p> <p>427 第11回専門委員会⑩プラズマ研究所大会議⑪核融合研究誌第27巻別冊その1</p> <p>⑫1 連絡報告</p> <p>(1)運営委員会(佐藤)</p> <p>⑬ 外国人研究員の来日等</p> <p>1)学振 イドL.Jordan(ユーリッヒ)4月7日未日</p> <p>⑭ C.M.Breams(ユートハース)未日連絡なし</p>	<p>(国際交流)・Meek教授来日</p> <p>梅原 謙、篠原 卯吉 / Meek教授挨拶、J. M. Meek / Meek教授講演要旨 - スパーク放電の機構 - : 抄訳、堀井 憲</p> <p>⑪『放電研究』Vol.43, Jan., 1971</p>	<p>国際会議・第4回プラズマ物理および制御核融合に関する核融合国際会議(The 4th International Conference on Plasma Physics and Controlled Nuclear Fusion Research June 17-23 @ Madison, Wisconsin, USA)</p> <p>・第1回International Fusion Research Council(IFRC)会議(6 @ Wisconsin, USA)</p> <p>・第10回電離気体現象国際会議(9.13-9.18 @ Oxford, England)</p> <p>・第4回原子力平和利用会議(9.6-16 @ Geneva, Switzerland)</p>

### 3. Summary and future planning

We investigated historical documents for Fusion Energy Conference efficiently by this collaborative research. Furthermore, we were able to know historical facts on Fusion Energy Conference and international exchange of nuclear fusion in Japan by interviews and historical documents. Based on this research, we are planning to expand our research. At first, we would like to study a history of international exchange and international conference on plasma physics and nuclear fusion research in detail.

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