1. US-Japan (Universities) Fusion Cooperation Program

As the both sides of US and Japan agreed the usefulness and necessity of the continuation of the US-Japan Joint Activity in the area of fusion research, the new scheme for the US-Japan Joint Activity is being pursued.

NIFS as a member of "Inter-University Research Institute, National Institutes of Natural Sciences" conducted successfully the LHD experiments as well as theory and simulation together with collaborators from Universities, JAEA and the international institutions.

One of the main activities of the Japanese university researchers participating in the US-Japan collaboration is the research in the national spherical torus experiment (NSTX) in Princeton University, while many US researchers participated in the LHD experiments just as in the last year.

The US-Japan joint project: the JUPITER-II project has been completed, and the new US-Japan joint project named TITAN (Tritium, Irradiation and Thermofluid for America and Nippon) started in the fiscal year of 2007.

Fusion Physics Planning Committee (FPPC)

In the area of fusion physics, out of 47 exchanges 42 were completed. This completion number is almost the same level as in the previous year. The workshops were successfully held, and the exchanges continue to be productive and beneficial to both sides. The annual meeting of the FPPC was held on April 16, 2007 at PPPL of Princeton and partly by a televideo communication with Tokyo. Participants were from Universities, NIFS, JAEA, and DOE to summarize the 2006 activities and formulate the 2007 activities. The 2007 activities are selected based on the new re-organized category areas: 1) Planning, 2) Steady-state Operation (including Current drive and Heating, Plasma-surface Interactions, Heat and Particle Control in Divertor and SOL), 3) MHD and High Beta (including Disruption and Equilibrium), 4) Confinement (including New confinement schemes), 5) Diagnostics, 6) High Energy Density Science (including Inertial Fusion Research with Laser, Heavy ion beam and Z pinch)

Joint Institute for Fusion Theory (JIFT)

Almost all of the activities in the three categories - workshops, personal exchanges, and joint computational projects were carried out during the past year, although more U.S. scientists are encouraged to visit Japan.

All four workshops were successfully held, in addition to the JIFT Steering Committee meeting. In the category of personal exchanges, two Visiting Professors and four Visiting Scientists made exchange visits. The JIFT joint computational projects were also active.

Fusion Technology Planning Committee

The JUPITER-II has been successfully completed its whole program extending over 6 years from 2001 to 2007. Its results will give a firm basis for the next project, in which the main subjects are settled as comprehensive understanding on overall performance of DEMO-grade blankets including tritium transport and heat transfer issues. Of the 28 planned cooperative items related to the JUPITER-II, 22 were completed in this fiscal year as follows: 1 committee meeting, 17 personnel exchanges, and 5 workshops/technical meetings.

Personal exchange programs are continued in 6 research fields, namely, superconducting magnets, low-activation structure materials, plasma-heating technology, blanket engineering, high-heat flux components, reactor design & others. Of the 14 planned cooperative items related to the general technology joint planning categories, 12 were completed as follows: 4 workshops/technical meetings and 8 personnel exchanges.

The 25th Executive Secretary Meeting (ESM) was held by a televideo communication on May 31, 2007 in Tokyo, Japan and in Germantown, US. It was noted that both sides have developed a significant and mutually valuable collaboration involving all technical elements of the fusion energy sciences program, and also discussed about bilateral programs, multi-lateral activities, and a safety monitoring activity from US to Japan in FY 2007.

General Secretary for US-Japan
Collaboration Planning Committee
Shigeru Sudo

STATISTICAL REVIEW OF FUY 2006 EXCHANGE PROGRAM (NIFS)

Grand Total

		US → J	J → US	Total
Proposed	Man	83	156	239
	Item	33	74	107
Performed	Man	80	114	194
	Item	30	56	86

Personnal Exchange Program

(Including Overall Planning)

		US → J	J → US	Total
Proposed	Man	2	7	9
	Item	1	3	4
Performed	Man	2	2	4
	Item	1	2	3

Fusion Technology

(1) Superconducting Magnets

		US → J	J → US	Total
Proposed	Man	0	5	5
	Item	0	1	1
Performed	Man	0	0	0
	Item	0	0	0

(2) Structural Materials

		US → J	J → US	Total
Proposed	Man	1	1	2
	Item	1	1	2
Performed	Man	1	1	2
	Item	1	1	2

(3) Plasma Heating Related Technologies

		US → J	J → US	Total
Proposed	Man	6	0	6
	Item	2	0	2
Performed	Man	6	0	6
	Item	2	0	2

(4) Blankets

		US → J	J → US	Total
Proposed	Man	0	0	0
	Item	0	0	0
Performed	Man	0	0	0
	Item	0	0	0

(5) In-Vessel/High Flux Materials and Components

		US → J	J → US	Total
Proposed	Man	1	6	7
	Item	1	2	3
Performed	Man	1	6	7
	Item	1	2	3

(6) Others

		US → J	J → US	Total
Proposed	Man	5	1	6
	Item	1	1	2
Performed	Man	5	0	5
	Item	1	0	1

Fusion Physics

(1) Planning

		US → J	J → US	Total
Proposed	Man	4	0	4
	Item	1	0	1
Performed	Man	4	0	4
	Item	1	0	1

(2) Plasma Core Phenomena

		US → J	J → US	Total
Proposed	Man	0	25	25
	Item	0	8	8
Performed	Man	0	19	19
	Item	0	6	6

(3) Plasma Edge Behavior and Control

		US → J	J → US	Total
Proposed	Man	8	6	14
	Item	3	6	9
Performed	Man	7	4	11
	Item	2	4	6

(4) Heating and Current Drive

		US → J	J → US	Total
Proposed	Man	6	3	9
	Item	2	3	5
Performed	Man	6	3	9
	Item	2	3	5

(5) New Approach and Diagnostics

		US → J	J → US	Total
Proposed	Man	21	39	60
	Item	9	20	29
Performed	Man	19	30	49
	Item	7	15	22

Joint Institute of Fusion Theory

		US → J	J → US	Total
Proposed	Man	13	23	36
	Item	8	10	18
Performed	Man	13	17	30
	Item	8	8	16

DOE/MEXT MATERIALS (ANNEX I , JUPITER PROGRAM)

		US → J	J → US	Total
Proposed	Man	16	40	56
	Item	4	19	23
Performed	Man	16	32	48
	Item	4	15	19

(Sudo, S.)