

1. US–Japan (Universities) Fusion Cooperation Program

“Implementing Arrangement Between the MEXT of Japan and the DOE of the United States of America concerning Cooperation in Research and Development in Energy and Related Fields” was concluded on April 30, 2013, after the Japan-U.S. Energy Research and Development Agreement was expired in 2005. The 34th U.S.-JAPAN Coordinating Committee for Fusion Energy (CCFE) meeting was held on March 12 2014 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 collaborations. The 2013 cooperative activities were reviewed, and the FY 2014-2015 proposal was approved. It was noted that both sides have developed significant and mutually valuable collaborations involving all technical elements of the fusion energy sciences program. 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.

Fusion Physics Planning Committee (FPPC)

In the area of fusion physics, 1 committee, 9 workshops, and 18 personal exchanges were completed. The 7 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 the both sides. The annual meeting of the FPPC was held via e-mail during January 31 - February 20, 2014. The participants were from NIFS, JAEA, and DOE to summarize the 2013 activities and formulate the 2014 activities. As a result, the proposed plan of 2 committees, 6 workshops, and 23 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, one Visiting Professor and ten Visiting Scientists made exchange visits. The JIFT Steering Committee reviewed the status of JIFT activities for 2013-2014 and made the recommendation plans for 2014-2015 on November 20, 2013. The JIFT discussion meeting was held at TOKI on September 12, 2013, in the Simulation Science Symposium. 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 16 planned cooperative items related to the general technology joint planning categories, 12 were completed as follows: 3 workshops/technical meetings and 9 participations. Four participations were deferred. For the 2014 plan, 4 workshops/technical meetings and 12 participations were agreed.

US-Japan joint projects: TITAN and PHENIX

The summary report of the 6-years TITAN project has been published in 2013, and the new 6-years PHENIX (pfc evaluation by tritium Plasma, HEat and Neutron Irradiation eXperiments for fusion energy systems) project (2013-2018) has been successfully completed in its first year. The 17 personnel exchanges were completed with 11 from Japan to the U.S. and 6 from the U.S. to Japan. Two workshops were held in the U.S., and one was held in Japan. The Second Steering Committee Meeting was held in January 2014. The experimental and theoretical studies being planned in the following years will address key issues for gas-cooled divertor system of common interest to Japan and U.S. PHENIX will provide important and essential elements toward realizing attractive fusion energy options.

General Secretary for US-Japan
Collaboration Planning Committee
Shigeru Sudo

STATISTICAL REVIEW OF FUY 2012 EXCHANGE PROGRAM (NIFS)

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