IFERC Newsletter

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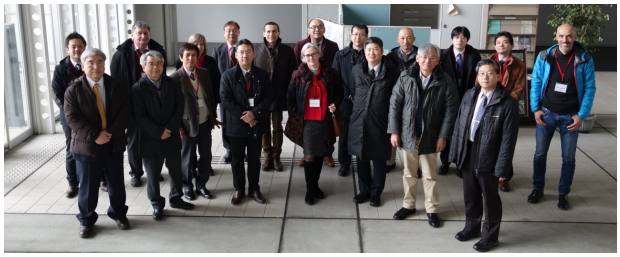
International Fusion Energy Research Centre, Rokkasho, Aomori 039-3212, Japan

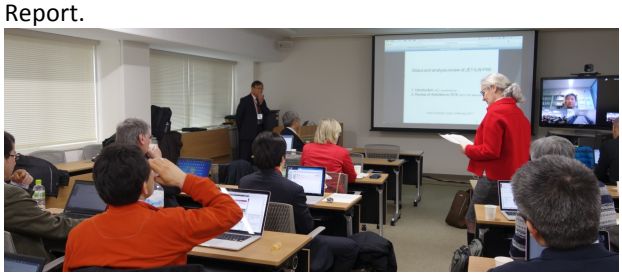
DEMO Joint meeting

The 7th DEMO Joint Technical Coordination Meeting (JTCM-7)



1. General

The 7th Joint Technical Coordinating Meeting between DEMO Design and R&D (JTCM-7) was held on 9th February 2017 in the Kyoto University Uji Campus. The participants were 19 from EU (14 remote) and 24 from Japan (2 remote). This meeting focused on the Joint European Torus (JET) ITER-like-Wall (ILW) tile and dust analysis and the contents of the DEMO R&D Final Report.



2. Overview

At the beginning, Prof. Noriyoshi Nakajima, IFERC Project Leader, gave an overview of the IFERC project. The extension of IFERC project up to December 2019 was approved in BA SC-17 on 11 Dec. 2015, and an update of the IFERC project plan was approved in BA SC-18 on 22 Apr. 2016. It was proposed that the following documents should be submitted:

- The final report of safety research on DEMO Design Activity (DDA),
- The 2nd intermediate report of DDA,
- The final report of CSC activity, and
- The final report of DEMO R&D activities.

The table of contents was agreed by the PC members in PC-19 on 28-29 Sep. 2016. The above reports will be used for the explanation on the outcomes of the IFERC project and on the necessity of Post BA activities (BA phase II). The contents of the 2nd intermediate report of DEMO Design Activity have already been discussed in DDA-TCM-8 (8th Meeting of DEMO Design Activity – Technical Coordinating Meeting). DEMO related activities in the extended period (2017/6 – 2019/12) will be implemented mostly as voluntary contributions. DEMO R&D activities in the extended period will be implemented under the DDA PA (Procurement Arrangement). TCM and TM (Task Meeting) will be held with participants from both DDA and DEMO R&D.

3. EU-JA collaboration on SiC/SiC composites and JET tile and dust analysis

Dr. Nobuyuki Asakura (QST), Prof. Suguru Masuzaki (NIFS) and Dr. Kanetsugu Isobe (QST) summarized the recent analyses of JET tiles and dust. JET in UK implemented tungsten coated material (and bulk W) in the divertor, and carried out plasma experiments of ITER Like Wall (ILW). Japan and EU decided to carry out analysis of the tile surface and dust produced by the 1st campaign of the ILW experiment as part of the DEMO R&D activity.

The DEMO R&D facility is a unique laboratory in the world, where tritium, beryllium and activated materials can be handled. Furthermore, important analytical devices, such as focused ion beam (FIB), transmission electron microscope (TEM) and thermal desorption spectroscopy (TDS), are installed in the facility. From 2013, collaborative studies have been carried out with Japanese universities at IFERC: 3 collaborative studies are implemented with 8 universities in fiscal year 2016: NIFS, U. Toyama, Shizuoka U., Osaka U., Shimane U., Kyushu U., Ibaraki U., Kindai U. The research topics include:

- Atomic composition and hydrogen isotope retention of dust particles from JET,
- Investigation of hydrogen isotope profiles in the plasma facing components from the JET-ILW, and
- Microstructure of surfaces on the JET-ILW tiles and its impact on hydrogen isotope retention properties

and experienced specialists of JET visited in FY2015 and 2016.

Divertor tile samples and dust of JET ILW 1st campaign have been analyzed in IFERC in Rokkasho, featuring:

-Detailed microstructure analysis using TEM and FIB,
-Tritium retention analysis using the IP technique and liquid scintillator counting, and
-Chemical state analysis using XPS (X-ray Photoelectron Spectroscopy).

(Michiya Shimada)