

Poster Session 2

Date / Time : Tuesday, April 23 / 15:50-18:00

Place : 2F, Room C (Grand Ballroom C)

P2_01 Rigorous Tritium Wet Scrubber Column Modeling and Design

Anthony Busigin
NITEK USA, Inc., USA

P2_02 Zr₂Fe Modification for Tritium Absorption

Yong Yang
China Academy of Engineering Physics, China

P2_03 Preparation and Characterization of Super-Hydrophobic Pt-Based Catalysts for H/D Isotope Separation between Hydrogen and Water

Jiamao Li*, Chao Chen, Xiulong Xia, Yu Gong, Heyi Wang, Shuming Peng
China Academy of Engineering Physics, China

P2_04 Mass Transfer Performance Test of Structured Packings for Tritiated Water Distillation Detritiation

Chao Chen*, Jingwei Hou, Heyi Wang, Team of DT Fuel Cycle
China Academy of Engineering Physics, China

P2_05 Effect of Ultraviolet Light on Hydrogen Exchange Reaction between Hydrogen Gas and Tritiated Water

JiEun Yang, TaeJun Kim, Minsik Kim, Jei-Won Yeon
Korea Atomic Energy Research Institute, Republic of Korea

P2_06 Experimental Results and Experience with LPCE Process

O.A. Fedorchenko*, I.A. Alekseev, S.D. Bondarenko, T.V. Vasyanina
National Research Center "Kurchatov Institute", Russian Federation

P2_07 Development of Technology for the Liquid Radioactive Waste Detritiation by Two-Temperature Catalytic Isotope Exchange Method in a Water-Hydrogen System

Yu.S. Pak, A.N. Bukin*, V.S. Moseeva, S.A. Marunich, M.B. Rosenkevich
Dmitry Mendeleev University of Chemical Technology of Russia, Russian Federation

P2_08 Hydrogen Isotope Abstraction by Protonic Metal Oxides with Various Crystal Structures

Chan Woo Park*, Kune-Woo Lee, In-Ho Yoon, Hee-Man Yang, Ilgook Kim
Korea Atomic Energy Research Institute, Republic of Korea

P2_09 Rigorous Dynamic Simulation of Cryogenic Distillation of Hydrogen Isotopologues in the Fuel Cycle of a Thermonuclear Reactor Based on UV-Flash

Andrey Ovcharov^{1*}, Richard Szczepanski², Jacek Kosek¹, Nuno Pedrosa², Xiaofei Lu³, Lorenzo Basili⁴, Rosa Lo Frano⁴, Donato Aquaro⁴

¹International Thermonuclear Experimental Reactor, France, ²KBC Advanced Technologies Ltd, UK, ³Institute of Plasma Physics, China, ⁴University of Pisa, Italy

- P2_10 Commissioning of the LPCE and Purification Systems as Front-End of the Experimental Pilot Plant for D-T Separation**
 Gheorghe Popescu, George Ana, Anisia Bornea, Ciprian Bucur, Ovidiu Balteanu, Iulia Stefan, Marius Zamfirache
National Institute of Research and Development for Cryogenic and Isotopic Technologies, Romania
- P2_11 Hydrogen Generator Modification in View of Tritium Compatibility**
 George Ana*, Anisia Bornea, Marius Zamfirache, Alina Niculescu, Mihai Vijulie, Ciprian Bucur
National Institute of Research and Development for Cryogenic and Isotopic Technologies, Romania
- P2_12 Pd Dense Membrane with Microchannel Structure for Hydrogen Isotope Purification under Different Pressures**
 Lei Yue*, Yu Gong, Jingwei Hou, Jiamao Li, Chao Chen, Chengjian Xiao, Heyi Wang
Institute of Nuclear Physics and Chemistry, China
- P2_13 Study on Preparation of Palladium Film on Porous Stainless Steel Substrate**
 Yaqi Song¹, Feilong Yang¹, Guikai Zhang¹, Guanghui Zhang¹, Renjin Xiong¹, Zhanlei Wang², Changan Chen^{1*}
¹China Academy of Engineering Physics, China, ²Science and Technology on Surface Physics and Chemistry Laboratory, China
- P2_14**
- P2_15 Thermodynamics, Kinetics and Selectivity of H₂ and D₂ on Zeolite under Low Temperature**
 Renjin Xiong^{1*}, Michael Hirscher²
¹China Academy of Engineering Physics, China, ²Max Planck Institute for Intelligent Systems, Germany
- P2_16 Oxygen Regeneration of Palladium Silver Alloy Tubed Hydrogen Purifier**
 Melissa Golyski
Savannah River Nuclear Solution, USA
- P2_17 Trace Tritium Recovery within the European DEMO Fuel Cycle**
 Tamsin Jackson^{1*}, Joao Lopes¹, Nadeera Jayasekera², Barry Butler¹
¹Culham Centre for Fusion Energy, UK, ²Loughborough University, UK
- P2_18 Catalytic Separation of Hydrogen Isotopes Using Nickel Modified Alumina PLOT Capillary Column**
 Weiwei Wang*, Xingbi Ren, Lidong Xia, Hairong Li, Weiguang Zhang, Xiaosong Zhou, Xinggui Long, Shuming Peng
China Academy of Engineering Physics, China
- P2_19 Hydrogen Adsorption and Desorption Experiments for Cryogenic Molecular Sieve Bed**
 Soon Chang Park*, Seok Kwon Son, Mu-Young Ahn, Seungyon Cho, Yi-Hyun Park, Youngmin Lee
National Fusion Research Institute, Republic of Korea
- P2_20 Design and Manufacturing Issues Related to a High Efficiency Microreactor in View of Tritiated Streams Conversion to Water**
 Mirela Draghia*, Gheorghe Pasca, Alin Fuciu
IS TECH SRL, Romania

- P2_21 A Study on Trace Amount of Q2 and CQ4 Treatment Process**
Woo Chan Jung^{1*}, Pil Kap Jung¹, Young Min Kim¹, Hung Man Moon¹, Min Ho Chang², Hyeon Gon Lee²
¹Daesung Industrial Gases, Republic of Korea, ²National Fusion Research Institute, Republic of Korea
- P2_22 A Mathematical Design and Synthesis of Complex Column Model for Tritium Separation**
Seon-Byeong Kim
Korea Atomic Energy Research Institute, Republic of Korea
- P2_23 The Study of a CECE Process for Low Tritiated Liquid Waste prior to Experimental Phase**
Anisia Mihaela Bornea*, Marius Valentin Zamfirache, George Romulus Ana, Ovidiu Ioan Balteanu, Liviu Ovidiu Stefan
National Institute of Research and Development for Cryogenic and Isotopic Technologies, Romania
- P2_24 Study of Preparation and Hydrogen Isotope (H₂ and D₂) Sorption of CHA-Type Zeolite**
Akira Taguchi^{1*}, Takumi Nakamori¹, Yuki Yoneyama¹, Takahiko Sugiyama², Masahiro Tanaka³, Kenji Kotoh⁴, Yu Tachibana⁵, Tatsuya Suzuki⁵
¹University Toyama, Japan, ²Nagoya University, Japan, ³National Institute for Fusion Science, Japan, ⁴Kyushu University, Japan, ⁵Nagaoka University Technology, Japan
- P2_25 A Theoretical Study On Tritium Calorimetry In Hydride Bed**
S.-H. Yun*, M. Chang, H.-G. Kang, D. Chung, J.W. Lee, K.J. Jung
National Fusion Research Institute, Republic of Korea
- P2_26 The Diffusion Permeation Behavior of Deuterium through the Niobium and its Composite Membrane with Different Grain Sizes**
Guo Yakun, Zhou Xin, Ma Bangjun, Ye Xiaoqiu, Chen Changan*
Science and Technology on Surface Physics and Chemistry Laboratory, China
- P2_27 Experimental Results of a Medium-Scale Pd-Ag Permeator for the Tritium Extraction and Removal System of DEMO-HCPB Blanket**
Marco Incelli*, Alessia Santucci, Silvano Tosti
European Nuclear Energy Agency, Italy
- P2_28 Permeator Simulations for the Exhaust Processing System of the EU-DEMO Fuel Cycle**
Yannick Hoerstensmeyer^{1*}, Silvano Tosti², Alessia Santucci², Giacomo Bruni²
¹Karlsruhe Institute of Technology, Germany, ²European Nuclear Energy Agency, Italy
- P2_29 Technology Development for Isotope Rebalancing and Protium Removal in the EU-DEMO Fuel Cycle**
Cyra Neugebauer*, Yannick Hoerstensmeyer, Christian Day
Karlsruhe Institute of Technology, Germany
- P2_30 Use of SAES Getter ST 909 for the Complete Cracking of Methane Contained in Small-Volume Tritiated Dihydrogen Batches with High Concentrations of Impurities**
Haudebourg*, Gauvin, Milleton, Macaud
The French Alternative Energies and Atomic Energy Commission, France

- P2_31 Non-Evaporable Getters for Tritium Recovery in the Helium Coolant Purification System of DEMO**
 Alessia Santucci*, Antonio Frattolillo, Marco Incelli, Silvano Tosti
European Nuclear Energy Agency, Italy
- P2_32 Evaluating All-Metal Diaphragm Valves for Use in a Tritium Environment**
 Paul R. Beaumont, Levi R. Houk, Lucas M. Angelette, Andrew N. Payton, James E. Klein, Anita S. Poore
Savannah River National Laboratory, USA
- P2_33 Tritium Transport Characteristics Analysis of TMSR-SF under Accident Conditions**
 Hao Qin, Chenglong Wang*, Wenxi Tian, Suizheng Qiu, G.H. Su
Xi'an Jiaotong University, China
- P2_34 The Coolant Purification System of China HCCB TBM: Preliminary Design and Testing of Principle Prototype System**
 Zhiyong Huang*, Jiangfeng Song, Yong Yao, Changan Chen
China Academy of Engineering Physics, China
- P2_35 Wolsong TRF Operation Status, Operation Experience**
 Woo Jin Jeon, Dong Min Lee, Hyun Je Park, Hye Jin Kwon
Korea Hydro & Nuclear Power Co., Republic of Korea
- P2_36 The Current Status of the Heavy Water Detritiation Facility at PNPI**
 I.A. Alekseev, S.D. Bondarenko*, T.V. Vasyanina, O.A. Fedorchenko
National Research Center "Kurchatov Institute", Russian Federation
- P2_37 Simulation of Gas Flows in DT-Fueling Systems of DEMO-FNS Hybrid Facility Accounting for Integrated Modeling of Core and Divertor Plasmas**
 Sergey Ananyev*, Andrei Kukushkin, Alexei Dnestrovskij, Alexander Spitsyn, Boris Kuteev
National Research Center "Kurchatov Institute", Russian Federation
- P2_38 Research Facilities of IAE NNC RK (Kurchatov, Kazakhstan) for Investigations of Tritium Interaction with Structural Materials of Fusion Reactors**
 Yuriy Gordienko^{1*}, Yuriy Ponkratov¹, Timur Kulsartov¹, Zhanna Zaurbekova¹, Yerbolat Koyanbayev¹, Yevgen Chikhray²
¹*Institute of Atomic Energy, Kurchatov, Kazakhstan*, ²*Al-Farabi Kazakh National University, Kazakhstan*
- P2_39 Monitoring and Recovery of Tritium in Fusion Test Facility**
 M. Tanaka^{1,2*}, N. Suzuki¹, H. Kato¹, C. Iwata¹, N. Akata¹, H. Hayashi¹, H. Miyake¹
¹*National Institute for Fusion Science, Japan* ²*The Graduate University for Advanced Studies, Japan*
- P2_40 Analysis of the Transient Regimes of a Detritiation Facility Operation**
 Marius Valentin Zamfirache*, Anisia Mihaela Bornea, Liviu Ovidiu Stefan, Ovidiu Ioan Balteanu, George Ana
National R&D Institute for Cryogenics and Isotopic Technologies, Romania

- P2_41 Concept Design of the Tritium Plant on the TRINITI Site for Ignitor Project Tasks**
Alexander Gostev¹, Mikhail Subbotin^{2*}, Vladimir Kochin², Vladimir Khripunov², Mikhail Rozenkevich³, Alexander Perevezentsev³, Galina Shrova³, Yury Pak³, Alexey Bukin³, Sergey Marunich³
¹JSC, Russian Federation, ²NRC, Russian Federation, ³D. Mendeleev University of Chemical Technology of Russia, Russian Federation
- P2_42 Simulation of He-3 Collection Procedure in Tritium Storage System of Fusion Fuel Cycle**
Jae-Uk Lee^{1*}, Min Ho Chang¹, Hyun-Goo Kang¹, Dong-You Chung¹, In-Beum Lee²
¹National Fusion Research Institute, Republic of Korea, ²Pohang University of Science and Technology, Republic of Korea
- P2_43 Romania' Contribution to Manufacture and Use of Heavy Water**
Ionita Gheorghe*, Marius Peculea, Ioan Stefanescu
The National Research and Development Institute for Cryogenic and Isotopic Technologies - ICSI Rm. Valcea, Romania
- P2_44 Challenges of Fueling Fusion Plasmas with Deuterium-Tritium Pellets**
Larry Baylor*, Steve Meitner, Robert Duckworth, Trey Gebhart
Oak Ridge National Laboratory, USA
- P2_45 HYSYS/ASPEN+ Advanced Tritium Transfer Modelling Tools for ITER/DEMO Plant Systems**
Jose M. Nougues¹, Josep A. Feliu¹, Oriol Millan¹, Luis A. Sedano^{2,3*}
¹Inprocess Technology And Consulting Group, Spain ²FUS_ALIANZ Science, Engineering & Consulting, Spain, ³E&C energy consulting, Spain
- P2_46 Optimization of the Manufacturing of Beta Radiation Sources Based on Tritium for Betavoltaic Power Sources**
A.S. Anikin*, M.I. Belyakov, A.N. Bukin, N.E. Zabirowa, N.P. Bobyr, I.G. Lesina, A.A. Semenov, A.V. Lizunov, A.V. Demin
A.A. Bochvar High-technology Research Institute of Inorganic Materials, Russian Federation
- P2_47 Withdraw**
- P2_48 Quenching Correction with Two-Dimensional Scintillation Spectrum in Tritium Measurement**
Masanori Hara^{1*}, Miki Shoji¹, Tsukasa Aso², Takayoshi Furusawa³, Yuka Kato³, Takuro Masuda³
¹University of Toyama, Japan, ²National Institute of Technology, Toyama College, Japan, ³Hitachi, Ltd., Japan
- P2_49 A Study on the Risk Management of Fusion Exhaust Gas Recovery Process**
Woo-Chan Jung^{1*}, Pil-Kap Jung¹, Young-Min Kim¹, Hung-Man Moon¹, Min-Ho Chang², Hyeon-Gon Lee²
¹Daesung Industrial Gases, Republic of Korea, ²National Fusion Research Institute, Republic of Korea
- P2_50 Applicability of a 100 ml Polyethylene Vial for Low Level Tritium Measurement by a Low Background Liquid Scintillation Counter**
Yoshinari Oshimi¹, Mayu Ohki¹, Misato Nagano¹, Takuyo Yasumatsu^{1*}, Masanori Hara², Satoshi Akamaru², Masato Nakayama², Miki Shoji²
¹Tokyo Power Technology Ltd., Japan ²University of Toyama, Japan