News Letter No.15,
December 8, 2010

ニュースレター第 15 号をお届けします。
トリチウム国際会議報告（その２）です。

国際会議開催報告－II

第 9 回「トリチウムの科学と技術：Tritium Science and Technology」国際会議
9th International Conference on Tritium Science and Technology (TRITIUM2010)
平成 22 年 10 月 24-29 日　於：奈良県新公会堂

ニュースレターNo.14（平成 22 年 11 月 8 日発行）で、標記国際会議が、核融合科学研究所主催、本領域共催のもと成功裏に終了いたしましたことはご報告いたしておりますが、本ニュースレターではその続編といたしまして、本領域からの発表状況をご報告いたします。

本領域からの発表は、下記リストに示しましたように、西川先生の基調講演(総数：5 件)、寺井先生の招待講演 a（総数：8 件）および山西様の招待講演 b（総数：12 件)、5 件の一般口頭発表（総数：29 件）そして 37 件のポスター発表（総数：215 件）の形で成果発表を行っていただきました。

いずれの発表も、本領域の最新の成果をまとめたものであり、全体の発表数に占める割合が、約 1/7 となっており、日本はもとより、世界をリードする役割を担っていることが明白になっています。本領域に関わられている皆様の総力を結集していただいた結果であり、領域代表として、厚く御礼申し上げます。

発表内容の詳細は同会議の論文集として Fusion Science and Technology 誌の特別号一として出版されることになっていますが、その概要だけでも、お互いに周知しておく方が良いと考えまして､ここに各発表の著書にそれぞれその内容を一枚にまとめていただきましたので、本ニュースレターおよび、本領域のホームページで公開させていただくことなりました。

お役立て頂ければ幸いです。

会議の内容、全体の研究動向等につきましては、改めてニュースレターあるいは、会議報告として専門誌にてご紹介する予定です。

領域代表：田辺哲朗

基調講演	**Tritium Balance in a DT Fusion Reactor** **Masabumi Nishikawa** (Kyushu University)
招待講演　a	**Fusion-related Tritium Research Activities in Japanese Universities** **T. Terai** (University of Tokyo)
招待講演　b	**Results for Large Amount of Tritium Handling Technology in JAEA for 25 years** **T. Yamanishi** (JAEA), T. Hayashi, Y. Kawamura, H. Nakamura, Y. Iwai, K. Isobe, T. Suzuki, and M. Yamada
口頭発表 (5 件)	**Near-infrared Spectroscopy of Tritiated Water** **K. Kobayashi** (University of Toyama), T. Enokida, D. Iio, M. Hara, and Y. Hatano
	Tritium Measurement in High Gamma-ray Radiation Fields by Using an Imaging Plate **H. Ohuchi** (Tohoku University), Y. Kondo, Y. Asakura, and T. Kawano
	Thermal Growth of Hydrogen Traps in Ion-irradiated W **I. Takagi** (Kyoto University), K. Yamamichi, R. Imade, T. Sasaki, H. Tsuchida, K. Moritani, H. Moriyama
	Behavior of Hydrogen Isotopes Loaded into Neutron-irradiated Tungsten by TPE plasma Exposure **T. Oda** (The University of Tokyo), M. Shimada, K. Zhang, P. Calderoni, Y. Oya, M. Sokolov, R. Kolasinski, J. P. Sharpe, and Y. Hatano
	Hydrogen-tritium Isotope Separation by CECE Process with a Randomly Packed LPCE Column **T. Sugiyama** (Nagoya University), E. Suzuki, M. Tanaka and I. Yamamoto

ポスター発表

Biology （1 件）	**Tritium concentration in the environment and genomic DNA** **T. Shibata** (Kyoto University), K. Noborio, Y. Yamamoto, and S. Konishi
Contamination & Waste (3 件)	**Tritium transfer in porous concrete materials coated with hydrophobic paints** Y. Edao, **S. Fukada** (Kyushu University), K. Sato, T. Takeishi, K. Katayama,Y. Hatano, A. Taguch, K. Kobayshi, T. Hayashi, T. Yamanishi
	HTO Contamination on Polymeric Materials **Y. Iwai** (Japan Atomic Energy Agency), K. Kobayashi, and T. Yamanishi
	Behavior of tritiated water on concrete materials. **K. Kobayashi** (Japan Atomic Energy Agency), T. Hayashi, and T. Yamanishi
Detritiation & Isotope separation (3 件)	**Detritiation behavior of HTO in a epoxy paint.** **K. Kobayashi** (Japan Atomic Energy), H. Nakamura, T. Hayashi and T. Yamanishi
	Demonstration of tritium extraction from tritiated methane in helium by utilizing plasma decomposition **K. Katayama** (Kyushu University), S. Fukada, M. Nishikawa
	Development of high efficiency electrode for highly tritiated water processing **K. Isobe** (Japan Atomic Energy Agency), and T. Yamanishi
Concept & Design (2 件)	**Tritium Fuel System Assessment on Economics and CO_2 Emissions in DT Fusion Reactors** **K. Yamazaki** (Nagoya University), and T. Oishi
	Optimization of Tritium Fueling Scenario in DT Fusion Reactors **T. Oishi** (Nagoya University), K. Yamazaki, and Y. Hori

Interaction with Materials (19 件)	**Water vapor permeability of polypropylene** **Y. Togashi (University of Toyama)** and M. Hara
	Tritium Adsorption on Tungsten with Nano-Morphology M. Yajima, **J. Shi** (U. of Toyama), Y. Hatano, T. Saeki, S. Kajita, and N. Ohno
	A study on carbon and hydrogen transportation to exhaust systems and sticking behavior **S. Kasahara** (Kyushu U.), K. Katayama, T. Fujiki, S. Ishikawa, S. Fukada, M. Nishikawa
	Phosphate/Oxide Multi-Layer Coating as Tritium Permeation Barrier for Ferritic Steel **K. Zhang** (University of Toyama), and Y. Hatano
	Behavior of Tritium in Oxide Film of Stainless Steel **Y. Ozeki** (U. of Toyama), Y. Hatano, Y. Torikai, H. Taniguchi and M. Matsuyama
	Molecular dynamics simulations on behavior of hydrogen isotopes interacting with vacancy-type defect clusters in bcc-Fe **J. Maisonneuve** (The University of Tokyo), T. Oda, and S. Tanaka
	Hydrogen Permeation Measurement in the Spherical Tokamak QUEST and its Numerical Modeling **S. K. Sharma** (Kyushu University), H. Zushi, I. Takagi, Y. Hisano, T. Shikama, S. Morita, T. Tanabe, N.Yoshida, M. Sakamoto, Y. Higashizono, K. Hanada, M. Hasegawa, O. Mitrai, K.Nakamura, H. Idei, K. N. Sato, S. Kawasaki, H. Nakashima, A. Higashijima, Y.Nakashima, N. Nishino, Y. Hatano, A. Sagara, Y. Nakamura, N. Ashikawa, T. Maekawa ,Y. Kishimoto, Y. Takase and QUEST Group
	Hydrogen Trapping in Stainless Steel Irradiated by H and He Ions **I. Takagi** (Kyoto University), Y. Ueyama, T. Komura, M. Akiyoshi, T. Sasaki, K. Moritani, H. Moriyama
	Possibility of metal coatings on F82H as the tritium permeation reduction barrier **H. Nakamura** (Japan Atomic Energy Agency) and T. Yamanishi
	Characteristics of Hydrogen Traps in Ion-irradiated F82H Steel T. Komura, **I. Takagi** (Kyoto U.), M. Akiyoshi, T. Sasaki, K. Moritani, H. Moriyama
	Deuterium Permeation Mechanism through Erbium Oxide Coating for Tritium Permeation Barrier **T. Chikada** (U. of Tokyo), A. Suzuki, C. Adelhelm, H. Maier, T. Terai, and T. Muroga
	Behavior of tritium near surface region of metals exposed to tritium plasma **T. Otsuka** (Kyushu University), M. Shimada, T. Tanabe and J. P. Sharpe
	Deuterium retention in damaged tungsten **Y. Ueda** (Osaka University), K. Tsukatani, K. Tanimoto, H. T. Lee, Y. Ohtsuka, M. Taniguchi, T. Inoue,K. Sakamoto, I. Takagi, and N. Yoshida
	Tritium distribution on first wall carbon tiles in JT-60U **M. Yoshida** (Kyushu University), T. Tanabe, K. Sugiyama, T. Hayashi, T. Nakano, J. Yagyu, Y. Miyo, K. Masaki and K. Itami
	Measurements of carbon dust properties in experiment and post-campaign sampling　on JT-60U Tokamak **N. Asakura**（JAEA）, T. Hayashi, N. Ashikawa, T. Hatae, T. Nakano
	Application of tritium tracer technique for determination of hydrogen diffusion and permeation coefficients near room temperature **T. Ikeda** (Kyushu University), T. Otsuka, and T. Tanabe
	Quasi-resonant electron capture at very low energies involving hydrogen isotopes I.Yu.Tolstikhina, **D. Kato** (National Institute for Fusion Science), and V.P. Shevelko
	Modeling of Impurity Transport in Edge Plasmas and Tritium Codeposition on Plasma Facing Walls in ITER M. Bando, K. Inai, and **K. Ohya** (The University of Tokushima)
	Dust Dynamics and Tritium Retention in SOL/Divertor Plasma of ITER **Y. Tomita** (NIFS), G. Kawamura, N. Ashikawa, Y. Tanaka

Analysis (3 件)	**Measurements of Tritium Concentration in Solid and Liquid by X-ray Detection with Imaging Plates** **Y. Hatano** (University of Toyama)
	Application of Tritium Monitor of BIXS Use to Hot Environment **Y. Kawamura** (Japan Atomic Energy Agency), W. Shu, M. Matsuyama and T. Yamanishi
	Tritium Monitoring for Liquid Lithium by Permeation through Iron Wall **J. Yagi** (The University of Tokyo), A. Suzuki, and T. Terai
Blanket & Breeder Materilas (6 件)	**Hydrogen Isotopes Recovery from Liquid Lithium under Dynamic Conditions** **K. Katekari** (Kyushu University), Y. Hatachi, Y. Edao and S. Fukada
	Permeation behavior of two-component hydrogen isotopes in lithium-lead eutectic alloy **Y. Edao** (Kyushu University), H. Noguchi, H. Okitsu, and S. Fukada
	Effect of Water Formation Reaction on Tritium Release Behavior from Li_4SiO_4 **H. Yamasaki** (Kyushu University), M. Nishikawa, T. Koyama, T. Hanada, T. Kanazawa, S. Fukada
	Study on tritium release behavior from Li_2ZrO_3 **T. Kanazawa** (Kyushu University), M.Nishikawa, T.Hanada, N.Yamashita, H.Yamasaki, S.Fukada
	Crushing Strength Test of $Li_{2+x}TiO_{3+y}$ for advanced Tritium Breeder materials of ITER-TBM **K. Mukai** (The University of Tokyo), K. Sasaki, T. Hashimoto, T.Hoshino, A.Suzuki, T. Terai
	Experimental study on helium gas flow through pebble bed of ceramic tritium breeder in a test blanket module **A. Yoshikawa** (JAEA), Y. Seki, T. Hirose, H. Tanigawa, D. Tsuru, K. Yokoyama, K. Ezato, S. Suzuki, M. Enoeda and S. Fukada