1. US–Japan (Universities) Fusion Cooperation Program

The 33rd U.S.-JAPAN Coordinating Committee for Fusion Energy (CCFE) meeting was held on March 4, 2013, one month earlier than the previous year, via televideo conference system. The representatives from the MEXT, the DOE, Universities and Research Institutes both from Japan and U.S. participated in the meeting. At the meeting, current research status of both countries were reported together with presenting bilateral technical highlights on collaboration. The 2012 cooperative activities were reviewed, and the FY 2013-2014 proposal was approved. 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 the bilateral programs and multi-lateral activities. Thus, the both sides agreed the usefulness and necessity of the continuation of the Joint Activity.

NIFS as a member of "Inter-University Research Institute, National Institutes of Natural Sciences" conducted successfully the LHD experiments as well as theory, simulation and fusion technology together with collaborators from universities, JAEA and the international institutions. Many US researchers participated in the LHD experiments, and also in the fields of theory, simulation and technology both at NIFS and universities in Japan.

One of the main activities of the Japanese university researchers participating in the US-Japan collaboration is the research in the major experimental facilities in U.S. The US-Japan joint project: TITAN (Tritium, Irradiation and Thermofluid for America and Nippon) project has finished in 2012, and a new project: PHENIX covering studies on tritium permeation and barrier, tritium retention, activation of tungsten will start form 2013.

Fusion Physics Planning Committee (FPPC)

In the area of fusion physics, 2 committees, 7 workshops, and 29 personal exchanges were completed. The 9 proposals were not conducted partly due to the lack of funding. 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 via e-mail communication during February 5 - March 1, 2013. The participants were from NIFS, JAEA, and DOE to summarize the 2012 activities and formulate the 2013 activities. As a result, the proposed plan of 2 committees, 10 workshops, and 29 personal exchanges was agreed.

Joint Institute for Fusion Theory (JIFT)

Almost all of the activities in the two categories – workshops and personal exchanges were carried out during the past year.

In addition to the JIFT Steering Committee meeting, four workshops were successfully held. In the category of personal exchanges, two Visiting Professors and seven Visiting Scientists made exchange visits, while one of planned exchange visits was delayed due to personal reason. The JIFT Steering Committee reviewed the status of JIFT activities for 2012-2013 and made the recommendation plans for 2013-2014 on November 2, 2012. The information of the JIFT program is released at both of the US and Japanese JIFT web sites.

Fusion Technology Planning Committee (FTPC)

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 9 planned cooperative items related to the general technology joint planning categories, 7 were completed as follows: 3 workshops/technical meetings and 4 personnel exchanges.

The 6-year TITAN project has been completed in this fiscal year. The results will give a firm basis for comprehensive understanding on overall performance of DEMO-grade systems including tritium transport, thermofluid and irradiation synergism. The summary report of the TITAN project based on the achievements will be issued in 2013.

General Secretary for US-Japan
Collaboration Planning Committee
Shigeru Sudo

Grand Total

		US → J	J → US	Total
Proposed	Man	61	129	190
	Item	35	60	95
Performed	Man	55	81	136
	Item	29	40	69

Personnal Exchange Program

(Including Overall Planning)

		US → J	J → US	Total
Proposed	Man	0	2	2
	Item	1	2	3
Performed	Man	0	2	2
	Item	0	2	2

Fusion Technology

(1) Superconducting Magnets

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

(2) Structural Materials

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

(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	2	6	8
	Item	2	2	4
Performed	Man	0	6	6
	Item	0	2	2

(6) Others

		US → J	J → US	Total
Proposed	Man	5	0	5
	Item	1	0	1
Performed	Man	4	0	4
	Item	1	0	1

Fusion Physics

(1) Planning

		US → J	J → US	Total
Proposed	Man	4	2	6
	Item	1	2	3
Performed	Man	4	0	4
	Item	1	0	1

(2) Steady-state Operation

		US → J	J → US	Total
Proposed	Man	5	3	8
	Item	1	3	4
Performed	Man	5	3	8
	Item	1	3	4

(3) MHD and High Beta

		US → J	J → US	Total
Proposed	Man	1	13	14
	Item	1	5	6
Performed	Man	1	7	8
	Item	1	3	4

(4)Confinement

		US → J	J → US	Total
Proposed	Man	0	7	7
	Item	0	3	3
Performed	Man	0	1	1
	Item	0	1	1

(5)Diagnostics

		US → J	J → US	Total
Proposed	Man	8	15	23
	Item	8	7	15
Performed	Man	6	9	15
	Item	6	5	11

(6)High Energy of Fusion Science

		US → J	J → US	Total
Proposed	Man	7	29	36
	Item	3	12	15
Performed	Man	6	7	13
	Item	2	3	5

Joint Institute of Fusion Theory

		US → J	J → US	Total
Proposed	Man	16	16	32
	Item	8	8	16
Performed	Man	16	14	30
	Item	8	6	14

DOE/MEXT MATERIALS (ANNEX Ⅰ, TITAN Project)

		US → J	J → US	Total
Proposed	Man	6	35	41
	Item	6	15	21
Performed	Man	6	31	37
	Item	6	14	20