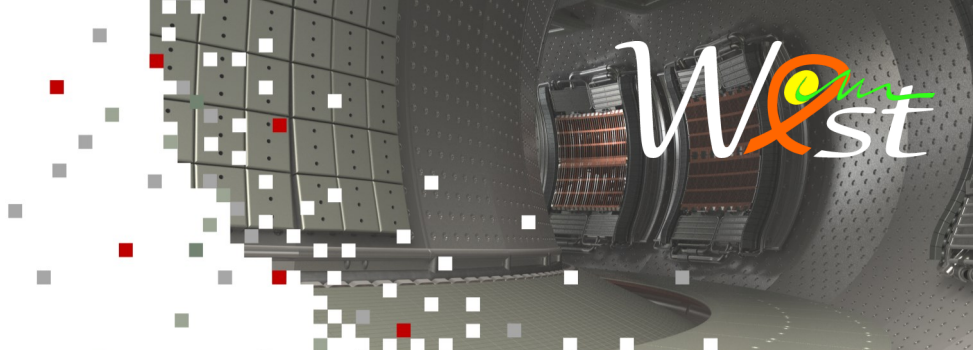




Institute for Magnetic Fusion Research



WEST Newsletter N°10 - August 2015

WEST exposed at the 15th International Conference on "Plasma-Facing Materials and Components for fusion applications"

The 15th international conference on "Plasma-Facing Materials and Components (PFMC) for fusion applications" took place from May 18th to May 22nd, 2015 in Aix-en-Provence, France, organized by CEA/IRFM.



The 15th International Conference on "Plasma Facing Materials and Components for fusion applications" was organized by CEA/IRFM and took place in the Convention Center of Aix en Provence, France, in May 2015.

B. Bigot, IO DG

The event gathered nearly 300 experts from Europe but also from all other ITER parties (China, India, Japan, Korea, Russian Federation, and USA) as well as from Canada and Australia. As was underlined by the Director General (DG) of ITER Organization (IO), Bernard Bigot, as he opened the conference, materials are critical for a fusion reactor. The IO DG also mentioned that the latest results in the field of plasma wall interactions contribute to strengthening the ITER physics basis and design and support the preparation for successful ITER operation. This corresponds to the spirit in which WEST will be operated, in order to support the ITER divertor procurement and operation.

WEST was indeed well represented during the conference, with an invited presentation giving an overview of the WEST project status with a focus on Plasma Facing Components and related diagnostics, as well as 7 papers presented in the poster sessions. Participants were also given the opportunity to visit WEST during the conference, and to take a look at the first prototypes of WEST components already manufactured.

The conference also included a tutorial for students as well as a much appreciated conference dinner: both were largely attended. The next edition of the conference will take place in 2017 in Dusseldorf, organized by our German colleagues from FZJ.

The Institute of Atomic Physics (IFA), Romania joins the WEST partners

In April 2015, IFA has signed a Letter Of Intent to join the collaboration on the WEST project.

Under the general cooperation agreement between CEA and IFA renewed at Bucharest on April 1st, 2015, IFA intends to become a partner of WEST and a member of the WEST Governing Board, which coordinates the implementation of the WEST programme. The joint efforts of IRFM and IFA focus on issues related to material development, characterization and testing under extreme environment. This includes in particular the development of innovative materials for fusion plasma facing components, the implementation of material related diagnostics of common interest.



INSTITUTUL DE FIZICĂ ATOMICĂ,
Bucharest-Măgurele, ROMANIA (artistic view)

Implementing the WEST program into the EUROfusion framework

Since 2014, WEST is part of the European fusion facilities exploited in the framework of the EUROfusion consortium. With WEST first plasma planned in 2016, it is now time to prepare the practical implementation of the WEST program within the EUROfusion framework. For this purpose, a meeting was held in Cadarache on June 18, 2015.

The meeting gathered representatives of the ITER physics Department from the EUROfusion Programme Management Unit (PMU), the EUROfusion project leader in charge of WEST (Work Package "Plasma Facing Components", or WP-PFC) and CEA experts involved in WEST operation and scientific program management.

The objective of the meeting was to set up an efficient implementation scheme for exploiting WEST as a European fusion facility from 2016 on. An integrated procedure was agreed, combining the international call for proposals planned for WEST in fall 2015 and the WP-PFC/EUROfusion PMU constrains. EUROfusion support will be available for the European fusion laboratories wishing to participate to WEST scientific campaigns for selected experiments, such as studies on the heat flux deposition pattern (SOL width), test of ITER grade Plasma Facing Components under high heat loads, or the characterization of tungsten sources contaminating the plasma. A dedicated EUROfusion Science meeting will be organized on November 25th, 2015, in order for scientists from the European fusion laboratories to get an overview of the opportunities for participating in the WEST campaigns.



EUROfusion, the 'European Consortium for the Development of Fusion Energy', manages and funds European fusion research activities on behalf of Euratom.

For further questions, do not hesitate to contact: EUROfusion WP-PFC leader: S. Brezinsek (s.brezinsek@fz-juelich.de) - EUROfusion PMU WP-PFC Responsible Officer: ML Mayoral (Marie-Line.Mayoral@euro-fusion.org) - WEST TF leaders: E. Tsitrone (emmanuelle.tsitrone@cea.fr), C. Bourdelle (clarisse.bourdelle@cea.fr)

Completion of diagnostics integration in ports

The final design review of the diagnostics integration in ports took place in May 2015.

To ensure the mission of WEST, a set of new diagnostics mainly devoted to plasma facing components monitoring has been designed and will be installed on the tokamak. The new configuration with the divertor coils inside the vacuum vessel impacts the line of sights of the existing diagnostics. A total of 60 diagnostics/systems for plasma and PFC monitoring including an extensive infrared thermography system, visible spectroscopy, bolometers, etc. have been integrated in the upper and equatorial ports. The challenge was to ensure a proper integration of new diagnostics in the reduced available volume while minimizing the modification of existing diagnostics. This work resulted in the design of 2 new flanges (cf. figure) in which as much as 9 diagnostics were integrated. The integration ensures that each system can be removed without affecting the others. In addition, some ports are designed to be compatible with several diagnostics that would be plugged-in depending on the experimental program. A few spaces have also been reserved for future installations of new diagnostics.

