

Seminar on Present State and Prospect of Fusion/Tritium Related Activities

Organized by
Hydrogen Isotope Research Center, University of Toyama

Held at
Multi-purpose Hall, Faculty of Science, University of Toyama
Gofuku 3190, Toyama 930-8555, Japan

March 15th (Monday), 2010

Scope:

To safely operate a future fusion reactor as well as ITER, it is indispensable to establish the comprehensive techniques for perfect confinement and efficient circulation of a huge amount of tritium. Also it is greatly important to establish a self-consistent tritium supply system in the fusion reactor by applying a reasonable tritium breeding material. Tritium disappears with nuclear reaction in the reactor core and permeation through the reactor materials as well as disintegration of tritium, whereas it is efficiently bred in the blanket during operation of a fusion reactor. It is fed as a fuel after processing such as extraction from the breeding materials and purification/separation of tritium-containing gas. A lack of tritium supply must be avoided to continue operation of the fusion system. Namely, it is required that a series of subsystems from supply to storage are effectively combined and they are successively operated as one machine. The present seminar on “Present State and Prospect of Fusion/Tritium Related Activities” will play an important role for making a guide line and a road map of tritium studies toward the establishment of the future fusion reactor.

Topics:

- (1) Tritium-material interactions such as adsorption, dissolution, diffusion and permeation of tritium in materials.
- (2) Control of tritium circulation in a fusion reactor: storage, supply, recovery, purification, separation, breeding, and measurement.
- (3) Chemical and physical behavior of tritium in materials.
- (4) Processing of highly tritiated water and the metallic and organic materials contaminated with tritium.
- (5) International cooperation/collaboration for the basic studies of tritium and growing up highly-skilled people.

(March 15, 2010: Univ. of Toyama)

Program of the Tritium Seminar

(Presentation: 45 min, discussion: 15 min)

13:30 Opening

13:35 (Chairman: M. Matsuyama)

Presenter: Dr. Alexander Perevezentsev from ITER Organization

Title: Atmosphere Detritiation as Safety Tritium Confinement System at ITER

14:35 (Chairman: Y. Hatano)

Presenter: Dr. Phil Sharpe from STAR Facility of INL

Title: Bench-scale Tritium Experiments and Extrapolation to Fusion Energy Systems

15:35 – 15:45 Coffee Break

15:45 (Chairman: T. Abe)

Presenter: Dr. Takumi Hayashi from Tritium Tech. Gr. of JAEA

Title: Recent Activities on Fusion Tritium Technologies in JAEA

16:45(Chairman: P. Sharpe)

Presenter: Prof. Yuji Hatano from HRC of Univ. of Toyama

Title: Tritium Study in Hydrogen Isotope Research Center with Reconstructed Facility
and New Collaboration Program

17:45 Closing Remark

19:00 Welcome Party