



Chairman – Dr. Yury Gasparyan

9.45 – 10.00	Conference opening
10.00 – 10.30	<p>S.V. Mirnov¹, A.V. Vertkov², M.Yu. Zharkov², A.V. Kuryachiy², I.E. Lyublinsky², A.S. Dzhurik¹, M.M. Murachev¹, V.B. Lazarev¹, N.T. Dzhigailo¹, N.V. Leshov¹, R.V. Chekushin¹, S.I. Kravchuk¹, V.A. Morozov¹, P.A. Antonov¹, A.V. Zorin¹, Ya.A. Vasina¹, N.P. Petrova¹</p> <p>¹National Research Nuclear University MEPhI, ²NRC "Kurchatov Institute"</p> <p>Creation and plasma tests on the T-11M tokamak of a working model of a semi-closed lithium circulation loop for a quasi-stationary tokamak</p>
10.30 – 11.00	<p>I.V. Mazul, R.N. Giniyatulin, A.A. Cavin, N.V. Litunovsky, A.N. Makhankov, P.Yu. Piskarev, V.N. Tanchuk</p> <p><i>Research Institute of Electrophysical Equipment. D.V. Efremova, St. Petersburg ITER Design Center, Moscow</i></p> <p>Plasma Facing Components of the TRT Tokamak</p>
11.00 – 11.20	<p>M.Yu. Zharkov¹, A.V. Vertkov¹, I.E. Lyublinsky¹, S.V. Mirnov², V.B. Lazarev²</p> <p>¹Krasnaya Zvezda, Moscow</p> <p>²TRINITI, Moscow</p> <p>Lithium limiter of the quasi-stationary type of the T-11M tokamak as a prototype of the T-15MD tokamak limiter</p>
11.20 – 11.40	<p>A.A. Pisarev¹, L.E. Zakharov², A.V. Vertkov³, V.V. Dusik⁴, M.Yu. Zharkov³, M.S. Kolesnik⁵, I.E. Lyublinsky³, I.V. Mazul⁵, P.Yu. Piskarev⁵, R.V. Rulev⁵, G.M. Tarasyuk¹, A.A. Shaporenkov⁴</p> <p>¹National Research Nuclear University MEPhI, ²LiWFusion, USA ³Krasnaya Zvezda ⁴A.N. Frumkin Institute of Physical Chemistry and Electrochemistry, ⁵NIIIEFA</p> <p>Model of the receiving plate of a tokamak divertor based on the concept of liquid lithium flow</p>
11.40 – 12.00	Coffee-break
Chairman – Dr. Yury Gasparyan	
12.00 – 12.20	<p>V.P. Budaev^{1,2}, A.M. Zhitlukhin³, Yu.V. Martynenko¹, V.L. Podkovyrov³, I.M. Poznyak^{3,4}, D.V. Kovalenko³, V.Yu. Tsybenko³, Z.I. Novoselova^{3,4}, E.D. Fedulaev^{3,4}, D.A. Burmistrov^{2,3}, S.D. Lidzhigoryaev^{3,4}, O.R. Ismagilov³</p> <p>¹Research Center "Kurchatov Institute", Moscow</p> <p>²National Research University MPEI, Moscow</p> <p>³TRINITI, Troitsk, Moscow</p> <p>⁴National Research University MIPT, Dolgoprudny,</p> <p>Tests of prototypes of the heat-shielding lining of the ITER divertor dome by plasma flows at KSPU-T: results and extrapolation to ITER conditions</p>

12.20 – 12.40

I. Borodkina^{1,2}, D.V. Borodin³, D. Douai⁴, D. Tskhakaya¹, H. Kumpulainen⁵, E. de la Cal⁶, J. Romazanov³, A. Huber³ and JET contributors^{*}

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⁶CIEMAT, Madrid, Spain

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Overview of plasma-facing component erosion and impurity migration studies at JET-ILW

12.40 – 12.55

V.A. Popov^{1,2}, A.S. Arakcheev^{1,3}, I.V. Kandaurov¹, A.A. Kasatov^{1,2}, V.V. Kurkuchekov¹, Yu.A. Truney¹, A.A. Vasiliev¹, L.N. Vyacheslavov¹

¹Institute of Nuclear Physics, Novosibirsk

²Novosibirsk State University

³Novosibirsk State Technical University

Thermal current in tungsten and near-surface evaporated layer during pulsed heating

12.55 – 13.10

N. V. Davydov^{1,2}, A. S. Arakcheev², A. A. Vasiliev², L.N. Vyacheslavov², I.V. Kandaurov², A.A. Kasatov^{1,2}, D.E. Cherepanov²

¹Novosibirsk State University, Novosibirsk

²Institute of Nuclear Physics, Novosibirsk

Investigation of thermal deformation of plates during pulsed heating

13.10 – 13.25

A.A. Vasiliev^{1,3}, A.S. Arakcheev^{1,3}, A.V. Burdakov^{1,3}, L.N. Vyacheslavov^{1,2,3}, I.V. Kandaurov¹, A.A. Kasatov^{1,2,3}, V.V. Kurkuchekov^{1,2}, A.G. Maksimova^{1,2,4}, V.A. Popov^{1,2}, A.A. Ruktuev^{1,3}, D.E. Cherepanov^{1,2,3}, A.A. Shoshin^{1,2}

¹Federal State Budgetary Institution of Science Institute of Nuclear, Siberian Branch of the Russian Academy of Sciences, Novosibirsk

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Dynamics of the shape of the tungsten surface after the formation of a network of cracks during thermal shock

13.25 – 14.25

Lunch-break

Chairman – Dr. Alexander Pisarev

14.25 – 14.40

R.A. Selivanov¹, I.A. Sorokin^{1,2}, S.A. Krat¹, N.S. Sergeev^{1,3}, D.V. Kolodko^{1,2}, F.S. Podolyako¹, E.A. Fefelova¹, O.V. Volkova⁴, V.V. Zakharov⁴

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⁴Institute of High-Temperature Electrochemistry, Ural Branch, Russian Academy of Sciences, Yekaterinburg

Study of a boron-lithium composite under powerful thermal and ion-plasma loads

14.40 – 14.55

K.A. Rogozin¹, V.P. Budaev^{1,2}, S.D. Fedorovich¹, A.V. Karpov^{1,2}, M.V. Lukashevsky¹, A.P. Sliva¹, A.Yu. Marchenkov¹, V. Chan Kuang¹, V.S. Kvaskov^{1,2}, A.A. Konkov¹

¹National Research University MPEI

²National Research Center "Kurchatov Institute"

Investigation of the results of the impact of laser, electron-beam, and arc loads on nanostructured surfaces of materials of the tokamak-reactor

14.55 – 15.10

N.N. Kasimova, L.B. Begrambekov, S.S. Dovganyuk, A.M. Zakharov

National Research Nuclear University MEPhI

Modification of aluminum-tungsten layers on tungsten under thermal action

15.10 – 15.25

V.P. Budaev^{1,2}, S.D. Fedorovich¹, Yu.V. Martynenko^{2,1}, A.V. Karpov^{1,2}, A.Yu. Marchenkov¹, M.V. Lukashevsky¹, A.V. Lazukin¹, M.K. Gubkin¹, D.I. Kavyrshin¹, D.S. Lukyantsev¹, M.V. Budaeva⁴, V. Chan Kuang¹, G.B. Vasiliev¹, K.A. Rogozin¹, A.A. Konkov¹

¹National Research University MPEI, Moscow

²NRC "Kurchatov Institute", Moscow

³Joint Institute for High Temperatures, Russian Academy of Sciences, Moscow

⁴National Research University MIPT, Dolgoprudny

Growth of nanostructures on titanium and iron under plasma irradiation by stationary plasma loads in the PLM device

15.25 – 15.40

N.S. Sergeev^{1,2}, I.A. Sorokin^{1,3}, F.S. Podolyako¹, O.V. Ogorodnikova¹, V.S. Efimov¹, Yu.M. Gasparyan¹

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Modification of the tungsten surface under the influence of helium plasma with an admixture of inert gases

15.40 – 15.55

N.N. Andrianova¹, A.M. Borisov^{1,2}, E.S. Mashkova³, M.A. Ovchinnikov³

¹Moscow Aviation Institute (National Research University), Moscow

²Moscow State Technological University STANKIN, Moscow

³Moscow State University named after M.V. Lomonosov, Moscow

Modification of carbon-carbon composite materials under high-dose exposure to plasma ions of thermonuclear installations

15.55 – 16.10

M.M. Tsventukh

Physical Institute. P.N. Lebedev Russian Academy of Sciences (FIAN), Moscow

Determination of the critical temperature of a substance from the parameters of cathode spot plasma of a vacuum arc

16.10 – 16.30

Coffee-break

Chairman – Dr. Leon Begrambekov

16.30 – 16.45	<p>A.A. Konkov, K.A. Rogozin, V. Chan Kuang, V.S. Kvaskov, S.V. Belousov, A.V. Karpov, A.V. Zakharenkov, S.D. Fedorovich, V.P. Budaev <i>National Research University MPEI, Moscow</i> Testing cooled liquid-metal lithium capillary-porous systems with stationary plasma and pulsed laser loads</p>
16.45 – 17.00	<p>A.S. Umerenkova¹, Yu. Van¹, Z.R. Harutyunyan¹, Yu.M. Gasparyan¹, V.S. Efimov¹, A.M. Litnovsky², O.V. Ogorodnikova¹, C. Garcia-Rozales³ ¹<i>National Research Nuclear University MEPhI</i>, ²<i>Forschungszentrum Jülich GmbH, Institut für Energie- und Klimateforschung, Jülich, Germany</i> ³<i>Cet-IK4 Technology Center, San Sebastian, Spain</i> Trapping of deuterium ions in SMART W-Cr-Y alloys</p>
17.00 – 17.15	<p>N.P. Bobyr¹, V.S. Efimov², B.I. Khrapunov¹, D.I. Cherkez¹, D.A. Kozlov¹, D.S. Dugin¹, S.S. Ananiev¹ ¹<i>NRC "Kurchatov Institute", Moscow</i> ²<i>National Research Nuclear University MEPhI, Moscow</i> Effect of tantalum impurity on deuterium capture under low-temperature plasma irradiation in W-Ta alloy</p>
17.15 – 17.30	<p>D.S. Dugin¹, N.P. Bobyr^{1,2}, D.A. Kozlov¹ ¹<i>National Research Center Kurchatov Institute, Moscow</i> ²<i>VNIINM, Moscow</i> Study of the effect of ion-induced defects in bronze Cu1Cr0.1Zr on deuterium accumulation</p>
17.30 – 17.45	<p>Z.R. Harutyunyan, Yu.M. Gasparyan, V.S. Efimov, S.A. Krat, A.A. Pisarev <i>National Research Nuclear University MEPhI</i> Substitution of helium isotopes in tungsten under ion irradiation</p>
17.45 – 18.00	<p>E.A. Fefelova, S.A. Krat, Yu.M. Gasparyan, V.S. Efimov, M.M. Zaripova, M.G. Isaenkov, A.A. Pisarev <i>National Research Nuclear University MEPhI</i> Influence of helium impurity on the properties of co-deposited tungsten-deuterium layers and retention of deuterium in them</p>
18.00 – 18.15	<p>N.V. Leshov, A.N. Shcherbak, V.G. Petrov, A.Yu. Afonin <i>JSC SSC RF TRINITI, Moscow</i> First results of plasma density prediction using artificial neural networks for the T-11M tokamak</p>
18.15 – 18.30	<p>G.B. Vasiliev¹, S.D. Fedorovich¹, A.V. Karpov^{1,2}, V.P. Budaev^{1,2}, D.I. Kavyrshin^{1,3}, V. Chan Kuang¹, M.V. Lukashevsky¹, M.K. Gubkin¹, K.A. Rogozin¹, A.A. Konkov¹ ¹<i>National Research University MPEI</i> ²<i>National Research Center "Kurchatov Institute" 3JIHT RAS, Moscow, Russia</i> Tests of tungsten components using combined plasma and laser loads</p>
	<p>End of the 1st day</p>

Chairman – Dr. Yury Gasparyan

9.55 – 10.00	Opening of the 2 nd conference day
10.00 – 10.30	<p>A.G. Razdobarin¹, A.M. Dmitriev^{1,2}, D.I. Yelets^{1,2}, E.E. Mukhin¹, D.L. Bogachev¹, Yu.M. Gasparyan², I.V. Alekseenko³</p> <p>¹<i>FTI A.F. Ioffe, St. Petersburg</i> ²<i>NRNU MEPhI, Moscow</i> ³<i>BFU, Kaliningrad</i></p> <p>Development of a complex for laser diagnostics of the first wall for the Globus-M2 tokamak</p>
10.30 – 11.00	<p>A.P. Menushenkov</p> <p><i>National Research Nuclear University MEPhI</i> Synchrotron radiation is a unique tool for studying the matter</p>
11.00 – 11.20	<p>A.A. Airapetov, Ya.A. Sadovsky, L.B. Begrambekov</p> <p><i>National Research Nuclear University MEPhI</i> Probe device for the complex study of plasma with a divertor in thermonuclear facilities</p>
11.20 – 11.40	<p>A.V. Grunin, L.B. Begrambekov</p> <p><i>National Research Nuclear University MEPhI</i> Probe device for complex investigation of "plasma/wall" interactions in thermonuclear installations</p>
11.40 – 12.00	<p>S.V. Rogozhkin^{1,2}, A. A. Nikitin^{2,1}, A.A. Khomich^{2,1}, A.A. Bogachev^{2,1}, A.V. Clause^{1,2}, N.A. Iskandarov^{2,1}, A.A. Lukyanchuk^{2,1}, O.A. Raznitsyn^{2,1}, A.S. Shutov^{2,1}, A.G. Zaluzhny^{1,2}, Yu.E. Gorshkova³, G.D. Boguchava³</p> <p>¹<i>National Research Nuclear University MEPhI, Moscow</i> ²<i>NRC "Kurchatov Institute" - ITEP, Moscow</i> ³<i>Joint Institute for Nuclear Research, Dubna</i></p> <p>Complementary analysis of radiation effects in materials</p>
12.00 – 12.20	Coffee-break

Chairman – Dr. Stepan Krat

12.20 – 12.35	<p>D.M. Bachurina¹, A.N. Suchkov¹, I.V. Kozlov^{1,2}, N.P. Bobyr³, Yu.A. Gurova¹, V.S. Efimov¹, E.S. Kulikova³, A.V. Spitsin^{1,3}, Yu.M. Gasparyan¹</p> <p>¹<i>National Research Nuclear University MEPhI</i>, ²<i>National Research Technological University MISiS</i> ³<i>NRC "Kurchatov Institute"</i></p> <p>Influence of deuterium on the phase composition of low-activated solder TiZr4Be</p>
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12.35 – 12.50	N.Yu. Svechnikov, V.G. Stankevich NRC "Kurchatov Institute", Moscow On the possibility of spectroscopic studies of tungsten erosion products with carbon impurities
12.50 – 13.05	N.P. Bobyr^{1,2}, T.A. Anfimova^{1,3}, B.V. Ivanov¹, A.S. Anikin², I.G. Lesina², A.A. Semenov², N.E. Zabirova², A.S. Kryukova², A.N. Bukin^{2,3}, A.V. Lizunov² ¹ National Research Center Kurchatov Institute, Moscow ² High-tech Research Institute of Inorganic Materials named after Academician A.A. Bochvara, Moscow ³ Russian University of Chemical Technology named after A.I. Mendelev, Moscow Application of radioluminography for the analysis of the accumulation of tritium in electron-induced defects in advanced materials for thermonuclear reactors
13.05 – 13.20	N.E. Efimov, D.N. Sinelnikov, D.G. Bulgadaryan National Research Nuclear University MEPhI Calibration of the neutral atom flux analyzer for the MEPHIST tokamak
13.20 – 14.20	Lunch-break

Chairman – Dr. Alexey Razdobarin

14.20 – 14.40	Yu.M. Gasparyan, D.G. Bulgadaryan, A.I. Alieva, N.N. Degtyarenko, N.E. Efimov, V.S. Efimov, A.V. Kaziev, S.A. Krat, V.V. Kulagin, E.D. Marenkov, F.S. Podolyako, N.S. Sergeev, D.N. Sinelnikov, I.A. Sorokin, A.A. Stepanenko, A.M. Stolbov, M.A. Popova, M.M. Kharkov National Research Nuclear University MEPhI Methods for remote control of the accumulation and removal of hydrogen isotopes from the walls of thermonuclear installations
14.40 – 14.55	M.A. Popova, M.V. Grishaev, D.G. Bulgadaryan, Yu.M. Gasparyan National Research Nuclear University MEPhI Estimation of the error in determining the content of deuterium in tungsten by the method of laser-induced desorption
14.55 – 15.10	V.V. Kulagin, A.Yu. Khomyakov, Yu.M. Gasparyan, N.N. Degtyarenko National Research Nuclear University MEPhI Estimation of atomic and molecular flux ratio during hydrogen desorption from a tungsten surface
15.10 – 15.25	L.A. Varshavchik, N.A. Babinov, Z.G. Lyullin, E.A. Starovoitov, S.I. Kogakov, E.E. Mukhin FTI, St. Petersburg Simulation of deposition on intravacuum optics of ITER divertor Thompson scattering diagnostics

15.25 – 15.40

A.M. Dmitriev^{1,2,4}, A.G. Razdobarin¹, L.A. Snigirev¹, D.I. Yelets^{1,4}, I.M. Bukreev¹, A.P. Chernakov¹, E.E. Mukhin¹, S.Yu. Tolstyakov¹, I.B. Kupriyanov³
¹FTI, St. Petersburg
²Spektral-Tech, St. Petersburg
³VNIINM, Moscow
⁴NRNU MEPhI, Moscow
Magnetron deposition of beryllium and cyclic clearing of diagnostic windows in an RF discharge plasma

15.40 – 15.55

Z.G. Lyullin^{1,2}, N.A. Babinov^{1,2}, L.A. Varshavchik^{1,2}, E. E. Mukhin¹
¹FTI, St. Petersburg
²Spektral-Tech, St. Petersburg
Ab initio potentials and elastic interaction cross sections for modeling the transport of particles in a gas

15.55 – 16.15

Coffee-break

Chairman – **Dr. Alexander Pisarev**

16.15 – 16.35

P. Bittner¹, H.R. Koslowski¹, A. Litnovsky^{1,2}, Ch. Linsmeier¹
¹Forschungszentrum Jülich GmbH - IEK-4, Jülich, Germany
²National Research Nuclear University MEPhI, Moscow, Russia
Modeling of surface segregation of Cr in the WCrY SMART alloy

16.35 – 16.55

V.P. Budaev^{1,2}, Yu.V. Martynenko¹, M.Yu. Nagel¹
¹Research Center "Kurchatov Institute", Moscow
²National Research University MPEI, Moscow
Plasma accelerator with capillary-porous electrodes based on the PLM plasma facility

16.55 – 17.10

P.V. Minashin¹, A.B. Kukushkin^{1,2}
¹Research Center "Kurchatov Institute", Moscow
²NRNU MEPhI, Moscow
The spectral intensity of the electron cyclotron radiation of the plasma emerging on the first wall in ITER

17.10 – 17.25

D.I. Kavyrshin^{1,3}, V.P. Budaev^{1,2}, S.D. Fedorovich¹, A.V. Karpov^{1,2}, V.F. Chinnov³, M.V. Lukashevsky¹, V. Chan Kuang¹, M.K. Gubkin¹, E.V. Muravieva¹, A.S. Myazin¹, G.B. Vasiliev¹, K.A. Rogozin¹, A.A. Konkov¹
¹National Research University MPEI, Moscow
²NRC "Kurchatov Institute", Moscow
³Joint Institute for High Temperatures, Russian Academy of Sciences, Moscow
Optical emission spectroscopy for studying the region of interaction between a plasma flow and a tungsten sample

17.25 – 17.40

**S.D. Fedorovich¹, V.P. Budaev^{1,2}, A.V. Karpov^{1,2}, A.P. Sliva¹,
A.Yu. Marchenkov¹, M.V. Lukashevsky¹, M.K. Gubkin¹, D.I. Kavyrshin¹,
A.V. Zakharenkov¹, V. Chan Kuang¹, K.A. Rogozin¹, A.A. Konkov¹**

¹National Research University MPEI, Moscow

²NRC "Kurchatov Institute", Moscow

Diagnostics of near-surface turbulent plasma and heat fluxes on plasma-facing materials in experiments with arc processes

17.40 – 17.55

D.I. Cherkez, N.O. Stepanov, S.S. Ananiev, A.V. Spitsyn

NRC "Kurchatov Institute", Moscow, Russia

A device to study the interaction of plasma with materials based on a helicon-type RF source: first results

17.55 – 18.10

**V. Chan Kuang¹, V.P. Budaev^{1,2}, A.V. Dedov¹, S.D. Fedorovich¹,
D.I. Kavyrshin^{1,3}, A.V. Karpov^{1,2}, Yu.V. Martynenko², A.T. Komov¹,
A.V. Lubenchenco¹, M.V. Lukashevsky¹, A.V. Zakharenkov¹, M.K. Gubkin¹,
G.B. Vasiliev¹, K.A. Rogozin¹, A.A. Konkov¹, V.S. Kvaskov¹**

¹National Research University MPEI, Moscow, Russia

²NRC "Kurchatov Institute", Moscow

³Joint Institute for High Temperatures, Russian Academy of Sciences, Moscow
RF heating system for achieving plasma parameters in the PLM-M device

18.10 – 18.25

**Yu.A. Gurova¹, A.N. Suchkov¹, D.M. Bachurina¹, N.S. Popov¹, O.N. Sevryukov¹,
A.M. Litnovsky^{1,2}, Sh. Tan^{2,3}**

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²Forschungszentrum Jülich, Germany

³Hefei University of Technology, China

Study of applicability of TiZr4Be solder alloy for soldering self-passivating tungsten alloys with steel for DEMO fusion reactor

18.25 – 18.40

**A.P. Sliva¹, V.K. Dragunov¹, A.Yu. Marchenkov¹, V.P. Budaev^{1,2}, D.A. Zhgut¹,
I.E. Zhumurko¹, S.D. Fedorovich¹, A.V. Karpov¹**

¹National Research University MPEI, Moscow

²NRC "Kurchatov Institute", Moscow

On the method of electron-beam surfacing with filler wire for the manufacture of cooled tungsten modules of the heat-shielding lining of the tokamak-reactor divertor

18.40 – 18.50

Conference closing