

### §3. Compilation of Chronology Based on Fusion Science Archives

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#### Introduction

The research for compiling chronology, being made continuously since 2006, aims mainly to survey different paths and efforts from the initial stage to the construction phase of a test reactor by international collaboration in fusion science researches and their developments. Based on NIFS Fusion Science Archives, the database of chronological tables has been constructed. Eventually in 2007 the chronological data of 2,300 events were registered.

#### (1) Supplement of Chronology of the history of the Institute of Plasma Physics (IPP), Nagoya University

The 25 years' history of IPP was published in 1986; however, the history of 3 years till the termination of IPP in 1989 remained not documented. The supplement of chronology was edited and subjoined to the history of IPP.

#### (2) Contribution to the fifty-year anniversary in Fusion Science Research

About 50 years have passed since researchers' society of nuclear fusion research, "Kakuyugo Kondankai," was established in 1958. 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. It might be summarized that physicists stepped in the controlled

thermonuclear researches in various ways in 1950s. The chronological table helps to recall what went on those days.

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Date	Some events from supplement of chronology of the history of IPP
1987.01.07	The 154 <sup>th</sup> Steering Committee ( <i>Un'ei Inikai</i> ) in the Institute of Plasma Physics of Nagoya University, Prof.T.Uchida was nominated as the next Director (assumed in 1987.04)
04.20	Education Ministry set up the collaborators committee for survey research to promote fusion science.
05.21	The 1 <sup>st</sup> ITER technical working group
07	Land purchase for the coming National Institute for Fusion Science ( 1176 million yen for 47 ha in <i>Toki</i> city)
07.30	A symposium on future plan of fusion science was held by Science Council of Japan
1988.04.08	Minister of Education set up a preparatory office for establishing NIFS ( <i>Sosetsu Junbishitsu</i> )
05.11	The 1st preparatory committee for establishing NIFS ( <i>Sosetsu Jumbi Inikai: Chairperson S.Hayakawa</i> )
05	SCJ and The Japan Society of Plasma Physics and Nuclear Fusion Research jointly filed Petitions calling for: 1) Expand and improve the academic field of fusion reactor engineering 2) Set up priority (strategy) field of grant-in-aid for Nuclear Fusion R&D since 1990
05.27	The 1 <sup>st</sup> LHD design group meeting was held.
06	Experiment (Compact Helical System) was started..
07	Establishment of NIFS and the construction of LHD were approved at the general assembly of the 36 <sup>th</sup> Science Council of Education Ministry.
1989.04.06	The 165 <sup>th</sup> (last) Steering Committee of IPP, 137 of researchers and officers were transferred from IPP to NIFS.
05.29	IPP was disestablished, 3 divisions were transferred to Plasma Science Center in Nagoya Univ. and 21 divisions to NIFS.

#### Chronology of Fusion Science Researches in 1950s

Date	Event	ID of Fusion Science Archives
1950	Sweden: Hannes Alfvén published <i>Cosmical Electrodynamics</i> (MHD theory)	716-18
1950.10	USSR: Idea about toroidal magnetic thermonuclear reactors (Igor Tamm and Andrej Sakharov)	075-06
1951	UK: All the fusion works were classified. In 1946 G.P.Thompson & M.Blackman at Imperial College registered a patent for a thermonuclear reactor (unclassified in 1956)	716-18
1951-1956	USA: Project Sherwood (Pinch, Stellarator, Mirror, Astron, Cusp)	075-06
1951.03	USA: L. Spitzer, Jr. proposed to the AEC the construction of a magnetic plasma device to study controlled fusion.	716-17
1952	USA: R.F. Post (LLNL) proposed Mirror system	075-06
1953	JPN: Ohkawa Tihiro's idea, FFAG Accelerator(Fixed Field Alternating Gradient) taken by MURA (Mid-western University Research Association)	072-08
1953	USA: Princeton's first research device was the Model A Stellarator. Experiments compared plasma confinement in the figure-8 geometry with confinement in racetrack geometry. Basic idea for Ion Cyclotron Resonance Heating (ICRH) of the plasma was set forth.	716-17
1953.12.08	USA: President Dwight D. Eisenhower addresses a speech to the UN General Assembly in New York City on peaceful uses of atomic energy.	
1954.03.01	USA: Hydrogen bomb test on the Bikini Atoll in the Pacific Ocean, a Japanese fishing boat named the Fukuryu-maru V was contaminated by radioactive fallout.	
1954.03.05	JPN: The first budget for atomic energy (235 million yen) was passed at the House of the Representatives.	301-16
1955.02	JPN: 1 <sup>st</sup> Symposium on Astrophysics held at Kyoto University	301-20
1955.08.08	The 1st International Conference on Peaceful Uses of Atomic Energy (Geneva)	301-16
1955.11.30	Japan Atomic Energy Research Institute founded	512-32
1956	Sweden: First experiment of nuclear fusion by means of discharge (Uppsala Institute)	075-06
1956-1957	Germany: First experiment of nuclear fusion (Göttingen Univ. and Munich Univ.)	075-06