

Poster Sessions

POSTER SESSION 1

Tuesday 17th September

16:00 – 18:00 Ground Floor

Chairs: Enoeda, M. and Moreno, C.

Topic A First-Wall Technology and High Heat Flux Components

P1-001 The New Method of Creation of Plasma and its Fast Heating till Thermonuclear Temperatures

Chikvashvili, I.

P1-003 Fabrication of W/FMS joint mock-ups for first-wall using a hot isostatic pressing

Jung, Y-I.; Park, J-Y.; C., B-K.; Lee, D. W.; Cho, S.

P1-004 Design Strategy for the PFC in DEMO Reactor

Igitkhanov, Y.; Bazylev, B.; Boccaccini, L.

P1-005 Numerical study of the impact of hydrogen bombardment on the mechanical properties of tungsten

Yu, X.; Gou, F.

P1-007 Joining of HHF components applying electroplating technology

Krauss, W.; Lorenz, J.; Konys, J.

P1-008 Er2O3 coating: process optimization through film characterization

Rayjada, P. A.; Vaghela, N. P.; Chauhan, N. L.; Sircar, A.; Rajendrakumar, E.; Manocha, L. M.; Raole, P. M.

P1-009 Recent Advances of T-11m Lithium Program

Lazarev, V.; Mirnov, S.; Djigailo, N.; Kostina, A.; Nesterenko, V.; Vertkov, A.; Lyublinski, I.

P1-010 Helium-implanted CLAM steel and their annealing behavior investigated by positron-annihilation spectroscopy

Cao, Q.; Ju, X.; Guo, L.; Wang, B.

P1-011 Manufacturing of ITER pre-qualification Normal Heat Flux (NHF) First Wall (FW) 2 MW/m² small-scale mock-ups and semi-prototype

Banetta, S.; Zaccchia, F.; Lorenzetto, P.; Bobin-Vastra, I.; Boireau, B.; Cottin, A.; Mitteau, R.; Eaton, R.; Raffray, R.

P1-012 Three-dimensional flow measurement of a sphere-packed pipe by a digital hologram and refractive index-matching method

Satake, S.; Aoyagi, Y.; Tsuda, T.; Unno, N.; Yuki, K.

P1-014 Analyses results of the EHF FW Panel with welded fingers
Sviridenko, M.; Leshukov, A.; Razmerov, A.; Tomilov, S.; Danilov, I.; Strebkov, Y.; Mazul, I.; Labusov, A.; Gervash, A.; Belov, A.; Semichev, D.

P1-015 Production Management and Quality Assurance for the Fabrication of the In-Vessel Components of the Stellarator Wendelstein 7-X

Li, C.; Boscary, J.; Junghanns, P.; Mendelevitch, B.; Peacock, A.; Pirsch, H.; Sellmeier, O.; Springer, J.; Stadler, R.; Streibl, B.

P1-016 Analysis and Primary Experiment Results of a Guidable Free Curve-Surface Flow for Liquid Metal PFCs

Xu, Z.; Pan, C.; Zhang, X.; Liu, B.; Duan, X.

P1-017 Mechanical Analysis of the Joint between Wendelstein 7-X Target Element and the Divertor Frame Structure

Smirnow, M.; Kuchelmeister, M.; Boscary, J.; Peacock, A.

P1-018 Effects of heat treatments on deuterium retention/desorption properties of tungsten materials

Yamauchi, Y.; Nihei, N.; Armando, M.; Hino, T.; Nobuta, Y.; Oya, Y.; Okuno, K.; Ueda, Y.

P1-019 Simulation of neutral gas flow in a tokamak divertor using Direct Simulation Monte Carlo method

Gleason González, C.; Varoutis, S.; Day, C.

P1-020 Simulation of runaway electron evolution during a disruption in HL-2A tokamak*

Li, Y.; Wu, N.; Zhang, Y.; Sang, C.; Wang, Z.; Sun, J.; Wang, D.

P1-021 Molecular dynamics simulation of the energy deposition of low energy hydrogen and its isotopes in tungsten

Guo, L.; Sun, J.; Liu, S.; Sang, C.; Wang, D.

P1-022 Evaluation of heat transfer by sublimation for the application to the divertor heat sink for high fusion energy conversion

Gwon, H.; Wada, K.; Takeuchi, Y.; Kasada, R.; Konishi, S.

P1-023 Prototyping of the Blanket Shield Module for the ITER ECH&CD Upper Launcher

Spaeh, P.; Aiello, G.; Gessner, R.; Grossetti, G.; Kroiss, A.; Meier, A.; Obermeier, C.; Scherer, T.; Schreck, S.; Strauss, D.; Vaccaro, A.

P1-024 Infrared thermography inspection for mono-block divertor target in JT-60SA

Nakamura, S.; Sakurai, S.; Ozaki, H.; Seki, Y.; Yokoyama, K.; Sakasai, A.

P1-025 Study on Deuterium Retention and Lithiation Properties of Tungsten

Li, C.; Wu, X.; Zhang, C.; Ding, H.; De Temmerman, G.; van der Meiden, H.J.

P1-026 Dual-pulse laser induced breakdown spectroscopy for measuring laser cleaning process of co-deposition layer on the first mirror of HL-2A

Hai, R.; Zhang, L.; Zhao, D.; Ding, H.

Topic B Blanket Technology

P1-027 Preparation of Al₂O₃/YSZ Multi-laminated Coatings by Sol-gel Technique as Tritium Permeation Barrier

Zhang, K.; Hu, Q.; Liu, L.; Guo, Y.; Dai, G.; Zheng, X.

P1-028 Studies on the solubility of hydrogen in molten Pb83Li17 eutectic alloy

Singh, K.; Kumar, S.; Krishnamurthy, N.

P1-029 Results of LLCB TBM conceptual design optimization

Obukhov, D.; Kirillov, I.; Pertsev, D.; Kartashev, I.; Leshukov, A.; Sviridenko, M.

P1-030 Development of the tritium breeder monitoring systems for the Lead-Lithium cooled Ceramic Breeder (LLCB) Module of the ITER

Kapyshev, V.; Danilov, I.; Kartashov, I.; Kovalenko, V.; Leshukov, A.; Sviridenko, M.; Vladimirova, N.; Strebkov, Y.

P1-031 RF DEMO Helium Cooled Ceramic Breeder Blanket

Kovalenko, V.; Danilov, I.; Kalashnikov, A.; Leshukov, A.; Poliksha, V.; Razmerov, A.; Strebkov, Y.

P1-032 Neutronic study of an innovative natural uranium-thorium based fusion-fission hybrid energy system

Xiao, S.; Zhou, Z.; Zhao, J.; Yang, Y.

P1-033 Synthesis and Fabrication of Lithium Orthosilicate Pebbles by Solid State Reaction Process

Mandal, D.

P1-034 Characteristics of microstructure and tritium release properties of different kinds of beryllium pebbles for application in tritium breeding modules

Kurinskiy, P.; Vladimirov, P.; Moeslang, A.; Rolli, R.; Zmitko, M.

P1-035 Design development and analytical assessment of LLCB TBM in Russian Federation during 2012-2013

Leshukov, A.; Danilov, I.; Kartashev, I.; Kovalenko, V.; Razmerov, A.; Strebkov, Y.; Sviridenko, M.; Sysoev, A.; Kirillov, I.; Obukhov, D.; Pertsev, D.; Vitkovskiy, I.

P1-036 Experimental Investigation of Liquid-Metal Distribution in MHD Flows in Insulating Parallel Ducts

Ueki, Y.; Miura, M.; Yokomine, T.; Kunugi, T.

P1-037 Development of beryllide pebble fabrication as advanced neutron multiplier

Nakamichi, M.; Kim, J-H.

P1-038 Neutron cross section evaluation of Chromium and Iron for Fusion Application

Kim, H. I.; Lee, C. W.; Kim, D. H.; Lee, Y-O.; Lee, D-W.; Cho, S.

P1-039 Development of CAD-based Discrete Ordinates Code and Comparison of Neutron Flux Distributions in the Korea Helium Cooled Ceramic Reflector Test Blanket Module

Kim, J. W.; Lee, C. W.; Lee, Y-O.; Lee, D-W.; Cho, S.

P1-040 Long-term annealing of lithium orthosilicate based ceramic breeder pebbles

Kolb, M.; Leys, O.; Knitter, R.

P1-041 Comparison of coating processes for the development of aluminum-based barriers for blanket applications

Wulf, S.-E.; Krauss, W.; Konys, J.

P1-042 Corrosion susceptibility comparison of Eurofer 97 steel in contact two ceramic breeders lithium silicates

Hernández, T.; Fernández, P.

P1-043 An Integrated Mesh Translation Scheme for the High-fidelity Coupling of Fusion Neutronics and TH/SM Analyses

Qiu, Y.; Fischer, U.; Pereslavytsev, P.

P1-044 Experimental Investigation of Thermal Properties of the Li₄SiO₄ Pebble Beds

Yongjin, F.; Kaiming, F.; Yinfen, C.; Yang, L.; Jin, H.

P1-045 Novel Granulation Method for Advanced Tritium Breeder

Hoshino, T.

P1-046 Effect of plasma sintering consolidation on reactivity of beryllium

Kim, J-H.; Nakamichi, M.

P1-048 Results of EUROFER-97 corrosion tests in lead-lithium alloy

Loginov, N.; Mikheyev, A.; Morosov, V.; Zazorin, I.; Solomatin, A.; Engelko, V.; Kirillov, I.; Tkachenko, K.

P1-049 Development of the Water Cooled Lithium-Lead Blanket for DEMO

Aubert, J.; Aiello, G.; Jonquères, N.; Li Puma, A.; Morin, A.; Rampal, G.

P1-050 Liquid metal magnetohydrodynamic flows in manifolds of dual coolant lead lithium blankets

Mistrangelo, C.; Bühler, L.

P1-051 Development of the Helium Cooled Lithium Lead Blanket for DEMO

Aiello, G.; Aubert, J.; Jonquères, N.; Li Puma, A.; Morin, A.; Rampal, G.

P1-052 Influence of surface oxidation on electric potential measurements in MHD liquid metal flows

Chowdhury, V.; Bühler, L.; Mistrangelo, C.

P1-053 Influence of magnetic field deformation by ferromagnetic wall materials on MHD flows in pipes and ducts of fusion blankets

Ehrhard, S.; Bühler, L.

P1-054 Status of the new DEMO HCPB Blanket design in the European DEMO studies

Kecskés, S.; Carloni, D.; Kang, Q.; Ilic, M.; Bitz, O.

P1-055 Tritium permeation experiments using reduced activation ferritic/martensitic steel tube and erbium oxide coating

Chikada, T.; Shimada, M.; Pawelko, R.; Terai, T.; Muroga, T.

P1-056 Microstructural Characterization for Radiation Enhanced Deuterium Loaded RB-SiC.

Moroño, A.; Hernández, T.; Hodgson, E.; Malo, M.

P1-057 Conceptual design of a water cooled breeder blanket for CFETR

Liu, S.; Pu, Y.; Li, J.; Peng, C.; Cheng, X.; Ma, X.

P1-058 Corrosion and Transport of Activated Corrosion Products in DCLL Blanket

Smolentsev, S.; Saeidi, S.; Zucchetti, M.; Abdou, M.

P1-059 Fission blanket benchmark experiment on spherical assembly of uranium and PE with PE reflector

Tonghua, Z.; Xinxin, L.; Rong, L.; Zijie, H.; Li, J.; Mei, W.

P1-060 Measurement and Calculation of Neutron Energy Spectrum in an Alternate Depleted Uranium-Polyethylene System

Xinxin, L.; Tonghua, Z.; Rong, L.; Zijie, H.; Li, J.

Topic C Fuel Cycle and Tritium Processing

P1-061 Theoretical prediction of thermodynamic properties of tritiated beryllium molecules and application to ITER source term

Virost, F.; Barrachin, M.; Souvi, S.; Cantrel, L.

P1-062 Investigation on degradation mechanism of ion exchange membrane immersed into high-concentration tritiated water under the Broader Approach Activities

Iwai, Y.; Sato, K.; Yamanishi, T.

P1-063 **Hydrogen and water vapor adsorption properties on cation-exchanged mordenite for use to a tritium recovery system**
Kawamura, Y.; Edao, Y.; Iwai, Y.; Yamanishi, T.

P1-064 **On ion implantation and damage effect in Li₂TiO₃ as a fusion breeder blanket: a technological approach for in-situ degradation testing.**
Carella, E.; Hernández, M. T.; González, M.

P1-065 **Experimental testing results to demonstrate tritium extraction in LiPb loop systems with a compact permeator against vacuum**
Sacristán, R.; Veredas, G.; Bonjoch, I.; Peñalva, I.; Calderón, E.; Alberro, G.; Balart, D.; Sarrionandia-Ibarra, A.; Pérez, V.; Ibarra, A.; Legarda, F.

P1-066 **Tritium retention properties of tungsten, co-deposited carbon films and graphite**
Nobuta, Y.; Hatano, Y.; Matsuyama, M.; Abe, S.; Akamaru, S.; Yamauchi, Y.; Hino, T.; Suzuki, S.; Akiba, M.

P1-067 **Hydrogen Isotopes behavior on water-metal boundary with simultaneous transferring from and to the metal surface**
 Hayashi, T.; Isobe, K.; Edao, Y.; Nakamura, H.; Kobayashi, K.; Oya, Y.; Okuno, K.; Yamanishi, T.

P1-068 **Recent results on tritium technology for DEMO reactor in JAEA under BA program**
Yamanishi, T.; Nakamura, H.; Kawamura, Y.; Iwai, Y.; Isobe, K.; Yamada, M.; Oyaidu, M.

P1-069 **Construction and commissioning of a Hydrogen Cryogenic Distillation system for tritium recovery at ICIT Rm. Valcea**
Ana, G.; Pasca, G.; Bucur, C.; Brad, S.; Vijulie, M.

P1-070 **Tokamak exhaust gas composition measurement via different mass spectrometers**
Battes, K.; Day, C.; Hauer, V.

P1-071 **Activity monitoring of ppm concentrations of tritium in helium gas streams by beta induced X-ray spectrometry**
Röllig, M.; Bornschein, B.; Priester, F.

Topic D Material Engineering for FNT

P1-072 **Status & Progress of the R&D Work for ITER Magnet Supports**
Li, P.; Hou, B.

P1-073 **Corrosion of 9Cr-1Mo steel in Pb-17Li in a rotating disc experiment**
Chakraborty, P.; Pradhan, P. K.; Fotedar, R. K.; Krishnamurthy, N.

P1-074 Tritium Transport calculations for the IFMIF Tritium Release Test Module

Freund, J.; Arbeiter, F.; Abou-Sena, A.; Franza, F.; Kondo, K.

P1-075 IFMIF-LIPAc beam diagnostics and its challenges

Carmona Torres, J. M.; Calvo, J.; Guirao, A.; Oliver, C.; Podadera, I.; Soletto, A.; Marroncle, J.; Abbon, P.; Egberts, J.; Gournay, J.F.; Jeanneau, F.; Marchix, A.; Poggi, M.

P1-076 Microstructural characteristics of commercial W-1% La2O3 alloys

Yinzhong, S.; Kai, C.; Jie, Y.; Bo, J.

P1-077 Study on the capsule material feasibility in ITER environment

Lee, Y.; Dang, J.-J.; Chung, K.-J.; Cheon, M. S.; Lee, H. G.; Bertalot, L.; Hwang, Y.-S.

P1-078 Influences of alloying elements and tempering on the impact and creep properties of Korean RAFM steel

Chun, Y.-B.; Han, C. H.; Choi, B. K.; Kim, K. B.; Kang, S. H.; Noh, S. H.; Baek, J.-H.; Kim, T.-K.; Lee, D.; Cho, S.; Jeong, Y. H.

P1-079 Impact Properties of Electron Beam Welds of V-4Ti-4Cr alloys NIFS-HEAT-2 and CEA-J57

Tsisar, V.; Nagasaka, T.; Le Flem, M.; Muroga, T.; Yeliseyeva, O.; Konys, J.

P1-080 Evaluation on Defect in the Weld of Stainless Steel Materials using Nondestructive Technique

Lee, J.; Lee, J.; Lee, S.; Bae, D.

P1-081 Nanoindentation by using CSM as tool to measure changes in mechanical properties on RAFM steels irradiated with heavy ions.

Roldán Blanco, M.; Rams Ramos, J.; Jiménez Rey, D.; Fernández Paredes, P.

P1-082 Mechanical properties of nano-particle dispersion strengthened V-4Cr-4Ti alloy

Zheng, P.; Nagasaka, T.; Muroga, T.; Chen, J.; Fu, H.; Li, C.

P1-083 Joining Technologies of RAFM steel CLF-1 for Fabrication of ITER Test Blanket Module

Wang, P.; Chen, J.; Xu, Z.

P1-084 Performance characterization of the FLEX low pressure helium facility for fusion technology experiments

Sch lindwein, G.; Arbeiter, F.; Klein, C.

P1-086 Engineering Design of the IFMIF EVEDA Reference Test Cell and Key Components

Tian, K.; Arbeiter, F.; Chen, Y.; Heinz el, V.; Kondo, K.; Mittwollen, M.

P1-087 Preliminary design of the Neutron Spectral Shifter dedicated to the IFMIF Liquid Breeder Validation Module

Mas, A.; Mota, F.; Casal, N.; García, A.; Rapisarda, D.; Arroyo, J. M.; Molla, J.; Ibarra, A.

P1-088 IFMIF-EVEDA SRF Linac Couplers Test Bench

Regidor, D.; Kirpitchenov, I.; Méndez, P.; Molla, J.; Salom, A.; Weber, M.; Desmons, M.; Grouas, N.; Hardy, P.; Hennion, V. M.; Jenhani, H.; Orsini, F.

P1-089 Electrical insulating radiation-resistant coatings for the design elements of ITER Blanket

Maksimov, V.; Ivanov, V.; Dubinin, G.; Leshukov, A.; Strebkov, Y.; Sviridenko, M.

P1-090 Metallurgical Analysis of Lithium Test Assembly Operated for 1200 hours

Furukawa, T.; Kondo, H.; Kanemura, T.; Hirakawa, Y.; Yamaoka, N.; Hoashi, E.; Suzuki-Yoshihashi, S.; Horiike, H.

Topic E Vacuum Vessel

P1-091 Pendulum Support of Plasma Vessel W7-X

Missal, B.; Hansen, A.; Liesenberg, K.; Leher, F.; Schiller, T.

P1-092 Thermal-hydraulic analysis for ITER Upper ELM Coil

Zhang, S.; Song, Y.; Wang, Z.; Du, S.; Ji, X.

P1-093 Intelligent Controller of aFlexible Hyprid Robot Machine for ITER Assembly and Maintenance

AL-Saedi, M.; Wu, H.; Handroos, H.

P1-094 Design of the Tore Supra West divertor structure according to nuclear construction code

Larroque, S.; Portafaix, C.; Doceul, L.; Saille, A.; Nardon, E.; Samaille, F.; Bucalossi, J.

P1-095 Thermal Analysis on Detailed 3D Finite Element Models of ITER Thermal Shield

Nam, K.; Chung, W.; Noh, C. H.; Ahn, H. J.; Lee, H. G.; Hamlyn-Harris, C.; Her, N.; Choi, C. H.; Sborchia, C.

P1-096 Fabrication Results of Full Scale Mock-up for ITER VV Port in Korea

Kim, H-S.; Park, C.-K.; Kim, G.-H.; Hong, K.-H.; Lee, Y.-J.; Kim, B.-C.; Ahn, H.-J.; Lee, H.-G.; Lee, J.-S.; Won, J.-G.; Sa, J.-W.; Choi, C.-H.

P1-097 Bolted Ribs Analysis for the ITER Vacuum Vessel using Finite Element Submodelling Techniques

Zarzalejos, J. M.; Fernández, E.; Caixas, J.; Bayón, A.; Polo, J.; Guirao, J.; García Cid, J.; Rodríguez, E.

P1-098 Electrical Parameters for KTX vacuum vessel

Liu, X.; Xu, W.; Yang, Q.; Zheng, J.

P1-099 Detailed Analysis of Eddy Currents in Wendelstein 7-X

Köppen, M.; Bykov, V.; Schauer, F.

P1-100 The ITER EC H&CD Upper Launcher: Seismic Analysis

Aiello, G.; Vaccaro, A.; Combesure, D.; Gessner, R.; Grossetti, G.; Meier, A.; Saibene, G.; Scherer, T.; Schreck, S.; Spaeh, P.; Strauss, D.

P1-101 Design of ITER Vacuum Vessel In-wall Shielding

Wang, X.; Ioki, K.; Morimoto, M.; Tailhardat, O.; Terasawa, A.; Gribov, Y.; Barabash, V.; Polunovskiy, E.; Dani, S.; Choi, C-h.; Sborchia, C.; Pathak, H.; Raval, J.

Topic F Nuclear System Design**P1-102 Current status of engineer design of KTX components**

Yang, Q.; Song, Y.; Zhao, W.; Zheng, J.; Shi, S.; Chen, Z.; Zhang, J.; Xu, H.; Liu, W.; Ding, W.

P1-103 Nuclear Analysis for ITER JA WCCB-TBM

Sato, S.; Tanigawa, H.; Hirose, T.; Enoeda, M.; Ochiai, K.; Konno, C.

P1-104 Overview of neutronic analysis results for RF LLCB TBM

Kartashev, I.; Leshukov, A.; Sviridenko, M.; Kirillov, I.; Obukhov, D.; Pertsev, D.

P1-105 K-effective Benchmarking of SuperMC 2.0

Song, J.; Sun, G.; Zheng, H.; Chen, Z.; Wu, M.

P1-106 FENDL-3 benchmark test with neutronics experiments related to fusion in Japan

Konno, C.; Ohta, M.; Takakura, K.; Ochiai, K.; Sato, S.

P1-107 Status of ITER TBM port plug conceptual design and analyses

Kim, B. Y.; Sabourin, F.; Merola, M.; Giancarli, L.; Villari, R.; Di Maio, A.; Lucca, F.; Levesy, B.

P1-108 Re-design of ITER GDC system based on a fixed electrode concept

Yang, Y.; Maruyama, S.; Kiss, G.; O'connor, M.; Zhang, Y.; Pitts, R.; Shimada, M.; Fang, T.; Wang, Y.; Wang, M.; Pan, Y.; Li, B.; Li, L.

P1-109 The Electromagnetic design and Analysis for CFETR magnet system

Zheng, J.; Song, Y.; Liu, X.; Wu, S.; Lu, K.; Wan, Y.; Liu, J.; Weng, P.; Wu, W.; Ye, M.; Liu, S.; Wei, J.; Du, S.; Cheng, Y.; Xu, W.; Wei, J.

P1-111 Modeling and sizing of the heat exchangers of a new supercritical CO₂ Brayton power cycle for energy conversion for fusion reactors

Serrano, I. P.; [Cantizano, A.](#); Linares, J. I.; Moratilla, B. Y.

P1-112 Enhanced arrangement for recuperators in supercritical CO₂ Brayton power cycle for energy conversion in fusion reactors

Serrano, I. P.; [Linares, J. I.](#); Cantizano, A.; Moratilla, B. Y.

P1-113 Thermodynamic Evaluation on Power Conversion System Options for Potential K-DEMO Fusion Reactor

[Park, I. W.](#); Park, M. Y.; Park, G. C.; Lee, Y. S.; Im, K. H.; Kim, H. C.; Kim, K. M.; Kim, E. S.

P1-114 Assessment of Mesh-Coupled R2S Shutdown Dose Calculation Error Dependence on Voxel Resolution

[Mangham, S.](#); Turner, A.

Topic G Safety Issues and Waste Management

P1-115 Activation analyses for the IFMIF-LBVM

[Mota, E.](#); Casal, N.; García, A.; Mas, A.; Molla, J.; Ibarra, A.

P1-119 Busbar arcs at large Fusion Magnets: Conductor to Feeder Tube arcing Model Experiments with the LONGARC device

[Klimenko, D.](#); Pasler, V.

P1-120 Preliminary results from a detritiation facility dedicated to soft housekeeping waste and tritium valorisation.

[Liger, K.](#); Trabuc, P.; Mascarade, J.; Troulay, M.; Perrais, C.; Tosti, S.; Borgognoni, F.

P1-121 Shutdown dose rate assessment with the Advanced D1S method: development, applications and validation

[Villari, R.](#); Fischer, U.; Moro, F.; Pereslavl'tsev, P.; Petrizzi, L.; Podda, S.; Serikov, A.

P1-122 CFD analysis for the transport of tritium within different process rooms of ITER

[Colomer, C.](#); Ariño, X.; Alemán, A.; Martín, M.; Salellas, J.; Salvat, M.

P1-124 Penetration of tritiated water vapor through hydrophobic paints for concrete materials

[Edao, Y.](#); Kawamura, Y.; Yamanishi, T.; Fukada, S.

P1-125 Neutron Spectral Effects on Pb-17Li Activation: a Study for different Blanket Designs

[Zucchetti, M.](#); Youssef, M.; Liu, H.; Abdou, M.

Topic H Models and Experiment for FNT

P1-127 **Manufacturing Prototypes for Lipac Beam Dump**

Arranz, F.; Brañas, B.; Iglesias, D.; Nomen, O.; Rapisarda, D.; Lapeña, J.; Muñoz, A.; Szcapaniak, B.; Manini, J.; Gómez, J.

P1-128 **The F4E programme on nuclear data validation and nuclear instrumentation techniques for TBM in ITER**

Leichtle, D.; Angelone, M.; Batistoni, P.; Calderoni, P.; Fischer, U.; Izquierdo, J.; Klix, A.; Kodeli, I.; Kuc, T.; Lilley, S.; Majerle, M.; Packer, L.; Pillon, M.; Pohorecki, W.; Snoj, L.; Villari, R.

P1-129 **Development on Nuclear Validation Facility and Test Platform for Fusion Reactor in China**

Huang, Q.; Zhu, Z.; Song, G.; Li, C.; Wu, Y.

P1-130 **Direct Measurements of Particle Flux along Gap Sides in Castellated Plasma Facing Components**

Dejarnac, R.; Sestak, D.; Terra, A.; Komm, M.; Gunn, J.; Schweer, B.; Moeller, S.; Martin, A.; Boizante, G.

P1-131 **Numerical Simulations on Natural Convective Heat Transfer and Active Cooling of IFMIF Test Cell**

Chen, Y.; Arbeiter, F.; Heinzl, V.; Kondo, K.; Mittwollen, M.; Tian, K.

P1-133 **Luminescence Qualification of Radiation Induced Damage and Thermal Recovery in Aluminas**

Malo, M.; Moroño, A.; Hodgson, E.

P1-134 **Asymmetry of Wendelstein 7-X magnet system introduced by torus assembly**

Fellinger, J.; Egorov, K.; Kallmeyer, J. P.; Bykov, V.; Schauer, F.

P1-135 **Development of a high resolution neutron spectroscopy system using a diamond detector and a remote digital acquisition methodology**

Pillon, M.; Andreoli, F.; Angelone, M.; Milocco, A.

P1-136 **TRIPOLI-4® Monte Carlo code ITER A-lite Neutronic Model Validation**

Jaboulay, J-C.; Cayla, P-Y.; Fausser, C.; Lee, Y-K.; Trama, J-C; Li-Puma, A.

P1-137 **Modeling of Hydrogen Isotope Retention in the Tungsten Divertor of EAST under different discharge operations**

Sang, C.; Sun, J.; Du, H.; Wang, D.

P1-138 **Radiation and momentum exchange in the divertor detachment induced by gas puffing: PIC-DSMC simulation**

Tang, T.; Sang, C.; Sun, J.; Wang, D.

P1-139 **Development of ITER IOIS Assembly Tool and Mock-up**
Nam, K.; Park, H.; Kim, D.; Kim, K.; Jung, S.; Ahn, H.; Watson, E.; Shaw, R.

P1-140 **Production and validation of a 3D-printed coil frame for the UST_2 modular stellarator**
Queral, V. M.

Topic I Repair and Maintenance

P1-141 **Concept design on RH maintenance of CFETR Tokamak Reactor**
Song, Y.; Wu, S.; Wan, Y.; Li, J.; Weng, P.; Ye, M.; Wu, W.; Zheng, J.; Liu, X.; Liu, S.; Cheng, Y.; Shen, G.; Yang, Y.; Lin, L.; Wei, J.; Xu, W.

P1-142 **Determination of capsule position by monitoring flow-rate in ITER neutron activation system**
Dang, J.-J.; Jo, J.-m.; Chung, K.-J.; Cheon, M. S.; Lee, H. G.; Bertalot, L.; Hwang, Y. S.

P1-143 **A three-layered model for generic description of remote handling maintenance tasks in supervisory control systems**
Zieba, S.; Russotto, F.-X.; Da Silva Simoes, M.; Measson, Y.

P1-144 **Implementation of Multibody analysis in the Verification and Validation process of ITER Remote Handling Systems**
Sibois, R.; Määttä, T.; Siuko, M.; Mattila, J.

P1-145 **Interactive Virtual Mock-ups for Remote Handling Compatibility Assessment of Heavy Components**
Van Oosterhout, J.; Heemskerk, C.J.M.; Koning, J.F.; Ronden, D.M.S.; de Baar, M.

P1-146 **TAO3: modular controller software for highly interoperable force feedback teleoperation**
Dionnet, F.; Da Silva Simoes, M.; Measson, Y.

P1-147 **Assessment of a Rate-Position Controller for Remote Handling in Nuclear Fusion Maintenance Tasks**
Suárez-Ruiz, F.; Breñosa, J.; Ferre, M.

P1-148 **Gripping tool for the ITER upper port plug RH extraction/insertion**
Rosa, E. V.; Ríos, L.

P1-149 **Software fault detection and recovery in critical real-time systems: an empirical study**
Alho, P.; Mattila, J.

P1-150 **Human-in-the-loop tele-operated maintenance: what can ITER learn from JET?**
Boessenkool, H.; Thomas, J.; Abbink, D.; Heemskerk, C.; de Baar, M.; Steinbuch, M.

P1-151 Reliability Requirements Management – addressing Remote Handling controller reliability via probabilistic methods

Väyrynen, J.; Alho, P.; Mattila, J.

P1-152 ITER EC H&CD Upper Launcher: Design Options and Remote Handling Issues of the Waveguide Assembly

Grossetti, G.; Aiello, G.; Chavan, R.; Geßner, R.; Goodmann, T.; Heemskerk, C.; Meier, A.; Ronden, D.; Scherer, T.; Schreck, S.; Späh, P.; Strauß, D.; Vaccaro, A.; Van Oosterhout, J.

P1-153 Evaluation of a reconfigurable Modular robot system for inspection and maintenance tasks in nuclear fusion facility

Pagala, P.; Ferre, M.; Aracil, R.

P1-154 Progress in the design of the ITER Neutral Beam Cell Remote Handling System

Van Uffelen, M.; Shuff, R.; Haist, B.; Damiani, C.; Choi, C-H; Tesini, A.

P1-155 Design of a MGy radiation tolerant resolver-to-digital converter IC for remotely operated maintenance in harsh environments

Leroux, P.; Van Uffelen, M.; Damiani, C.; Hamilton, D.

Topic L Fission-Fusion Synergy and Cross-Cutting Technologies

P1-156 MCNPX/ANSYS Fluent automatic coupling software

Fabbri, M.; Colomer, C.; Alemán, A.; Salellas, J.

P1-157 Conceptual Study of Fusion-Driven System for Nuclear Waste Transmutation

Hong, B. G.

P1-158 Rigorous 2-step shutdown dose rate calculation method based on mesh tally and its application to CLEAR-I

Zheng, J.; Zou, J.; Yang, Q.; Zeng, Q. and the FDS Team

P1-159 Integral neutron experiments for fusion -fission hybrid energy reactor

Li, M.; Liu, R.; Zhu, T.

P1-160 The Source Neutrons and Fuel Distribution Importance for Power Generation and Heat Transfer In Fusion-Fission Hybrids

Wójcik, G.; Taczanowski, S.

POSTER SESSION 2
Wednesday 18th September

11:00 – 13:00 Ground floor

Chairs: Kuteev, B.V and García, A.

Topic A First-Wall Technology and High Heat Flux Components

P2-002 Numerical Solutions for Liquid Metal MHD Flow in an L-Bend under a Uniform Magnetic Field

Jing, Z.; Chen, L.; Ni, M-J

P2-003 High heat flux testing of Normal Heat Flux First Wall (NHF FW) Mock-ups with calibrated defects

Bellin, B.; Banetta, S.; Zacchia, F.; Davydov, V.; Kuznetsov, V.; Rulev, R.; Eaton, R.; Mitteau, R.; Raffray, R.

P2-004 Study of laser-removal and structural changes of W:Al:C layer with Deuterium content

Kubkowska, M.; Kowalska-Strzeciwilk, E.; Gasior, P.; Skrzeczanowski, W.; Fortuna-Zalesna, E.; Grzonka, J.

P2-005 Stability of liquid metal thin film flow under varying heat load

Jakobs, M.; Jaspers, R.; Kamp, L.; Lopes Cardozo, N.

P2-006 Liquid Film First Wall Feasibility

Okino, E.; Noborio, K.; Kasada, R.; Konishi, S.

P2-008 Effect of induced damage on hydrogen isotope retention of F82H with impurity layer

Shinoda, N.; Yamauchi, Y.; Nobuta, Y.; Hino, T.

P2-009 Calorimetry and Electron Beam Control in Korea Heat Load Test Facility KoHLT-EB

Kim, S-K.; Jin, H. G.; Shin, K. I.; Choi, B. G.; Lee, E. H.; Yoon, J.-S.; Lee, D. W.; Park, C. K.; Cho, S.

P2-010 Underwater explosive welding of tungsten and reduced-activation ferritic steel F82H

Mori, D.; Kasada, R.; Konishi, S.; Morizono, Y.; Hokamoto, K.

P2-011 Progress in the design of Normal Heat Flux (NHF) First Wall panels

Dellopoulos, G.; Jimenez, M.; Cicero, T.; Banetta, S.; Bellin, B.; Zacchia, F.; Calcagno, B.; Chappuis, P.; Gicquel, S.; Mitteau, R.; Raffray, R.

P2-012 Characterization of HIP joints for ITER First Wall involving SS, Cu, CuCrZr and Be

Ordas, N.; Galarza, N.; Moreno, E.; Nation, P.; Iturriza, I.; Garcia-Rosales, C.; Guilemany, J. M.; Iliescu, S.; Báscones, A.; Samaniego, F.

- P2-014 A solution for operation embrittlement of tungsten components: tungsten fibre-reinforced tungsten**
Riesch, J.; Buffière, J-I.; Höschen, T.; Di Michiel, M.; Scheel, M.; Wurster, S.; Linsmeier, C.; You, J-H.
- P2-015 Progress in Development and Application of Lithium Based Components for Tokamak**
Vertkov, A.; Lyublinski, I.; Zharkov, M.; Semenov, V.; Azizov, E.; Mirnov, S.; Lazarev, V.; Kostina, A.
- P2-016 High heat flux PLIF facility for the first wall component test**
Wang, Z.; Song, Y.; Huang, S.
- P2-017 Manufacture of 14 First Wall Mock-ups with calibrated defects**
Bobin, I.; Boireau, B.; Cottin, A.; Burat, O.; Lepers, F.; Banetta, S.; Zaccchia, F.; Lorenzetto, P.
- P2-018 High Heat Flux Test of a Korea ITER TBM FW Mock-up**
Yoon, J. S.; Kim, S. K.; Lee, E. H.; Choi, B. G.; Shin, K. I.; Lee, D.W.; Cho, S.
- P2-019 Current Status of Structural Components Design of a Korean HCCR TBM in ITER**
Shin, K. I.; Lee, D. W.; Gon, J. H.; Lee, E. H.; Kim, S-K.; Yoon, J. S.; Ahn, M-Y.; Cho, S.
- P2-020 Comparison of hydrogen isotope retention for tungsten probes in LHD vacuum vessel during the experimental campaigns in 2011 and 2012**
Oya, Y.; Masuzaki, S.; Tokitani, M.; Kobayashi, M.; Taguchi, T.; Toda, K.; Uchimura, H.; Miura, R.; Yoshida, N.; Watanabe, H.; Yamauchi, Y.; Hino, T.; Miyamoto, M.; Hatano, Y.; Okuno, K.
- P2-021 Current Status of Plasma Facing Components for the WEST Project**
Missirlian, M.; Richou, M.; Firdaouss, M.; Hernandez, C.; Lipa, M.
- P2-022 Thermo-mechanical analysis of RMP coil system for EAST tokamak**
Wang, S.; Ji, X.; Song, Y.; Zhang, S.; Wang, Z.; Sun, Y.; Qi, M.; Liu, X.; Wang, S.; Yao, D.
- P2-023 Design of a monoblock type water cooled DEMO divertor using Eurofer as structural material**
Richou, M.; Li-Puma, A.
- P2-024 Mechanical properties of the advanced tungsten alloys**
Fukuda, M.; Saito, T.; Hasegawa, A.; Nogami, S.; Yabuuchi, K.; Muroga, T.

P2-025 Experimental Try-out of IR Thermography Method for Final Acceptance Tests of the ITER Divertor Dome

Tanchuk, V.; Grigoriev, S.; Makhankov, A.; Senik, K.; Yablokov, N.; Belenky, M.; Blinov, M.; Lebedev, M.; Fokin, B.

Topic B Blanket Technology

P2-026 Interaction of tritium and helium with lithium -lead eutectic under reactor irradiation

Tazhibayeva, I.; Kulsartov, T.; Kenzhin, E.; Zaurbekova, Z.; Ponkratov, Y.; Gordienko, Y.; Barsukov, N.; Tulubaev, E.

P2-027 Development of Lithium meta-titanate Ceramics pebbles for Indian LLCB TBM

Shrivastava, A.; Makwana, M.; Chaudhuri, P.; Rajendrakumar, E.

P2-028 Measurements of the purge helium pressure drop across pebble beds packed with lithium orthosilicate and glass pebbles

Abou-Sena, A.; Arbeiter, F.; Boccaccini, L.; Schindwein, G.

P2-029 A Neutron Poison Tritium Breeding Controller Applied to a HCPB Fusion Reactor Model

Morgan, L.; Packer, L.

P2-030 Optimised mass flow rate distribution analysis for cooling the ITER Blanket System

Pérez, G.; Mitteau, R.; Furmanek, A.; Martin, A.; Raffray, R.; Merola, M.

P2-031 Simple Thought Experiment to Examine Benchmark Performance for Fusion Nuclear Data

Murata, I.; Ohta, M.; Miyamaru, H.

P2-032 Mechanical Behaviors of FCI in Thermo-Magneto-Structure Coupling Field

Li, M-J.; Yu, X-G.; Ni, M-J.; Zhang, N-M.

P2-033 Electrical Connectors for Blanket Modules in ITER

Poddubnyy, I.; Danilov, I.; Calcagno, B.; Chappuis, P.; Khomiakov, S.; Kolganov, V.; Raffray, R.; Roccella, R.; Sadakov, S.; Ulrickson, M.

P2-034 Dynamic Analysis of the ITER Blanket Attachment System

Khomiakov, S.; Kolganov, V.; Poddubnyy, I.; Sadakov, S.; Vlasov, D.

P2-035 Ultrasonic Doppler Experimental Research of Gas Bubble Rising in Liquid Metal under a Strong Magnetic Field

Wang, Z. H.; Wang, S. D.; Meng, X.; Ni, M. J.

P2-036 MHD analysis of Lead lithium flow in a duct consisting of circular and square cross-sections under high magnetic field

Swain, P. K.; Tiwari, V.; Sahu, S.; Polepalle, S.; Bhattacharyay, R.; Patel, A.; Platacis, E.; Shisko, A.

P2-037 **Trapping of deuterium dissolved in fluidized Li by Y**
Fukada, S.; Hiromoto, T.; Shigeharu, S.; Sugie, K.; Edao, Y.

P2-038 **Liquid Metal MHD studies with non-magnetic and ferro-magnetic structural material**
Patel, A.

P2-039 **Progress in Engineering Design of Indian LLCB TBM Set for testing in ITER**
Chaudhuri, P.; Ranjithkumar, S.; Sharma, D.; Danani, C.; Swami, H. L.; Bhattacharay, R.; Rajendra, K. E.; Vyas, K. N.

P2-040 **In-situ impedance measurement of corrosion interface in liquid metals**
Kondo, M.; Suzuki, N.; Nakajima, Y.; Muroga, T.; Tanaka, T.

P2-041 **Structural Design and Thermal-Hydraulic Analysis of Liquid Lead-Lithium Tritium Breeder Blanket for China Fusion Engineering Testing Reactor**
Li, M.; Ni, M.; Lian, C.; Wang, W.; Jiang, J.; Zeng, Q.; Wu, Y.

P2-042 **Influence of surface condition on deuterium release from Li₂TiO₃ pebble**
Tsuchiya, A.; Hino, T.; Yamauchi, Y.; Nobuta, Y.; Akiba, M.; Enoeda, M.

P2-043 **MHD LiPb Flow and analysis of thermal stress of structure and First Wall in DLL Blanket**
Wang, H.; Tang, C.

P2-045 **Measurement of Hydrogen Isotope Concentration in Erbium Oxide Coatings**
Sato, R.; Chikada, T.; Matsuzaki, H.; Suzuki, A.; Terai, T.; Sugiyama, K.; Maier, H.

P2-046 **Neutronic assessment of a dual-coolant blanket design for DEMO**
Palermo, I.; Veredas, G.; Gómez-Ros, J. M.; Sanz, J.

P2-047 **Behaviour of the Pb-Li Eutectic Alloy Impurities by ICP-MS**
Conde, E.; Barrado, A.I.; Pascual, L.; Fernández, M.; Gómez de Salazar, J.M.; Barrena, M.I.; Quiñones, J.

P2-048 **Testing of Porous SiC With Dense Coating Under Relevant Conditions for Flow Channel Insert Application**
Bereciartu, A.; Ordas, N.; Garcia-Rosales, C.; Moroño, A.; Malo, M.; Hodgson, E.; Peñalva, I.; Alberro, G.; Abellà, J.; Colominas, S.; Sedano, L.

P2-050 **Interaction of titanium beryllide with steam at high temperatures**
Munakata, K.; Hara, K.; Akimoto, Y.; Takeda, H.; Wada, K.; Kim, J-H.; Nakamich, M.

P2-051 Determination of the protective atmosphere during the Pb-Li alloy fusion. Part I. Furnace atmosphere and temperature.

Pascual, L.; Barrena, M. I.; Gómez de Salazar, J.M.; Soria, A.; Fernández, M.; Conde, E.; Quiñones, J.

P2-052 Definition of the key parameter for production of eutectic Pb-Li alloys. Part II. Mass balance and temperature.

Pascual, L.; Barrena, M. I.; Gómez de Salazar, J. M.; Soria, A.; Fernández, M.; Conde, E.; Quiñones, J.

P2-053 Effect of post-weld heat treatment on irradiation hardening of the weld metal of low activation vanadium alloys

Kometani, N.; Nagasaka, T.; Hishinuma, Y.; Muroga, T.; Yoshiie, T.; Kubo, S.; Miyazawa, T.

P2-054 Loop heat pipes for energy conversion in fusion reactors

Dobran, F.

P2-055 First Wall Assembly Technologies of 1/3 Scale China Test Blanket Module

Huang, B.; Li, C.; Zhong, B.; Wu, Q.; Huang, Q.

P2-056 Neutronics analysis of the shielding performance of HCCB TBM

Li, Z.; Feng, K.; Zhao, F.; Wang, Q.

P2-057 Design Progress and Performance evaluation of a Korean HCCR TBM in ITER

Lee, D. W.; Jin, H. G.; Shin, K. I.; Lee, E. H.; Kim, S. K.; Yoon, J. S.; Ahn, M-Y.; Cho, S.

P2-058 Numerical Analysis of the Heat Transfer Coefficient for Blanket Shield Block by Simplified 3D Model

Jung, H-C.; Kim, D-H.; Kim, S-W.; Ha, M-S.; Heo, Y-G.; Ahn, H-J.; Lee, H-G.; Jung, K-J.

P2-059 Manufacturing and Testing of Full Scale Prototype for ITER Blanket Shield Block

Kim, S.-W.; Kim, D-H.; Jung, H-C.; Lee, S-K.; Park, H-K.; Kang, S-C.; Lee, D-H.; Zhang, F.; Kim, B-Y.; Ahn, H-J.; Lee, H. G.; Jung, K-J.

Topic C Fuel Cycle and Tritium Processing

P2-060 Numerical modelling of a tapered Holweck vacuum pump via linear kinetic theory

Naris, S.; Tantos, C.; Valougeorgis, D.; André, J.; Millet, F.; Perin, J. P.

P2-061 Design and development of hydrogen isotope sensor in liquid Pb-Li

Sircar, A.; Sharma, S. K.; Patel, R. B.; Rayjada, P. A.

P2-062 Design and R&D Activities of TriPla-CA Consortium in support of ITER Tritium Plant development

Cristescu, I.; Ana, G.; Michling, R.; Petrutiu, C.; Pinna, T.; Stefanescu, A.; Welte, S.

P2-064 DINS method for diagnosing fuel retention in plasma facing components

Perelli, E.; Gorini, G.; Tardocchi, M.; Pietropaolo, A.

P2-066 Design Concept of the ITER SDS Getter Bed

Yun, S-H.; Kang, H-G.; Chang, M.; Cho, S.; Lee, H. G.; Jung, K. J.; Chung, H.; Sohn, S-H.; Song, K-M.; Camp, P.; Willms, S.; Glugla, M.

P2-067 Direct Measurement of Tritium Production Rate in LiPb with removed parasitic activities: preliminary experiments.

Pohorecki, W.; Kuc, T.; Ostachowicz, B.

P2-068 R&D on Hydrogen in the Liquid Lithium Loop for TechnoFusion

González-Del Moral, O.; Moral Fernández, N.; Álvarez Ruiz, J.; García, A.; Casal, N.; Abánades, A.; Ibarra, A.; Perlado, J. M.

P2-069 Separation of fuel and Impurity particles using divertor simulator TPD-Sheet IV

Maekawa, T.; Tanaka, S.; Iijima, T.; Hagiwara, S.; Tonegawa, A.; Sato, K.; Kawamura, K.

Topic D Material Engineering for FNT**P2-070 TEM Characterization of He Effects in First-Wall Structural Materials Under Fusion Relevant Conditions**

Kurtz, R.; Yao, B.; Edwards, D.

P2-071 Depth-dependent nanoindentation hardness of reduced-activation ferritic steels after MeV Fe-ion irradiation

Kasada, R.; Konishi, S.; Ando, M.; Hamaguchi, D.; Tanigawa, H.

P2-072 Diffusion Bonding of 9Cr ODS Ferritic/martensitic Steel with the Phase Transformation

Noh, S.; Kimura, A.; Choi, B.; Kang, S-H; Han, C-H.; Kim, K-B.; Kim, T. K.

P2-073 Fatigue Property Change of Pure Tungsten Due to Heat Treatment

Nogami, S.; Iwata, T.; Fukuda, M.; Kurishita, H.; Hasegawa, A.; Yabuuchi, K.

P2-074 Selection of technology manufacturing ITER blanket modules flexible attachment from Ti-6Al-4V alloy

Rodchenkov, B.; Strebkov, Y.; Evseev, M.; Shushlebin, V.; Sinelnikov, L.

P2-075 Numerical study of the flow conditioner for the IFMIF liquid lithium target

Gordeev, S.; Heinzl, V.; Stieglitz, R.

- P2-076 Neutronic analysis for the IFMIF EVEDA Reference Test Cell and Test Facility**
Kondo, K.; Arbeiter, F.; Fischer, U.; Große, D.; Heinzl, V.; Klux, A.; Lu, L.; Mittwollen, M.; Serikov, A.; Tian, K.; Weber, V.
- P2-077 Microstructural studies and surface analysis of laser irradiated in-situ Co-TiC composites.**
Kowalska-Strzeciwlk, E.; Strzeciwlk, D.; Kubkowska, M.; Skrzeczanowski, W.; Figacz, W.
- P2-078 Stress envelope of silicon carbide composites at elevated temperatures**
Nozawa, T.; Ozawa, K.; Tanigawa, H.
- P2-079 Fabrication and Characterization of Reference 9Cr and 12Cr-ODS Low Activation Ferritic/Martensitic Steels**
Muroga, T.; Nagasaka, T.; Li, Y.; Abe, H.; Ukai, S.; Kimura, A.; Okuda, T.
- P2-080 Effect of potential factors in manufacturing process on mechanical properties of F82H plate**
Sakasegawa, H.; Tanigawa, H.; Tanigawa, H.; Hirose, T.
- P2-081 Blanket material and technology developments toward DEMO under the Broader Approach framework**
Nishitani, T.; Yamanishi, T.; Tanigawa, H.; Nakamichi, M.; Nozawa, T.; Hoshino, T.
- P2-082 Effect of Laser Beam Position on Mechanical Properties of F82H/SUS316L Butt-Joint Welded By Fiber Laser**
Serizawa, H.; Mori, D.; Ogiwara, H.; Mori, H.
- P2-083 Overview of the Ceramic Breeder Materials Development**
Chen, X.; Peng, S.; Xiao, C.; Gao, X.
- P2-084 Influence of Cr Content On the Diffusive Transport Parameters and Trapping of Hydrogen in Fe Alloys**
Peñalva, I.; Alberro, G.; Legarda, F.; Ortiz, C. J.; Vila, R.
- P2-085 Annealing behavior of heavily neutron-irradiated beta-SiC on swelling and thermal diffusivity**
Akiyoshi, M.; Yano, T.; Tachi, Y.
- P2-086 First principles modelling of the initial steps of the ODS particle formation process in the alpha-Fe lattice.**
Mastrikov, Y.; Vladimirov, P.; Borodin, V.; Gopejenko, A.; Zhukovskii, Y.; Kotomin, E.; Möslang, A.
- P2-087 Observation of the Li target in the EVEDA Li Test Loop**
Kondo, H.; Kanemura, T.; Furukawa, T.; Hirakawa, Y.; Groeschel, F.; Wakai, E.

Topic E Vacuum Vessel

P2-088 **Gas Exchange Processes on Stainless Steel Vessel Wall due to Interaction with Oxygen Contaminated Hydrogen Plasma.**

Begrambekov, L.; Grunin, A.; Ermakov, V.; Kaplevsky, A.; Sadovsky, Y.; Shigin, P.; Vergasov, S.

P2-089 **Ultrasonic Examination Feasibility Study for ITER Vacuum Vessel from Korea Domestic Agency**

Lee, Y. J.; Kim, B. C.; Hong, K. H.; Kim, H. S.; Park, C. K.; Kim, G. H.; Ahn, H. J.; Jung, Y. H.; Sa, J. W.; Choi, C. H.

P2-090 **Thermocouple fixation and High Heat Flux Test on the ITER Neutral Beam Duct Liner mock-up**

Park, C. K.; Kim, H. S.; Kim, G. H.; Lee, Y. J.; Kim, B. C.; Ahn, H. J.; Kim, S. K.; Lee, D. W.; Urbani, M.

P2-091 **Multi-Scenario Evaluation, Specification and Comparison of Electromagnetic Loads on ITER Vacuum Vessel**

Rozov, V.; Martinez, J-M.; Portafaix, C.; Sannazzaro, G.

P2-092 **Design and fabrication of the ITER thermal shield**

Her, N.; Hamlyn-Harris, C.; Le Barbier, R.; Utin, Y.; Choi, C-H.; Sborchia, C.; Chung, W.; Nam, K.; Noh, C. H.; Kang, D. K.; Kang, K-O.

P2-093 **Thermal-hydraulic analysis of ITER Vacuum Vessel Field Joints**

Savoldi, L.; Bonifetto, R.; Corpino, S.; Izquierdo, J.; Le Barbier, R.; Utin, Y.; Zanino, R.

P2-094 **Status of the ITER Vacuum Vessel Construction**

Choi, C. H.; Alekseev, A.; Sborchia, C.; Ioki, K.; Giraud, B.; Utin, Yu.; Sa, J.W.; Wang, X.; Barabash, V.; Vertongen, P.; Jucker, P.; Bayon, A.; Pathak, H.; Raval, J.; Ahn, H.J.; Kim, B.C. ; Kuzmin, E.; Savrukhin, P.

P2-095 **Mechanical Testing of the ITER Vacuum Vessel Support Structure - Coating Screening Tests and High Load Multi-Axial Mock Up Tests**

Zauner, C.; Reindl, M.; Le Barbier, R.; Choi, C. H.; Ahn, H-J.

P2-096 **Structural Analysis of the ITER Vacuum Vessel regarding 2012 ITER Project-Level Loads**

Martinez, J-M.; Choi, C-H.; Ioki, K.; Jun, C. H.; Portafaix, C.; Sborchia, C.; Cambazar, M.; Corti, P.; Pinori, K.; Sfarni, S.; Tailhardat, O.; Borrelly, S.; Albin, V.; Pelletier, N.

P2-097 **F4E strategy for the electromagnetic analysis of ITER components**

Testoni, P.; Cau, F.; Portone, A.; Albanese, R.; Guirao, J.

P2-098 Structural Response of ITER Vacuum Vessel to Combustion Pressure Loads

Kuznetsov, M.; Xiao, J.; Jordan, T.

P2-099 Thermo-structural optimization of the ITER ICRH Four Port Junction and Straps against in-vessel design criteria

Lafuente, A.; Fursdon, M.; Shannon, M.

Topic F Nuclear System Design

P2-101 ITER Components Cooling: Satisfying the Distinct Needs of Systems and Components

Ployhar, S.; Gopalapillai, B.; Teodoros, L.; Dell Orco, G.; Kumar, A.; Gupta, D.; Patel, N.; Jadhav, M.

P2-103 Nuclear Analysis and Shielding Optimisation in Support of the ITER In-Vessel Viewing System Design

Turner, A.; Ghani, Z.; Hurst, G.; Lo Bue, A.; Mangham, S.; Pampin, R.; Puiu, A.; Zheng, S.

P2-104 RF coupler tests of the prototype RFQ linac for the IFMIF/EVEDA project

Maebara, S.; Palmieri, A.; Mereu, P.; Ichikawa, M.; Takahashi, H.; Comunian, M.; Suzuki, H.; Pisent, A.; Sugimoto, M.

P2-105 The simulation of seismic analysis for ITER fourth PF (Poloidal Field Coil) feeder

Liu, S.; Chen, W.; Song, Y.; Ni, X.; Wang, Z.; Chen, Y.; Gong, C.

P2-106 Neutronic Analyses for the ITER electron cyclotron-heating upper launcher

Weinhorst, B.; Serikov, A.; Fischer, U.; Spaeh, P.; Strauss, D.

P2-107 Improved Algorithms and Advanced Features for the CAD to MC conversion tool McCad

Lu, L.; Pereslavytsev, P.; Fischer, U.

P2-108 Neutronic analyses of the HCPB DEMO reactor using a consistent integral approach

Pereslavytsev, P.; Fischer, U.; Lu, L.

P2-109 Shut-Down Dose Rate Analysis for ITER Diagnostic Equatorial and Upper Ports

Serikov, A.; Bertalot, L.; Fischer, U.; Pitcher, C. S.; Suarez, A.; Udintsev, V. S.; Weinhorst, B.

P2-110 An Exploratory Study on the Engineered Safety Features of a Fusion DEMO Plant

Kim, H. J.; Chung, B-D.; Hwang, Y.

P2-112 Effect of the Impurity on the Activation Analysis for the Korean HCCR TBM

Lee, C-W.; Ahn, M-Y.; Park, Y-H.; Lee, Y-O.; Lee, D. W.; Cho, S.; Kim, H. I.; Kim, J. W.

Topic G Safety Issues and Waste Management

P2-113 MFM-Based Diagnostic Technology for ITER DFLL-TBM System

Run, Y.; Liqin, H.; Muiyi, N.; Rongxiang, H.; Dagui, W.

P2-114 Evaluation of the neutron activation of JET in-vessel components following D-T irradiation

Vuolo, M.; Bonifetto, R.; Dulla, S.; Heinola, K.; Lengar, I.; Ravetto, P.; Savoldi Richard, L.; Villari, R.; Widdowson, A.; Zanino, R. and JET EFDA Contributors*

P2-115 Tritium and Heat Management in ITER Test Blanket Systems Port Cell for Maintenance Operations

Giancarli, L.; Cortes, P.; Iseli, M.; Le Petit, L.; Levesy, B.; Livingston, D.; Nevrière, J-C.; Pascal, R.; Ricapito, I.; Shu, W.; Wyse, S.

P2-116 Little Tritium Extraction System Pipe Break Environmental Impact by Atmospheric Modelling of Elemental Tritium Gas and HTO Transport

Castro, M. P.; Velarde, M.; Ardao, J.; Perlado, J. M.; Sedano, L. A.

P2-118 Visualized Nuclear and Radiation Safety Simulation Program and Its Application to Fusion and Fission

He, T.; Shang, L.; Zhou, S.; Zhao, J.; Zhang, S.; Li, T.; Yang, Z.; Cheng, X.; Yang, Q.; Dang, T.; Zou, J.; Zeng, Q.; Long, P.; Hu, L.; Wu, Y. and the FDS Team

P2-119 Safety managements of the IFMIF/EVEDA accelerator building

Takahashi, H.; Maebara, S.; Kojima, T.; Narita, T.; Tsutsumi, K.; Sakaki, H.

P2-120 Sensitivity study for a TES pipe rupture accident inside port cell

Jin, H. G.; Ahn, M-Y.; Cho, S.; Lee, D. W.; Lee, E. H.; Kim, S. K.; Yoon, J. S.

P2-121 Study on Safety Requirements of Korean Fusion DEMO Plant using Integrated Safety Assessment Methodology

Oh, K.; Kang, M.-S; Heo, G.; Kim, H-C.

P2-122 ITER Safety Studies: The effect of two simultaneous perturbations during a Loss of Plasma Control Transient

Rivas, J. C.; Dies, J.

P2-123 Neutron shielding and activation of the MASTU device and surrounds

Taylor, D.; Lilley, S.; Turner, A.; Davis, A.

Topic H Models and Experiment for FNT

P2-125 **Characterization of MHD mixed-convection flows in a vertical rectangular duct with volumetric heating**

Vetcha, N.; Smolentsev, S.; Abdou, M.

P2-126 **Experimental Validation of the ITER Blanket Attachments**

Kolganov, V.; Danilov, I.; Kalinin, G.; Khomiakov, S.; Poddubnyy, I.; Parshutin, E.; Raffray, R.; Sadakov, S.; Chappuis, P.; Vlasov, D.; Zhmakin, A.

P2-127 **Safety analyses in support of neutron detector calibration operations**

Stankunas, G.; Syme, B.; Popovichev, S.; Conroy, S.; Batistoni, P. and JET EFDA Contributors

P2-128 **Development of Compact D-D Neutron Generator**

Das, B.; Shyam, A.; Das, R.; Rao, A.; Durga P.

P2-129 **Parametrization of radiative properties of ICF mono- and multi-component plasmas**

Espinosa, G.; Rodríguez, R.; Gil, J. M.; Florido, R.; Rubiano, J.; Mendoza, M. A.; Martel, P.; Mínguez, E.

P2-130 **Benchmarking of SuperMC2.0 with Fusion-Driven Subcritical System**

Zheng, H.; Sun, G.; Song, J.; Hao, L.; Chen, Z.; Li, G.; Wu, M.

P2-131 **Support of Repeated Structure For Automatic Neutronics Modeling**

Gan, Q.; Wang, G.; Yu, S.; Wang, D.; Long, P.; Xiong, J.; Wu, Y. and FDS Team

P2-133 **Benchmark Experiment on Titanium with DT Neutron at JAEA/FNS**

Ohta, M.; Takakura, K.; Ochiai, K.; Sato, S.; Konno, C.

P2-134 **Effect of impurities on vacancy migration energy in Fe-based alloys**

Hashimoto, N.; Tanimoto, J.; Ohnuki, S.

P2-135 **Conceptual design of a helium heater for high temperature applications**

Jin, X. Z.; Chen, Y.; Ghidrsa, B-E.

P2-136 **Study of the sensitivity of a Cerenkov Fibre Optics Sensor (C-FOS) in the IFMIF Test Cell**

Rapisarda, D.; Gómez-Ros, J. M.; Mota, F.; García, A.; Gouat, P.; Leysen, W.; Mas, A.; Mollá, J.; Ibarra, A.

P2-137 **Design prospect of remountable high-temperature superconducting magnet**

Hashizume, H.; Ito, S.

P2-138 **Molecular dynamics simulations to evaluate the nano-mechanism responsible for irradiation hardening in alpha-iron**
Okita, T.; Fujita, S.; Itakura, M.

P2-139 **Verification of the displacement damage processes by STM observation at atomistic spatial resolution**
Hirabayashi, J.; Sato, M.; Okita, T.

Topic I Repair and Maintenance

P2-140 **Development of a brazing connector for DEMO in-vessel components**
Fernández, I.; Rosa, E. V.; Palermo, I.

P2-141 **Maintenance Duration Estimate for a Fusion Power Plant based on the EFDA DEMO 2012 design concept**
Crofts, O.; Harman, J.

P2-142 **Concept for a Vertical Maintenance Remote Handling System for Multi Module Blanket Segments in DEMO**
Coleman, M.; Sykes, N.; Loving, A.; Harman, J.

P2-143 **Progress in the design, R&D and procurement preparation of the ITER Divertor Remote Handling System**
Esque, S.; Van Hille, C.; Damiani, C.; Ranz, R.; Palmer, J.; Hamilton, D.

P2-144 **DEMO Active Maintenance Facility Progress 2012**
Thomas, J.; Loving, A.; Crofts, O.; Morgan, R.; Harman, J.

P2-145 **ITER divertor Thomson scattering system: in-vessel movements and remote handling kinematics**
Kochergin, M.; Mukhin, E.; Safronov, A.; Razdobarin, A.; Semenov, V.; Tolstyakov, S.; Kurskiev, G.; Masyukevich, S.; Bukreev, I.; Chernakov, P.; Litvinov, A.; Koval, A.; Vecherkovsky, A.; Egorov, P.; Walsh, M.; Andrew, P.

P2-146 **Design of the remote handling equipment for the refurbishment of the European target assembly design for IFMIF**
Miccichè, G.; Lorenzelli, L.; Bernardi, D.; Frascati, F.; Becchi, F.

P2-147 **Hardware availability calculations and results of the IFMIF accelerator facility**
Bargalló, E.; Arroyo, J. M.; Abal, J.; Beauvais, P-Y.; Gobin, R.; Orsini, F.; Weber, M.; Podadera, I.; Grespan, F.; Fagotti, E.; Dies, J.; Tapia, C.; De Blas, A.; Molla, J.; Ibarra, A.

P2-148 **RAMI status in the IFMIF Test Facilities at the end of the engineering design phase**
Abal, J.; Dies, J.; Arroyo, J. M.; Bargalló, E.; García, A.; Casal, N.; Mas, A.; Tapia, C.; De Blas, A.; Molla, J.; Ibarra, A.

P2-149 Availability simulation software adaptation to the IFMIF accelerator facility RAMI analysis

Bargalló, E.; Sureda, P. J.; Arroyo, J. M.; Abal, J.; De Blas, A.; Dies, J.; Tapia, C.; Molla, J.; Ibarra, A.

P2-150 Improving the performance of DTP2 bilateral teleoperation control system with haptic augmentation

Viinikainen, M.; Tuominen, J.; Mattila, J.

P2-151 Design of Structural Components for the helical DEMO reactor FFHR-d1

Tamura, H.; Goto, T.; Tanaka, T.; Masuzaki, S.; Yanagi, N.; Miyazawa, J.; Sagara, A.

P2-152 A R&D program on Leak localization concepts for actively cooled fusion machines

Durocher, A.; Bruno, V.; Chantant, M.; Gargiulo, L.; Hatchressian, J-C.; Houry, M.; Mouyon, D.; Anthoine, D.

P2-153 RAMI analysis in IFMIF remote handling operations

Abal, J.; Dies, J.; Baeza, E.; Arroyo, J. M.; Bargalló, E.; García, A.; Tapia, C.; De Blas, A.; Molla, J.; Ibarra, A.

P2-154 Test of the Piezoceramic Motor Technology in ITER Relevant High Magnetic Fields

Monti, C.; Besi, U.; Mugnaini, G.; Neri, C.; Rossi, P.; Dubus, G.; Damiani, C.

Topic J Burning Plasma Control and Operation**P2-155 Plasma current sustainment after iron core saturation in the STOR-M tokamak**

Mitarai, O.; Ding, Y.; Hubeny, M.; Lue, Y.; Onchi, T.; McColl, D.; Xiao, C.; Hirose, A.

P2-157 Consequences of plasma disruption mitigation by massive gas injection on the ITER torus cryopumping system

Scannapiego, M.; Day, C.; Hauer, V.

P2-158 Numerical simulation of ELMy H-mode in EAST using SOLPS

Du, H.; Sang, C.; Wang, L.; Sun, J.; Wang, D.

P2-159 Conceptual design of dc power system for superconducting magnet of helical DEMO reactor FFHR-d1

Chikarashi, H.; Goto, T.; Sagara, A.; FFHR Design Group

P2-160 Upgrade of the IR thermography diagnostic for the WEST project

Courtois, X.; Aumeunier, M-H.; Joanny, M.; Balorin, C.; Jouve, M.; Micolon, F.; Salasca, S.

P2-161 Neutronic Analysis for design of ITER IR thermography
Ishikawa, M.; Shimada, T.; Takeuchi, M.; Sugie, T.

P2-162 Matrix Converter Design for Feedback Stabilization of Vertical Position Instability on QUEST

Nakamura, K.; Fujita, H.; Liu, X.; Xue, E.; Mitarai, O.; Hasegawa, M.; Tokunaga, K.; Zushi, H.; Hanada, K.; Fujisawa, A.; Matsuoka, K.; Idei, H.; Nagashima, Y.; Kawasaki, S.; Nakashima, H.; Higashijima, A.

P2-163 Projection of foreseeable integrated plasma performance to DEMO

Sakamoto, Y.; Nakamura, M.; Tobita, K.; Asakura, N.; Hoshino, K.; Utoh, H.; Someya, Y.

POSTER SESSION 3**Thursday 19th September**

16:00- 18:00 Ground floor

Chairs: Konishi, S. and Sanmartí, M.**Topic A First-Wall Technology and High Heat Flux Components****P3-001 Hydrogen Retention in Plasma Facing Materials: The Influence of Material Microstructure**Panizo, M.; Gordillo, N.; Munnik, F.; Saravanan, K.; Tejado, E.; Pastor, J. Y.; Perlado, J. M.; Gonzalez, R.**P3-002 Study of experimental simulations for the closed divertor using divertor simulator TPD-Sheet IV**Kobayashi, H.; Tanaka, S.; Iijima, T.; Tonegawa, A.; Kawamura, K.; Sato, K.**P3-003 Deflection of a liquid metal jet in a tokamak environment**Pelekasis, N.; Gomes, R.**P3-005 Operational impact on the JET ITER-like wall in-vessel components**Riccardo, V.; Arnoux, G.; Collins, S.; Lomas, P.; Matthews, G.; Pace, N.; Thompson, V.**P3-007 The Remote Handling Compatibility Analysis of the ITER Generic Upper Port Plug structure**Ronden, D.; Elzendoorn, B.; Goodman, T.; Grossetti, G.; Heemskerk, C.; Van Oosterhout, J.; Spaeh, P.; Schreck, S.; Strauss, D.**P3-008 Preliminary results on tungsten tile test in KSTAR**Hong, S-H.; Bang, E-N.; Litnovsky, A.; Hellwig, M.; Seo, D-C.; Lho, T.**P3-009 Measurement and calculations of long-lived radionuclide activity forming in the fast neutron field in ITER vacuum vessel composites**Pohorecki, W.; Jodlowski, P.; Pytel, K.; Prokopowicz, R.**P3-010 Comparison between FEM and High Heat Flux Thermal Fatigue Testing results of ITER Divertor Plasma Facing mock-ups**Crescenzi, F.; Roccella, S.; Visca, E.**P3-011 Development of a Plasma Driven Permeation Experiment for TPE**Buchenauer, D.; Kolasinski, R.; Shimada, M.; Donovan, D.; Youchison, D.; Merrill, B.**P3-012 Quality Evaluation of Hip Joints Using Ultrasonic Technique**Galarza, N.; De Miguel, D.; Ordas, N.; Rubio, B.; Iturriza, I.; Moreno, E.; Gorrotxategi, A.; Nation, P.; Guilemany, J. M.; Samaniego, F.

P3-013 Modeling First Wall Mechanical Fracture due to Thermal Shocks Using X-FEM

Garoz Gómez, D.; Rivera, A.; González-Arrabal, R.; Álvarez, J.; Perlado, J. M.

P3-016 First wall design for compact tokamak – neutron source.

Shpanskiy, Y.; Kilischenko, A.; Kuteev, B.; Petrov, V.

P3-017 Tracer Techniques in the Assessment of Erosion and Property Modification of Plasma-Facing Components

Rubel, M.; Petersson, P.; Möller, S.; Garcia-Carrasco, A.; Ivanova, D.; Brezinsek, S.; Coenen, J.; Kreter, A.; Philipps, V.; Wauters, T.

P3-020 Defect Evolution In Tungsten Under Helium Irradiation: A Comparison With Experimental Results.

Valles, G.; Martín-Bragado, I.; González-Arrabal, R.; Gordillo, N.; Caturla, M. J.; Perlado, J. M.; Rivera, A.

P3-021 Impact of repeated high heat loading on surface modification of tungsten materials

Tokunaga, K.; Ukita, T.; Araki, K.; Fujiwara, T.; Miyamoto, Y.; Hasegawa, M.; Nakamura, K.; Kurishita, H.

P3-023 Effect of transient heating loads on beryllium

Kupriyanov, I.; Porezanov, N.; Nikolaev, G.; Kurbatova, L.; Podkovyrov, V.; Muzichenko, A.; Zhitlukhin, A.; Khimchenko, L.; Gervash, A.

P3-024 Development of Materials for the First Wall of a Nuclear Fusion Reactor

Garoz, D.; Fernández-Martínez, I.; González-Arrabal, R.; Rivera, A.; Gordillo, N.; Panizo-Laiz, M.; Vallés, G.; Briones, F.; Perlado, J. M.

P3-025 Status of the IDTF high-heat-flux test facility

Kuznetsov, V.; Gorbenko, A.; Davydov, V.; Kokoulin, A.; Komarov, A.; Mazul, I.; Mudygin, B.; Ovchinnikov, I.; Stepanov, N.; Rulev, R.; Volodin, A.

P3-026 Computational Methodology For Study Nuclear Fusion Materials And Systems

Garoz, D.; Guerrero, C.; del Río, E.; Cereceda, D.; Prada, A.; Rivera, A.; Fraile, A.; Valles, G.; Moral, N.; Alvarez, J.; Juárez, R.; Sánchez, C.; Sanz, J.; Páramo, A.; Sordo, F.; Perlado, J. M.

Topic B Blanket Technology

P3-027 Numerical study of the MHD flow characteristics in a three-surface-multi-layered channel with different inlet conditions

Aoyagi, M.; Ito, S.; Hashizume, H.

P3-028 Fabrication and characteristics of SiC-coated graphite pebbles for HCCR TBM

Lee, Y.; Yun, Y-H.; Park, Y-H.; Ahn, M-Y.; Cho, S.

P3-029 Evaluation of the Response Time of H-Concentration Probes for Tritium Sensors

Abella, J.; Colominas, S.; Llivina, L.

P3-030 Development of a Hydrogen Permeation Sensor for Future Tritium Applications

Colominas, S.; Abella, J.; Llivina, L.

P3-031 Current Status of Accident Analysis for Korean HCCR TBS

Ahn, M.-Y.; Jin, H. G.; Cho, S.; Lee, D. W.; Ku, D. Y.; Park, Y.-H.; Kim, C.-S.

P3-032 Analysis of Electromagnetic Loads on EU-DEMO Inboard and Outboard Blanket Vertical Segments

Maione, I. A.; Vaccaro, A.

P3-033 On the numerical assessment of the thermo-mechanical performances of the DEMO Helium-Cooled Pebble Bed breeding blanket module

Di Maio, P. A.; Arena, P.; Boccaccini, L. V.; Bongiovì, G.; Carloni, D.; Giammusso, R.; Kecskes, S.

P3-034 Study on effect of moderating materials on Tritium Production Rate in IN-LLCB TBM

Gathibandhe, M.; Goverdhan, P.; Vyas, K.; Danani, C.

P3-035 Neutronics of LiPb blanket and design and evaluation of integral experiment with D-D neutrons

Kwon, S.; Sato, S.; Kasada, R.; Konishi, S.

P3-036 Influence of chemisorption products of carbon dioxide on radiolysis of tritium breeding ceramic

Zarins, A.; Kizane, G.; Knitter, R.; Supe, A.

P3-037 Gas Absorption and Discharge Behaviors of Lithium-lead

Sakabe, T.; Kunugi, T.; Yokomine, T.; Kawara, Z.; Ueki, Y.

P3-038 Numerical Simulation of Buoyancy Effects of MHD Flow for ITER SLL-TBM

Meng, Z.; Zhou, T.; Zhang, H.; Chen, H. and FDS Team

P3-039 Heat load test with the HCCR TBM first wall mock-up and the GAMMA-FR code validation

Lee, E. H.; Jin, H. G.; Kim, S.-K.; Yoon, J. S.; Lee, D. W.; Cho, S.

P3-040 First-principles study of hydrogen adsorption and permeation in the reconstructed cubic erbium oxide surfaces

Mao, W.; Chikada, T.; Shimura, K.; Suzuki, A.; Terai, T.

P3-041 Visualization Experiment of Complex Flow Field in a Sphere-packed Pipe by Detailed PIV measurement

Ebara, S.; Nematollahi, M. R.; Hashizume, H.

- P3-042 Rational of Helium Cooled Pebble Bed Blanket and R&D Activities**
Carloni, D.; Boccaccini, L. V.; Franza, F.; Kecskes, S.
- P3-043 Engineering analyses of ITER divertor Thomson scattering**
Nemov, A.; Modestov, V.; Borovkov, A.; Kochergin, M.; Mukhin, E.; Litvinov, A.; Koval, A.; Andrew, P.
- P3-044 Ceramic breeder for fusion nuclear reactors: thermo-mechanical tests on pebble beds**
Aquaro, D.; Lo Frano, R.; Baudanza, V.
- P3-045 Effect of Electromagnetic Coupling on MHD Flow in the Manifold of Fusion Liquid Metal Blanket**
Chen, H.; Zhou, T.; Zhang, H.; Meng, Z.; Wu, Y. and FDS Team
- P3-046 Progress on a coupled Systems Code-CFD MHD solver for fusion blanket design**
Wolfendale, M.
- P3-047 Design and Setup of a Testing Device to investigate a reduced sized attachment system mock up for the ITER EU HCPB-TBM under different mechanical loading conditions**
Zeile, C.; Maione, I. A.
- P3-048 Construction of PREMUX and preliminary experimental results, as preparation for the Helium Cooled Pebble Bed Breeder Unit mock-up testing**
Hernandez, F.; Kolb, M.; Annabattula, R.; Schindwein, G.; Von der Weth, A.
- P3-049 Evaluation of hydrogen isotope absorption/diffusion coefficient of CVD-SiC in high temperature**
Yamamoto, Y.; Karasawa, T.; Takemoto, S.; Noborio, K.; Konishi, S.
- P3-050 Tritium management issues and anti-permeation strategies for different DEMO breeder blanket options**
Demange, D.; Boccaccini, L.; Franza, F.; Santucci, A.; Tosti, S.; Wagner, R.
- P3-051 Experimental study of instabilities in a quasi-2D MHD duct flow with near-wall jets**
Young, J.; Smolentsev, S.; Abdou, M.
- P3-052 Characterizing Pressure Equalization in MHD Flow in a Rectangular Duct with an Insulating Flow Channel Insert**
Sutevski, D.; Smolentsev, S.; Abdou, M.
- P3-053 Design and Construction of a Multipurpose Laboratory Scale Apparatus to Investigate Hydrogen Isotopes Behaviour In Pb15.7li and Permeation Technology**
Aiello, A.; Utili, M.; Storai, S.; Desideri, F.; Bettocchi, N.

P3-054 Burnup analysis and fissile fuel breeding with a Uranium-Plutonium cycle in the molten salt blanket in a FFHR

Zhao, J.; Yang, Y.; Xiao, S.; Zhou, Z.

P3-055 Development of the breeding blanket and shield model for the fusion power reactors system SYCOMORE

Li Puma, A.; Jaboulay, J. C.

P3-056 Parametrical analysis of HCLL and HCPB TBM tritium transfer model with TMAP7

Moreno, C.; Herrera, C.; Martínez, P. M.; Ibarra, A.

P3-057 Development of an HCLL TBM Configuration And Ancillary Systems Dynamic Transfer Model with ECOSIMPRO®

Serna, J.; Rueda, A.; Moreno, C.; Martínez, P. M.; Ricapito, I.; Calderoni, P.

P3-058 Modelling a supercritical CO2 power cycle for nuclear fusion reactors using RELAP5-3D®

Batet, L.; Alvarez Fernandez, J. M.; Mas de les Valls, E.; Perez, M.; Reventos, F.; Sedano, L. A.

P3-059 Hydrogen solubility in liquid lithium-sodium alloy

Yagi, J.; Tanaka, T.; Muroga, T.; Sagara, A.

P3-061 Analysis of the thermo-mechanical behaviour of the DEMO Water-Cooled Lithium Lead breeding blanket module

Chiovaro, P.; Di Maio, P. A.; Aiello, A.; Arena, P.; Bongiovì, G.; Giannusso, R.; Li Puma, A.

Topic C Fuel Cycle and Tritium Processing

P3-062 Alternative Analysis for Fuel Storage and Delivery in the ITER Tritium Plant

Chang, M. H.; Yun, S-H.; Kang, H-G.; Cho, S.; Song, K-M.; Kim, D.; Chung, H.; Camp, P.; Willms, S.; Glugla, M.

P3-063 Tritium Transport Modelling of Libretto-4 & 5 Transients

Martínez, P.; Moreno, C.; Magielsen, L.; Ibarra, A.

P3-064 Hydrogen extraction characteristics of high-temperature proton conductor ceramics for hydrogen isotopes purification and recovery

Xia, T.; He, C.; Yang, H.; Zhao, W.; Yang, L.; Liu, Z.

P3-065 Towards a physics-integrated view of the fusion fuel cycle

Day, C.; Hauer, V.; Igitkhanov, J.; Kalupin, D.; Valovic, M.; Varoutis, S.

P3-066 Research activities related to water detritiation at ICIT Rm. Valcea

Zamfirache, M.; Bornea, A.; Stefanescu, I.; Varlam, C.; Bidica, N.

P3-067 Tritium Removal Facility for processing of a large range tritiated water waste

Bornea, A.; Zamfirache, M.; Stefanescu, I.; Stefan, L.

P3-068 High gain and frequency ultra-stable integrators for long pulse applications

Ziembra, T. M.; Miller, K. E.; Slobodov, I.; Prager, J.; Carscadden, J.

P3-069 Research and Development of Online Tritium Monitoring Ionization Chamber

Guangda, L.; Cheng, Q.; Deli, L.; Hongquan, T.; Changan, C.

P3-072 Evaluation of tritium transport in nuclear fusion materials under irradiation at LIBRETTO-4

Moral, N.; Martínez, P.; Sedano, L.; Álvarez, J.; Perlado, J. M.

P3-073 Modelling of ITER divertor pumping system during various operational scenarios via kinetic theory

Valougeorgis, D.; Misdanitis, S.

Topic D Material Engineering for FNT**P3-074 Evaluation of applicability of a laser-based distance meter to measurement of Li jet thickness for the IFMIF/EVEDA project**

Kanemura, T.; Kondo, H.; Hoashi, E.; Yoshihashi-Suzuki, S.; Yamaoka, N.; Horiike, H.; Furukawa, T.; Hirakawa, Y.; Ida, M.; Wakai, E.

P3-075 Mechanical Properties of Similar and Dissimilar Weldments of RAFM Steel and AISI 316L(N) Stainless Steel Prepared by Electron Beam Welding Process

Albert, S.; Das, C. R.; Sam, S.; Mastanaiah, P.; Patil, M.; Bhaduri, A. K.; Jayakumar, T.; Murthy, C.V.S.; Ellappan, R. K.

P3-076 Non-linear Failure Analysis of HCPB Blanket for DEMO Taking into Account High Dose Irradiation

Aktaa, J.; Kecskés, S.; Pereslavitsev, P.; Fischer, U.; Boccaccini, L.

P3-077 Study on Li diffusivity in lithium metatitanate with excess lithium ($\text{Li}_2+2x\text{TiO}_3+y$) at high temperature

Mukai, K.; Omoto, K.; Yashima, M.; Sasaki, K.; Terai, T.; Suzuki, A.; Hoshino, T.

P3-078 Compatibility of F82H exposed to liquid Pb-Li flow

Kanai, A.; Park, C.; Noborio, K.; Kasada, R.; Konishi, S.; Hirose, T.; Nozawa, T.; Tanigawa, H.

P3-079 Evaluation of multi-layered hardness in ion-irradiated stainless steel by nano-indentation technique

Oka, H.; Sato, Y.; Hashimoto, N.; Ohnuki, S.

P3-080 Manufacturing and oxidation behaviour of bulk self-passivating tungsten-based alloys

García-Rosales, C.; López-Ruiz, P.; Álvarez-Martín, S.; Ordás, N.; Iturriza, I.; Koch, F.; Brinkmann, J.; Lindig, S.; Walter, M.

P3-081 Swelling of SiC materials and its helium effects for expected operating conditions based on some blanket design using SiC materials

Ozawa, K.; Nozawa, T.; Uto, H.; Someya, Y.; Tanigawa, H.; Tobita, K.

P3-082 IFMIF-Test Facilities: Functional Analysis and Improvement of Hot Cells

Mittwollen, M.; Eilert, D.; Kubaschewski, M.; Madzharov, V.; Arbeiter, F.; Tian, K.; Heinzl, V.

P3-084 MYRRHA a Flexible And Fast Spectrum Irradiation Facility for Fusion Reactor Materials Testing

Janssens, J.; Massaut, V.; Baeten, P.; Fernandez, R.

P3-085 The development at a pilot plant scale and characterization of a reduced activation ferritic-martensitic steel for fusion applications, Asturfer®

Morán De Vega, A.; Artímez, J. M.; Belzunce, J.

P3-086 Diffusion bonding for 9Cr-ODS and JLF-1 Reduced Activation Ferritic/Martensitic Steels

Fu, H.; Nagasaka, T.; Muroga, T.; Kimura, A.

P3-087 Optical absorption defects created in SiO₂ by O, Si and He ion irradiation

Martin, P.; Jimenez-Rey, D.; Vila, R.; Sanchez, F.

P3-088 CFD analysis on the effect of the flow straightener of IFMIF/EVEDA Lithium Test Loop

Fujishiro, K.; Ida, M.; Tsuji, Y.; Wakai, E.; Groeschel, F.; Nishitani, T.

P3-089 Joining Techniques for Reduced Activation 12Cr Steel for Laser Inertial Fusion Energy

Hunt, R.; El-Dasher, B.; Choi, B.

P3-090 Assessment of the beam-target interaction of IFMIF: a state of the art

Knaster, J.; Groeschel, F.

P3-091 Microstructure and deuterium permeation of alumina coatings on CLF-1 via MOCVD

Li, S.; He, D.; Liu, X.; Zhang, C.; Yu, Q.; Wang, S.; Lei, Y.; Jiang, L.

Topic F Nuclear System Design

P3-092 Investigation of the requirement for an energy storage system for DEMO and FPP

Meszaros, B.; Kovari, M.; Jenkins, I.; Rendell, D.; Sanmartí, M.; Cruz, M.; Díaz, F.

P3-093 Nuclear Analysis of the IFMIF European Lithium Target Assembly System

Frisoni, M.; Bernardi, D.; Micciche, G.; Serra, M.

P3-094 Benchmarking of MCNPX Results with Measured Tritium Production Rate and Neutron Flux at the Mock-Up of EU TBM (HCPB concept)

Tore, C.; Ortego, P.

P3-095 Start-Up and Shutdown Thermomechanical Transient Analyses of the IFMIF European Lithium Target System

Bernardi, D.; Arena, P.; Bongiovi, G.; Di Maio, P. A.; Frisoni, M.; Micciché, G.; Serra, M.

P3-097 Challenges and Progress in the Design of ITER Tokamak Cooling Water System Inside Cryostat

Dell'Orco, G.; Berruyer, F.; Gopalapilla, B.; Li, F.; Kuehn, I.; Mazzei, M.; Ployhar, S.; Reich, J.; Risnoveanu, A.; Somboli, F.; Teodoros, L.; Chang, K-P.

P3-098 Detailed 3-D Nuclear Analysis of ITER Blanket Modules for Final Design Review

Bohm, T.; Sawan, M.; Marriott, E.; Wilson, P.; Ulrickson, M.; Bullock, J.

P3-100 Analysis of radiation environment at divertor in helical DEMO reactor FFHR-d1

Tanaka, T.; Sagara, A.; Masuzaki, S.; Tokitani, M.; Muroga, T.; Miyazawa, J.; Goto, T.; Tamura, H.

P3-101 Novel Hybrid Monte Carlo/Deterministic Technique for Shutdown Dose Rate Analysis

Ibrahim, A.; Peplow, D.; Grove, R.; Wilson, P.

P3-102 Primary Design of EAST RMP Coils

Ji, X.; Wang, S.; Song, Y.

P3-103 Nuclear Analysis of the Diagnostics Equatorial Port Plug #3 In ITER with Attila Code and Impact on Interspace Dose Rates

Youssef, M.; Feder, R.

P3-104 Design and Configuration Management Platform for Fusion Components

Benoît, F.; Allegretti, L.; Bucalossi, J.; Doceul, L.; Fäisse, F.; Firdaouss, M.; Geynet, M.; Magaud, P.; Missirlian, M.; Van Houtte, D.; Aumeunier, M-H.; Robert, J.

Topic G Safety Issues and Waste Management

P3-105 **IFMIF Accelerator Facility Safety Analysis Based on FMECA Methodology**

Díaz-Arocas, P.; Mora, J. C.; Pérez, D.; Ogando, F.; Verschueren, D.

P3-106 **Free License codes to simulate the diffusion of contaminants in case of radiological release**

Gaudio, P.; Gelfusa, M.; Lupelli, I.; Malizia, A.; Antonelli, L.; Carestia, M. C.; Conetta, F.; Peluso, E.; Barlascini, O.; Fiorini, E.; Latini, G.; Soave, P. M.; Richetta, M.

P3-107 **Dust tracking techniques applied at STARDUST facility: first results**

Malizia, A.; Camplani, M.; Gelfusa, M.; Lupelli, I.; Richetta, M.; Antonelli, L.; Conetta, F.; Scarpellini, D.; Carestia, M.; Peluso, E.; Bellecci, C.; Salgado, L. and Gaudio, P.

P3-108 **Neutronics analysis and dose reduction for the ITER Neutral Beam Cell**

Lilley, S.; Delmas, E.; Lis, M.; Eade, T.; Loughlin, M.

P3-109 **Numerical Study of Air Jet Flow Field During a Loss of Vacuum Accident inside STARDUST facility**

Lupelli, I.; Gaudio, P.; Gelfusa, M.; Malizia, A.; Belluzzo, I.; Richetta, M.

P3-110 **Study of safety features and accident scenarios in a fusion DEMO reactor**

Nakamura, M.; Tobita, K.; Gulden, W.; Sakamoto, Y.; Someya, Y.; Tanigawa, H.; Araki, T.; Matsumiya, H.; Ishii, K.; Utoh, H.; Takase, H.; Hayashi, T.; Sato, A.; Yonomoto, T.; Federici, G.; Okano, K.

P3-111 **Waste management scenario in the hot cell and waste storage for DEMO**

Someya, Y.; Tobita, K.; Utoh, H.; Asakura, N.; Hoshino, K.; Nakamura, M.; Sakamoto, Y.

P3-112 **Radioprotection design of the water cooling system of the LIPAc beam dump**

Ogando, F.; Sauvan, P.; López, D.; Arranz, F.; Brañas, B.

P3-113 **Radioprotection analysis of the Accelerator Facility of IFMIF**

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Sauvan, P.; Catalán, J. P.; Sanz, J.; Ogando, F.

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García, R.; Catalán, J. P.; Sanz, J.

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Pérez-Sánchez, D.; Mora, J. C.; Díaz-Arocas, P.; Ogando, F.

P3-117 Radiological Impact on Members of the Public due to the Releases from the Accelerator Facility of IFMIF.

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P3-129 Stability of the LIPAc beam dump to vibrations induced by the cooling flow

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P3-136 Erosion evaluation capability of the IVVS for ITER applications

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P3-149 Suppressing chatter methods for robot machines in ITER assembly and maintenance

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P3-153 Application of inter-linked superconducting coils for central solenoid and advanced divertor configuration of DEMO

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