

## §7. Compilation of the Chronology on the International Exchange of Nuclear Fusion about the University in Japan

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### 1. Background and object of this research

In 1820, Sir Arthur Stanley Eddington suggested that stars obtained their energy from nuclear fusion of hydrogen to helium. Hans Albrecht Bethe introduced the theory for the fusion in 1939. After the world war II, the nuclear fusion reaction was utilized in military purpose.

David Dwight Eisenhower, who was inaugurated as the thirty-fourth president of the United States on January 20, 1953, delivered a speech entitled "Atoms for Peace" in the United Nations General Assembly in New York City on December 8, 1953. Information of the atomic energy would be opened to public after this speech. In 1955, the international conference on the peaceful uses of atomic energy (Geneva Conference) was held in the United Nations. Homi Bhabha who was a chairman of the conference explained that the nuclear fusion would be achieved within twenty years. In the second Geneva Conference held in 1958, the research of the nuclear fusion was announced at the first time. In the conference, Japanese researchers presented two papers. Before this conference, international conference on phenomena in ionized gases was held in Oxford in 1953.

The committee of communication of nuclear fusion study (Kakuyugou kenkyu renraku kai) of Science Council of Japan founded the sub-committee of international exchange (Kokusai kouryu iinkai). The mission of this sub-committee was to inform the opening of the international conference and to nominate the researcher who attends international conference. The sub-committee of 10th period (chairman: Shigeru Mori) held in 1976 planned the compilation of the white paper in order to grasp the present condition of international exchange (NIFS FSA ID number 012-01-01). Because the international conference of fusion research had increased and government had supported fusion research preponderantly, it was pointed out at the sub-committee that the number of researchers who attended the international conference had increased. As the result, in the individual correspondence, a general balance may be lost. Then, it is recognized that the efficiency of the attendance must be improved. The sub-committee investigated with this kind of editorial policy, drew up the report "Analysis of present condition and proposition about international exchange of nuclear fusion (Kakuyugou kokusai kouryu ni kansuru genjyou bunseki to teian)" in August 1977.

This problem of international exchange was argued even at the sub-committee of 11th period (chairman: Chiyoie Yamanaka) (NIFS FSA ID number 012-11-03). Editorial policy of 11th sub-committee was to concentrate the general will of researchers of our country and to think effective and appropriate system of the international exchange. This sub-committee issued the report "Analysis of present condition and suggestion to the future about international interchange of nuclear fusion (Kakuyugou kankei kokusai kouryu no genjyou bunseki to shourai eno teigen)" in May 1980.

The researchers of nuclear fusion recognized the importance of international exchange strongly and they drew up the white papers in order to grasp the present condition of international exchange. Therefore, history of the nuclear fusion which is seen from the international exchange has special meaning. We would like to investigate the trend of international conference, and to draw up the chronological table.

### 2. Content and result of the research.

The international conference in which the Japanese researcher reported the research of nuclear fusion at the first time was the second Geneva Conference in 1858. But, in the preceding year professor Kanji Honda of the University of Tokyo had announced about the research of the super high-temperature plasma in the third international conference on phenomena in ionized gases held in Venice.

There were two international conferences concerning of the plasma and nuclear fusion research in 1950's.

In 1960's, international conference on plasma physics and controlled nuclear fusion research (1961) and European conference on controlled fusion and plasma physics (1965), etc. were held, and the number of the international conference exceeded ten. In 1970's, the number of the international conference kept increasing. The nuclear fusion study livened up internationally and the research center of the nuclear fusion was founded in some universities in Japan.

### 3. Location of literature and future problem

The proceedings of the sub-committee of international exchange are kept in NIFS. We used the proceedings in this research. We would like to investigate detailed information such as the name of author and the title of paper that was reported at international conferences, and to draw up a chronological table.

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