

§8. Contribution to the Activity of Japan Society of Plasma Science and Nuclear Fusion Research in Editing a Special Issue “History of Fusion Research in Japan”

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Introduction

The Japan Society of Plasma Science and Nuclear Fusion Research decided to publish a Special Issue, “History of Fusion Research in Japan” commemorating the fifty year anniversary since the establishment of her predecessor, “Kakuyugo Kondankai” which was organized by Prof. Hideki YUKAWA in 1958.

The Special Issue will be composed of: I Preface, II History of nuclear fusion research in Japan, III The present status and the future of nuclear fusion research, IV Flow diagram, chronology and archives.

The members of Fusion Science Archives have made a significant contribution to this activity, particularly in the Items II and IV above mentioned. On Item II, the members played key roles in organizing the round-table talks among senior scientists of good knowledge on the topics, and in preparing the drafts for articles to appear in the Issue based on the records of the round-table talks. The flow diagrams and chronological tables prepared by the Fusion Science Archives were quite useful for the participants of the round-table talks to concentrate on the specified topics of the talk through correct recognition of historical facts. Abstract for each talk, explanation of keywords unfamiliar for young readers and the profiles of each participant will also be included in the Issue.

Round-table talks

In this fiscal year, three round-table talks were held. The fourth one will be held early in the next fiscal year.

(1) Round-table talk on “Twilight Period”

- a. Subject: “Nuclear Fusion Research in Twilight (around 1955 – 1960) and Cradle (around 1961 – 1972) Period”
- b. Participants: Kōdō HUSIMI, Ichiro KAWAKAMI, Shigeru MORI, Zensho YOSHIDA (chair), Junji FUJITA, Chusei NAMBA.
- c. Date: 2007.12.19, 2:00 – 5:00 pm
- d. Place: Meeting Room of Sanjo Conference Hall, The University of Tokyo.
- e. Main topics: (i) How the nuclear fusion research started in Japan around 1955 – 1970. (ii) Enthusiasm for nuclear fusion research. (iii) So called AB dispute, a discussion whether we should start with fundamental research (A-plan), or with more fusion-oriented research constructing a sizable machine (B-plan). (iv) Establishment of “Institute of Plasma Physics, Nagoya University (IPP).” (v) Role of the journal “Kakuyugo-Kenkyu” and “Kakuyugo Kondankai as a

fusion community. (vi) Nuclear fusion as national key industries. (vii) Messages to the future.

(2) Round-table talk on “Growing Period”

- a. Subject: “Nuclear Fusion Research in Growing Period (around 1973 – 1990)”
- b. Participants: Atsuo IYOSHI, Taijiro UCHIDA, Kazutaka KAWAMURA, Hiroshi TAKUMA, Kenro MIYAMOTO, Tatsuhiko YAMANAKA, Masaji YOSHIKAWA, Yuichi OGAWA (chair), Junji FUJITA, Chusei NAMBA.

c. Date: 2007.12.22, 1:00 – 5:00 pm

d. Place: Meeting Room of Sanjo Conference Hall, The University of Tokyo.

- e. Main topics: (i) From fundamental research to more fusion-oriented research (ii) Role of “Grant-in-aid by Monbusho” on nuclear fusion research at universities. (iii) Tokamak versus helical system, and tokamak research at JAERI. (iv) Establishment of National Institute for Fusion Science (NIFS). (v) Training of students and young scientists, and role of universities for this purpose. (vi) Social recognition of nuclear fusion research. (vii) Messages to the future.

(3) Round-table talk on “Joint Research Institute”

- a. Subject: “Cooperative Research and Joint Research Institute”

b. Participants: Hideo IKEGAMI, Haruo OBAYASHI, Osamu KANEKO, Shuichi TAKAMURA, Katsunobu NISHIHARA, Kyoji NISHIKAWA (chair), Junji FUJITA, Chusei NAMBA.

c. Date: 2007.9.8, 10:00 am – 2:30 pm

d. Place: Art Space C, Aichi Arts Center

- e. Main topics: (i) Establishment of a joint research institute for nuclear fusion research in Japan, and history of IPP. (ii) Problems of joint research institutes. (iii) Joint research at NIFS. (iv) Communications between institutions and fusion communities. (v) Preparation for ITER era.

(4) Round-table talk on “International Collaboration”

- a. Subject: “Nuclear Fusion Research and International Collaboration”

b. Participants: Junji FUJITA (chair), Shiori ISHINO, Yoshihiko ICHIKAWA, Akio KITSUNEZAKI, Kenji SUMITA, Ken TOMABECHI, Akira MIYAHARA, Chusei NAMBA.

c. Date: to be held on 2008.4.18, 1:30 – 5:00 pm

d. Place: Meeting Room of Tokyo Office, Japan Atomic Energy Agency.

- e. Main topics: (i) Motivations to promote international collaboration. (ii) Difficulties and problems in carrying out international collaborations. (iii) Initial phases of IEA/TEXTOR, RTNS-II, DOUBLET-III, ITER, inertial fusion program, and other collaborations.

Flow diagram, chronology and archival materials

Flow diagrams have been produced for easy visual understanding of nuclear fusion research and development, on the basis of chronological tables edited at the Fusion Science Archives. Old photographs valuable from the archival viewpoint have been collected, and some of them are to appear in the Special Issue.