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 US-Japan Joint Activity is being continued actively.

NIFS 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: TITAN (Tritium, Irradiation and Thermofluid for America and Nippon) started in the fiscal year of 2007.

Fusion Physics Planning Committee (FPPC)

The Fusion Year (FuY) 2007 exchanges were as follows: ~50 exchanges are proposed for US to JA and about 66 for JA to US. But the number of exchanges actually completed is about 36-40 to each side. As in the past years, the biggest factors contributing to collaborative activities not being completed were scheduling problems and lack of funds. 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 21, 2008 between the DOE – Germantown offices and the NIFS Toki by a televideo communication. Participants were from Universities, NIFS, JAEA, and DOE to summarize the 2007 activities and formulate the 2008 activities. In 2007, the new category areas started: 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, one Visiting Professor and four Visiting Scientists made exchange visits. The JIFT joint computational projects were also active.

A JIFT program discussion meeting was held at NIFS on January17-18, 2008 in order to summarize the history of the JIFT activities and discuss its future prospects.

Fusion Technology Planning Committee

The TITAN program was preceded by JUPITER-II program (2000-2006), in which key technologies were investigated targeting on advanced blanket concepts. TITAN program extended its scope including consistency of the advanced blankets with first wall and tritium/heat recovery systems. Of the 31 planned cooperative items related to the TITAN, 27 were completed in this fiscal year as follows: 2 committee meetings, 20 personal 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 26th Executive Secretary Meeting (ESM) was held by a televideo communication on July 7, 2008 in Tokyo and Toki, 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 ITER and BA activities with related subjects .

General Secretary for US-Japan
Collaboration Planning Committee
Shigeru Sudo

STATISTICAL REVIEW OF FUY 2007 EXCHANGE PROGRAM (NIFS)

Grand Total

		US → J	J → US	Total
Proposed	Man	102	169	271
	Item	47	89	136
Performed	Man	87	129	216
	Item	40	65	105

Personnal Exchange Program

(Including Overall Planning)

		US → J	J → US	Total
Proposed	Man	4	16	20
	Item	2	2	4
Performed	Man	4	16	20
	Item	2	2	4

Fusion Technology

(1) Superconducting Magnets

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

(3) Plasma Heating Related Technologies

		US → J	J → US	Total
Proposed	Man	3	8	11
	Item	3	3	6
Performed	Man	3	8	11
	Item	3	3	6

(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	5	3	8
	Item	1	1	2
Performed	Man	5	3	8
	Item	1	1	2

(6) Others

		US → J	J → US	Total
Proposed	Man	0	13	13
	Item	0	4	4
Performed	Man	0	8	8
	Item	0	3	3

Fusion Physics

(1) Planning

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

(2) Steady-state Operation

		US → J	J → US	Total
Proposed	Man	6	12	18
	Item	2	8	10
Performed	Man	5	8	13
	Item	1	4	5

(3) MHD and High Beta

		US → J	J → US	Total
Proposed	Man	16	4	20
	Item	4	4	8
Performed	Man	16	3	19
	Item	4	3	7

(4)Confinement

		US → J	J → US	Total
Proposed	Man	0	3	3
	Item	0	3	3
Performed	Man	0	2	2
	Item	0	2	2

(5)Diagnostics

		US → J	J → US	Total
Proposed	Man	4	19	23
	Item	4	11	15
Performed	Man	4	13	17
	Item	4	9	13

(5)High Energy of Fusion Science

		US → J	J → US	Total
Proposed	Man	19	25	44
	Item	6	16	22
Performed	Man	7	11	18
	Item	2	6	8

Joint Institute of Fusion Theory

		US → J	J → US	Total
Proposed	Man	25	20	45
	Item	13	13	26
Performed	Man	25	14	39
	Item	13	11	24

DOE/MEXT MATERIALS (ANNEX Ⅰ, TITAN Project)

		US → J	J → US	Total
Proposed	Man	15	42	57
	Item	10	21	31
Performed	Man	14	39	53
	Item	9	18	27

(Sudo, S.)