

## §59. Planning of the All-Japan ST Research Program

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Based on the recommendation of the Fusion Research Working Group and the conclusions of the “Kyushu University Plasma Boundary Dynamics Experimental Device Review Committee”, spherical tokamak (ST) research in Japan was reorganized in 2005 as All-Japan ST Research Program supported by NIFS Bi-Directional Collaboration, and a new ST device QUEST was constructed at Kyushu University to fulfill one of the missions of this program, steady state operation. The formal establishment of the NIFS Bi-Directional Collaboration Research Promotion Expert Subcommittee for ST Research (ST Subcommittee) in November 2006 marks a great progress. This subcommittee will establish the research plan of All-Japan ST Research Program and coordinate its activities.

All-Japan ST Research Program promotes creative and innovative research at universities and other institutions. To maintain international competitiveness and to make significant contributions internationally, it is crucial to integrate all resources, including experimental research using existing devices in addition to the new ST, as well as theoretical and computational research. The purpose of this collaborative research is to plan and support the activities of All-Japan ST Research Program, making maximum utilization of NIFS Bi-Directional Collaboration, actively involving various ST research groups.

Two (Second and Third) meetings of the ST Subcommittee were held during FY2007. The Second Meeting was held at the University of Tokyo on August 21, directly following the IEEJ Plasma Workshop and IEEJ ST Research Expert Committee Meeting held on August 20 and 21. Strategy of Japanese ST research, priorities of various research elements, roles of different research groups, utilization of experimental devices, and collaboration among different groups were discussed at this meeting. The Third Meeting was held at NIFS on January 31, directly before the NIFS Collaboration Workshop on Prospects and Issues of the ST as Fusion Reactor held on January 31 and February 1. Issues relating to the establishment of an effective system of collaborative research within Japan and the role of Japan in the IEA Implementing Agreement for Co-operation on Spherical Tori (IEA IA on ST), newly established in February 2007, were discussed at this meeting.

The Thirteenth International Workshop on ST was held at Kyushu University during the period October 10 to 12. Activities of All-Japan ST Research Program were reported in an invited talk entitled “Nation-wide collaborative ST research program in Japan” given by Y. Takase. On the

first day of the workshop, the First Executive Committee Meeting of the IEA IA on ST was held. Participants from Japan were Prof. O. Motojima and Y. Takase (Executive Committee members) and Prof. K.N. Sato (Secretariat).

The ST Subcommittee makes plans for activities in the entire field of ST research, coordinates collaborative efforts among different research groups, discusses any issues related to ST research, and reports to NIFS Bi-Directional Collaboration Committee as necessary. In addition to discussing issues related to All-Japan ST Research Program as listed above, a web home page of All-Japan ST Research Program (Fig. 1) was established within the NIFS Collaboration web site. Activities of All-Japan ST Research Program will be published on this home page.

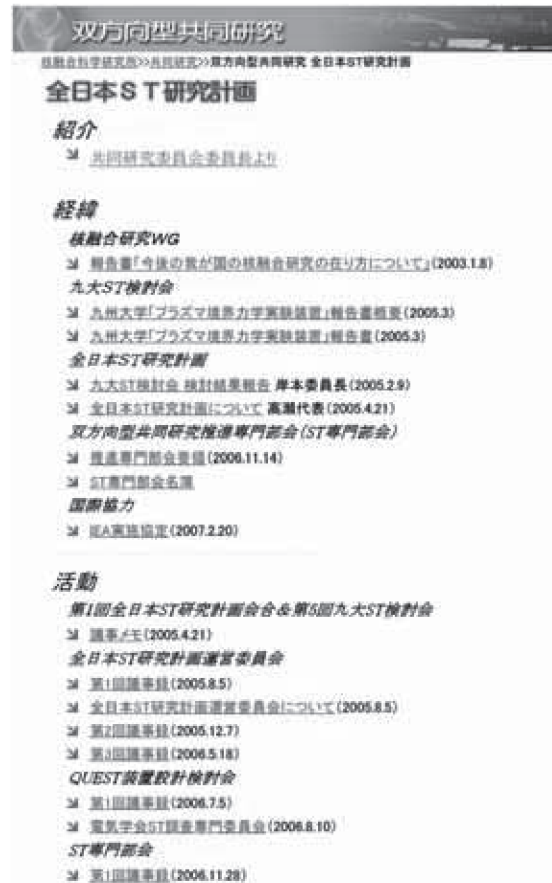


Fig. 1 All-Japan ST Research Program home page (<http://www.nifs.ac.jp/kenkyo/icr/st.html>)

The establishment of IEA IA on ST has created a framework for multilateral collaboration. It is important to define clearly the role of Japanese ST research in the world, and to come up with a concrete strategy for Japanese ST research. As the first collaborative project under IEA IA on ST, plasma start-up experiments are planned as trilateral (US-UK-JA) collaboration. Japan leads the world with this research, and Japan is expected to make a large contribution. It is also important to strengthen the existing bilateral collaboration with the US. In Japan, the construction of QUEST was completed, and experiments will begin in 2008. A discussion to establish a concrete research plan has started, taking into account the plans of various groups and collaborations among different groups.