

XII conference
«Modern methods of plasma diagnostics and their applications» (16-18 December 2020)

PROGRAM

WEDNESDAY , 16 December 2020

Chair – Savjолоv A.S.

10.45 – 11.00	Opening
11.00 – 11.30	E. Mukhin <i>Ioffe Institute</i> Diagnostics of Thomson scattering: high-tech solutions developed for ITER and implementation analysis for large tokamaks
11.30 – 11.50	R. Khusnutdinov <i>MEPHI</i> Algorithms for reconstructing the luminosity profiles of spectral lines of atoms and ions in the near-wall layer of ITER using tomography, taking into account light reflections from the first wall
11.50 – 12.10	E. DIMITRIEVA <i>ITER Russia</i> Measurement of the diffraction efficiency of holographic diffraction gratings used in a high-resolution two-channel spectrometer-polychromator for active
12.10 – 12.30	D. Leontyev <i>Kurchatov Institute</i> Calculation of the ratio of radiation losses in a thermonuclear plasma for fast heavy particles and electrons
12.30 – 12.50	A. Drozd <i>Kurchatov Institute, MEPHI</i> Preparation of the vertical channel of the microwave interferometer for the physical launch of the T-15MD tokamak
12.50 – 13.10	D. Panfilov <i>Kurchatov Institute, MEPHI</i> Vertical Thomson scattering system of the T-15MD tokamak
13.10 – 14.10	Break

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14.10 – 14.30	A. Belov <i>MEPHI</i> Development of a heterodyne interferometer for measuring the linear plasma density of the MEPHIST tokamak
14.30 – 14.50	A. Belyaev <i>MEPHI</i> Analyzing Laser-Induced Fluorescence (LIF) Signal Measurement of Electron Concentration Using Machine Learning
14.50 – 15.10	Yu. Klimachev <i>Lebedev Physical Institute</i> Terahertz NH ₃ laser with optical pumping by "long" (~ 100 μs) CO ₂ laser pulses for plasma diagnostics
15.10 – 15.30	A. Sagitova <i>Lebedev Physical Institute</i> Broadband CO laser with intracavity frequency conversion for plasma diagnostics
15.30 – 15.50	D. Fridrihsen <i>TRINITY</i> SCINTHILLATION DETECTOR BASED ON PARATEPHENYL CRYSTAL FOR DETERMINING THERMONUCLEAR NEUTRONS
15.50 – 16.10	I. Kudashev <i>Kurchatov Institute, MEPHI</i> Analysis of the error in CXRS measurements in T-10 plasma by the Monte Carlo method
16.10 – 16.30	N. Bukharsky <i>MEPHI</i> Application of neural networks to reconstruct fields in magnetized plasma from proton radiography data
16.30 – 16.50	A. Stepanenko <i>MEPHI</i> Influence of the geometry of the magnetic field on the parameters of the current-convective turbulence of the divertor plasma of a tokamak

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16-50	Poster session
1	E. Baronova <i>Kurchatov Institute, MEPHI</i> Reconstruction of the radial plasma density profile from interference measurements
2	V. Lagunov <i>Lebedev Physical Institute</i> Study of the dissociation of oxygen molecules in a glow discharge plasma by diode laser spectroscopy
3	E. Voronova <i>Prokhorov General Physics Institute</i> Surface temperature of a mixture of Pd + Al₂O₃ powders during the course of plasma-chemical chain reactions initiated by the gyrotron radiation
4	G. Moldabekov <i>Al-Farabi Kazakh National University</i> Measurement energy of neutrons using time of flight method

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THURSDAY, 17 December 2020

Chair – Gasparyan Yu.M.

11.00 – 11.20	Yu. Kochetkov <i>MEPHI</i> Integrated interferometry - applications and accuracy
11.20 – 11.40	K. Lukyanov <i>MEPHI</i> Development of a system for measuring electron plasma density in the QSPA-T installation
11.40 – 12.00	A. Kartacheva <i>TRINITI</i> Experimental study of the plasma flow of helium in a quasi-stationary high-current plasma accelerator
12.00 – 12.20	G. Vasilyev <i>TRINITI</i> Measurements of the characteristics of a plasma helium flow using a single probe in QSPA-T
12.20 – 12.40	Z. Zakletsky <i>Prokhorov General Physics Institute</i> Method for determining the absorption coefficient of microwave radiation of a gyrotron in a mixture of Al ₂ O ₃ / Pd powders
12.40 – 13.00	A. Letunov <i>Prokhorov General Physics Institute</i> Use of atomic and molecular emission spectra for diagnostics of discharges excited by high-power gyrotron pulses in metal-dielectric mixtures
13.00 – 14.00	Break

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THURSDAY, 17 December 2020

Chair – Pisarev A.A.

14.00 – 14.20	M. ZLOBINSKI <i>FZ Juelich</i> Laser-Induced Desorption as quantitative in situ diagnostic Method for Fuel retention in Be co-deposits
14.20 – 14.40	E. Marenkov <i>MEPHI</i> Evaluation of the accuracy of the LIBS method for determining the accumulation of hydrogen in the first wall materials
14.40 – 15.00	V. Lychkovsky <i>Institute of Physics of the National Academy of Sciences of Belarus</i> Intensification of plasma formation and ablation of silicon in air under combined laser irradiation at wavelengths of 355 and 532 nm
15.00 – 15.20	A. Grunin <i>MEPHI</i> Modification of the universal material science probe for the KTM tokamak
15.20 – 15.40	A. Pikalev <i>Institute of Materials Physics in Space, German Aerospace Center (DLR)</i> Optogalvanic diagnostics of the heartbeat instability in complex plasmas
15.40 – 16.00	N. Efimov <i>MEPHI</i> Laboratory system for laser diagnostics of the accumulation of hydrogen isotopes in fusion related materials
16.00 – 16.20	S. Asanina <i>TRINITI</i> Determination of the concentration of neutral aluminum atoms from the absorption spectrum
16.20 – 16.40	I. Antonova <i>Prokhorov General Physics Institute</i> Chemical deposition of SiC-diamond composite films in a microwave discharge in H₂-CH₄-SiH₄ mixtures: plasma diagnostics by optical emission spectroscopy
16.40 – 17.00	E. Sametov <i>Joint Institute for High Temperatures RAS</i> Effect of the composition of the plasma-forming gas on the interaction of macroparticles in gas discharges

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FRIDAY, 18 December 2020

Chair – Baronova E.

11.00 – 11.20	M. Alkhimova <i>Joint Institute for High Temperatures RAS</i> Investigation of pre-pulse influence on high-Z plasma formation in experiments with intense (up to 10^{22} W/cm²) femtosecond laser pulses by means of X-ray spectroscopy
11.20 – 11.40	N. Sergeev <i>MEPHI</i> Diagnostics of high-frequency discharge plasma in He at pressures of 1–100 Pa
11.40 – 12.00	D. Kolodko <i>MEPHI</i> Measurement of ion fluxes of various types in magnetron discharges
12.00 – 12.20	S. Kovalskiy <i>Institute of High Current Electronics SB RAS</i> Investigation of plasma parameters in a pulsed combustion mode of a non-self-sustained arc discharge
12.20 – 12.40	A. Kotkov <i>Lebedev Physical Institute</i> Cryogenic barrier discharge plasma in oxygen
12.40 – 13.00	I. Savvatimova <i>MEPHI</i> ICP mass spectrometry in the analysis of the phenomenon of low-energy nuclear reactions initiated in metals under conditions of a glow discharge
13.00 – 14.00	Break

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14.00 – 14.20	A. Bernatsky <i>Lebedev Physical Institute</i> Transformation of the electron energy distribution function near a hollow cathode
14.20 – 14.40	R. Ramakoti <i>MEPHI</i> Application of intense soft X-ray laser plasma radiation to study the composition of various organic materials
14.40 – 15.00	A. Sokolov <i>Prokhorov General Physics Institute</i> Investigation of microwave breakdown in powder mixtures in the first phase of plasma-chemical chain processes
15.00 – 15.20	V. Kostyushin <i>TRINITI</i> Diagnostics of fast processes in the interaction of a powerful plasma flow with a solid and gas
15.20 – 15.40	A. Kozak <i>Prokhorov General Physics Institute</i> Electronic journal of data on plasma chemical synthesis of materials in microwave discharges initiated by the radiation of a pulsed gyrotron in mixtures of powders of metals and dielectrics
15.40 – 16.00	A. Chistolinov <i>Joint Institute for High Temperatures RAS</i> Study of the spatial distribution of emission spectra of a discharge with a liquid cathode