



10th International Workshop

**"Strong Microwaves and Terahertz Waves:
Sources and Applications"**

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Strong Microwaves and Terahertz Waves: Sources and Applications

P R O G R A M

**Nizhny Novgorod – Moscow, Russia
July 17 – 22, 2017**

Topical Symposia of the Workshop

•Symposium A:

High-power microwave applications

(including accelerators, radars, gas discharges, material processing, biomedical applications, etc.)

•Symposium H:

Current drive and plasma heating by microwaves in nuclear fusion devices

•Symposium S:

High-power microwave sources

•Symposium T:

Extreme and nonlinear terahertz science

0:00 – 9:00	REGISTRATION		
9:00	DEPARTURE FROM NIZHNY NOVGOROD		
9:00 – 10:00	BREAKFAST		
10:00 – 10:30	OPENING SESSION (Hall A)		
10:30 – 12:00	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.1: J. Stober (<i>Max-Planck-Institut für Plasmaphysik, Germany</i>), Overview of ECH experiments in Europe and their future prospects P.2: G. Denisov (<i>Institute of Applied Physics, Russia</i>), New trends in gyrotron development P.3: Y. Oda (<i>QST, Japan</i>), Recent activities of ITER gyrotron development in QST</p>		
12:00 – 12:30	COFFEE BREAK		
12:30 – 14:00	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.4: P. Bagryansky (<i>Budker Institute of Nuclear Physics, Russia</i>), A new outlook on the magnetic mirror approach to fusion P.5: O. Tarvainen (<i>University of Jyväskylä, Finland</i>), Electron cyclotron resonance ion sources - physics, technology and future challenges P.6: V. Skalyga (<i>Institute of Applied Physics, Russia</i>), Powerful neutron generators based on high current ECR ion sources with gyrotron plasma heating</p>		
14:00 – 15:00	LUNCH		
15:00 – 17:00	ORAL SESSIONS		
	Session S-1 (Hall A)	Session A-1 (Hall B)	Session H-1 (Hall C)
	S1.1 (invited): Y. Lau , Crossed-field flows S1.2 (invited): S. Samsonov , Development of gyrotron traveling-wave tubes at IAP and GYCOM S1.3: V. Zapevalov , Non-canonical gyrotrons S1.4: V. Manuilov , Development of advanced electron optical systems for novel gyrotrons S1.5: C. Wu , Comparison between controlled non-adiabatic and E×B concepts for gyrotron multistage depressed collectors S1.6: I. Zotova , Generation of rogue waves in gyrotrons with high excess over the threshold	A1.1 (invited): O. Brinza , CVD Diamond growth and defects: status and remaining challenges A1.2: V. Ralchenko , Express <i>in-situ</i> measurement of single crystal diamond growth/etching rate in microwave plasma: how to perform multiparametric kinetics study in one working day A1.3: Yu. Lebedev , Microwave discharge in liquid hydrocarbons A1.4: S. Bogdanov , Influence of CVD diamond growth conditions and misorientation angle on nitrogen incorporation A1.5: V. Kukushkin , Diamond Bragg superlattice grown in microwave gas discharge for obtaining photoluminescence of single diamond color centers comprising a dense 3D ensemble	H1.1 (invited): J.-G. Kwak , ECH issues toward steady state operation at KSTAR H1.2 (invited): V. Minaev , Globus-M2 spherical tokamak and its mission in developing of compact fusion neutron source H1.3: F. Leuterer , Experimental study of Ohmic losses of polarizer mirror system H1.4: G. Granucci , The EC-system of EU DEMO: concepts for a reactor heating system H1.5: D. Wagner , Extension of the multi-frequency ECRH System at ASDEX Upgrade H1.6: H. Braune , Enhancements of the W7-X ECRH facility with respect to the next experiment campaign OP1.2
17:00 – 17:30	COFFEE BREAK		

		ORAL SESSIONS		
		Session S-2 (Hall A)	Session A-2 (Hall B)	Session T-1 (Hall C)
17:30 – 19:00		<p>S2.1 (invited): S. Ruess, European research activities towards a future DEMO gyrotron</p> <p>S2.2: L. Popov, Super-high power gyrotrons for electron-cyclotron plasma heating</p> <p>S2.3: E. Di Palma, The CARM beam-wave interaction and cavity design</p> <p>S2.4: S. Ceccuzzi, Comparison of reflector concepts for a 250 GHz CARM cavity</p> <p>S2.5: G Dattoli, From research and design work toward the realization of CARM source at ENEA</p>	<p>A2.1 (invited): L. Sun, Gyrotron frequency ECRIS development and the future challenges</p> <p>A2.2: R. Shaposhnikov, ECR discharge in a single solenoid field</p> <p>A2.3: G. Link, Investigation on mm-wave sintering of metal powder compacts using in-situ dilatometry and electrical resistivity measurements</p> <p>A2.4: I. Volkovskaya, Effective magnetic permeability of compacted metal powders at microwave frequencies</p>	<p>T1.1 (invited): B. Knyazev, Wave beams with orbital angular momentum: a step towards terahertz</p> <p>T1.2: V. Bratman, Coherent spontaneous THz undulator radiation from dense electron bunches formed in laser-driven photo-injectors</p> <p>T1.3: N. Osintseva, Terahertz Bessel beams with orbital angular momentum: diffraction and interference</p> <p>T1.4: Yu. Choporova, THz ellipsometry as a sensitive tool for measuring of the complex refractive index of liquids and biological substances</p> <p>T1.5: I. Ilyakov, Terahertz time-domain measurements by electro-optic crystals with various symmetries</p>
20:00 – 22:00	WELCOME PARTY			

7:30 – 8:30	BREAKFAST
8:30 – 10:00	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.7: M.H. Li (<i>Institute of Plasma Physics, China</i>), ECRH system, microwave diagnostics and experimental results in the EAST tokamak P.8: J. Lohr (<i>General Atomics, USA</i>), Update on the DIII-D ECH system: experiments, gyrotrons, advanced diagnostics, and controls P.9: A. Romannikov (<i>NRC “Kurchatov Institute”, Russia</i>), Medium size tokamak T-15MD as a base for experimental fusion research in Russian Federation</p>
10:00 – 10:30	COFFEE BREAK,
10:00 – 11:30	Stop in Plyos
12:00 – 13:30	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.10: M. Glyavin (<i>Institute of Applied Physics, Russia</i>), Development and applications of THz gyrotrons P.11: F. Engelke (<i>Bruker Biospin GmbH, Germany</i>) Sub-THz technology for dynamic nuclear polarization in nuclear magnetic resonance (DNP NMR): transverse confinement of microwave propagation through heterogeneous solid DNP samples P.12: M. Blank (<i>CPI, USA</i>) High power and high frequency gyrotron development at CPI</p>
14:00 – 15:00	LUNCH
15:30 – 18:00	EXCURSION TO KOSTROMA
18:00 – 20:00	<p style="text-align: center;">POSTER SESSION: Symposia S, T</p> <p>SP.1: A. Adilova, Planar slow-wave structures for miniaturized low-voltage Cherenkov devices SP.2: G. Sominskii, Prospective field emitters for miniature high voltage electronic devices operating at technical vacuum conditions SP.3: A. Adilova, Synchronization of delay-coupled gyrotron oscillators SP.4: M. Kulygin, 260 GHz CW gyrotron heating substitution with second-long laser pulses in waveguide semiconductor switches SP.5: A. Sergeev, Theoretical and experimental investigations of oversized Ka-band surface-wave oscillator based on 2D periodical corrugated structure SP.6: A. Tsvetkov, 45GHz/20kW gyrotron setup with automated output power control for ECR ion source SP.7: A. Tsvetkov, A quasi-optical input for a whispering-gallery-mode gyro-twystron SP.8: M. Proyavin, Development of high-efficient gyrotron based complex for industrial applications SP.9: K. Leshcheva, Non-adiabatic electron-optical system for 170GHz/1MW/CW gyrotron SP.10: V. Manuilov, Development of field emitter non-adiabatic electron optic system for the spectroscopic 263 GHz/CW gyrotron SP.11: A. Fokin, Influence of weak reflection from a nonresonant load on the operation frequency of the 28 GHz technological gyrotron SP.12: V. Bratman, Non-relativistic hollow electron beam formation for mm-wave BWO SP.13: V. Bratman, Progress in the development of low-voltage gyrotron for integration with NMR spectrometer SP.14: S. Mishakin, Thermal analysis of gyro-amplifiers with helically corrugated waveguides</p>

	<p>SP.15: M. Vilkov, Ultrashort pulse generation based on two coupled helical gyro-TWTs</p> <p>SP.16: A. Malkin, Amplification of short-wavelength radiation by relativistic electron beams moving near the impedance surfaces</p> <p>SP.17: M. Morozkin, Collector system of a gyrotron with magnetically shielded solenoid</p> <p>SP.18: I. Zotova, Modulation of microwave radiation in the process of resonant interaction with a counter-propagating rectilinear electron beam</p> <p>SP.19: V. Tarakanov, PIC-simulation of efficient Cherenkov X-band and V-band HPM sources with moderately relativistic electron beams</p> <p>SP.20: V. Tarakanov, Time-dependent numerical simulation of diffraction and absorption effects in diagnostics of short high-power microwave pulses using wide-aperture liquid calorimeters</p> <p>SP.21: A. Adilova, Modeling of a 0.4 THz second-harmonic frequency-tunable gyrotron with complex cavity</p> <p>TP1: A. Phelps, Pseudospark excited sub-THz frequency sources</p> <p>TP2: B. Shokri, Terahertz radiation of a metamaterial sphere excited by a relativistic revolving bunch</p> <p>TP3: A. Frolov, Generation of terahertz radiation in the interaction of a laser pulse with clusters</p> <p>TP4: A. Frolov, Excitation of THz surface waves in the conductor by a drag current generated by a focused femtosecond pulse</p> <p>TP5: A. Arzhannikov, Electrodynamical system for two-stage THz-generator on the base of two-channel planar FEM</p> <p>TP6: I. Osharin, Terahertz gyrotrons with quasi-regular cavities</p> <p>TP7: Yu. Oparina, Spontaneous coherent cyclotron THz super-radiation from a short dense photo-injector electron bunch</p>
<p>20:00 – 21:00</p>	<p>DINNER</p>
<p>21:00 – 22:00</p>	<p>CONCERT</p>

7:30 – 8:30	BREAKFAST		
8:30 – 10:00	PLENARY SESSION (Hall A)		
	<p>P.13: T. Grotjohn (<i>Michigan State University, USA</i>), Microwave plasma-assisted deposition of diamond for electronic applications</p> <p>P.14: A. Vikharev (<i>Institute of Applied Physics, Russia</i>), CVD diamond with boron-doped delta-layers deposited by microwave plasma</p> <p>P.15: V. Luchinin (<i>St. Petersburg State Electrotechnical University "LETI", Russia</i>), The composition "diamond - silicon carbide" in extreme electronics</p>		
10:00 – 14:00	EXCURSION TO YAROSLAVL'		
14:00 – 15:00	LUNCH		
	ORAL SESSIONS		
15:00 – 16:30	Session T-2 (Hall A)	Session A-3 (Hall B)	Session H-2 (Hall C)
	<p>T2.1 (invited): S. Kozlov, The nonlinearity of the refractive index of optical media in the terahertz spectral range</p> <p>T2.2: A. Arzhannikov, Study of 0.3-0.8 THz flux generated by magnetized plasma column due to relaxation of high-current REB</p> <p>T2.3: V. Kubarev, Instabilities, coherency, and spectra of the NovoFEL radiation</p> <p>T2.4: A. Savilov, Super-radiative self-compression of photo-injector electron bunches and the use of this effect for realization of a THz source based on spontaneous coherent emission from a short dense electron bunch</p>	<p>A3.1 (invited): A. Vodopyanov, Sources of ultraviolet light based on microwave discharges</p> <p>A3.2: Y. Oda, A study of RF power station for microwave rocket launch system</p> <p>A3.3: M. Takahashi, Numerical modeling for microwave breakdown on a beaming rocket supported by an external magnetic field</p> <p>A3.4: G. Sotnikov, Excitation of wakefields by relativistic electron bunches in the dielectric waveguide filled with radially inhomogeneous plasma</p> <p>A3.5: V. Vdovin, Data rates of SubTHz wireless telecommunication channels</p>	<p>H2.1 (invited): A. Shalashov, Electron-cyclotron waves in large-scale open traps: new questions highlighted by recent experiments</p> <p>H2.2: P. Bagryansky, Stable plasma confinement with auxiliary ECR heating in a gas dynamic trap</p> <p>H2.3: E. Gospodchikov, Plasma heating by microwaves in high-β devices</p> <p>H2.4: P. Aleynikov, 3D full-wave modelling and mode conversion in realistic W7-X plasmas</p> <p>H2.5: A. Shalashov, Quasi-optical approach for inhomogeneous dissipative media with high-order spatial dispersion</p>
16:30 – 17:00	COFFEE BREAK		

ORAL SESSIONS			
	Session S-3 (Hall A)	Session A-4 (Hall B)	Session T-3 (Hall C)
17:00 – 19:00	<p>S3.1: P. Strelkov, Plasma relativistic microwave amplifier</p> <p>S3.2: A. Kaminsky, Development of powerful Ka-band FEM-amplifiers with broad frequency tuning</p> <p>S3.3: N. Peskov, Powerful narrow-band relativistic masers with Bragg resonators operating from mm to sub-mm wavelength band: recent results and prospects</p> <p>S3.4: A. Malkin, Surface-wave Bragg resonators for terahertz frequency range</p> <p>S3.5: M. Fuks, Magnetron on a lengthy virtual cathode with a magnetic mirror</p>	<p>A4.1 (invited): K. Hassouni, High power density microwave plasmas for diamond deposition</p> <p>A4.2: V. Yurov, Optical emission spectroscopy for diagnosis of diamond growth and etching processes in microwave plasma</p> <p>A4.3: M. Lobaev, Dependence of boron incorporation in delta layers on CVD diamond growth process and misorientation angle</p> <p>A4.4: M. Fukunari, Experiments on the millimeter-wave discharge in atmosphere at 170 GHz and 28 GHz in the subcritical condition</p> <p>A4.5: K. Hamasaki, Numerical study of discharge physics induced by a subcritical microwave under air atmosphere</p>	<p>T3.1 (invited): A. Shkurinov, Introduction into nonlinear THz photonics: basis and their potential applications</p> <p>T3.2 (invited): A. Stepanov, Strong terahertz fields: interaction with condensed matter and electron acceleration</p> <p>T3.3: Y. Li, Bursts of terahertz radiation from relativistic laser-plasma interactions</p> <p>T3.4: A. Ushakov, 3D terahertz beam profiling from two color laser induced plasma with different focusing</p> <p>T3.5: D. Sitnikov, Generation of high power terahertz pulses and applications</p>
19:00 – 20:00	DINNER		
20:30 – 21:30	CONCERT		

8:00 – 9:00	BREAKFAST		
09:00 – 10:00	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.16: J. Li (<i>Institute of Plasma Physics, China</i>), ECRH on CFETR - physics and technology needed</p> <p>P.17: E. Gusakov (<i>Ioffe Institute, Russia</i>), Anomalous absorption in ECRH experiments due to parametric excitation of localized UH waves</p>		
10:00 – 13:00	TIME IN COPRINO		
13:00 – 14:30	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.18: A. Krasilnikov (<i>Institution "Project Center ITER", Russia</i>), Status of ITER program</p> <p>P.19: W. Kasperek (<i>Institute of Interfacial Process Engineering and Plasma Technology, Germany</i>), Optics for electron cyclotron resonance heating and collective Thomson scattering at the stellarator W7-X</p> <p>P.20: M. Yalandin (<i>Institute of Electrophysics, Russia</i>), Relativistic microwave oscillators with high power flux in a free space and interaction zone</p>		
14:30 – 15:30	LUNCH		
15:30 – 17:00	ORAL SESSIONS		
	<p style="text-align: center;">Session S-4 (Hall A)</p> <p>S4.1 (invited): M. Thumm, The gyrotron – a natural source of high-power orbital angular momentum millimeter-wave beam</p> <p>S4.2: S. Ruess, Design and manufacturing process for the KIT 2-MW 170-GHz coaxial-cavity longer-pulse gyrotron</p> <p>S4.3: A. Marek, Simulation of electromagnetic fields scattered from arbitrary shaped electric conductors</p> <p>S4.4: M. Petelin, Grating-based millimeter-wave quasi-optical components</p> <p>S4.5: D. Sobolev, Polarization-dependent TE₁₁-to-TE₁₁/TE₀₁ waveguide mode converter for transmission line mode switching</p>	<p style="text-align: center;">Session H-3 (Hall B)</p> <p>H3.1 (invited): A. Melnikov, ECRH effect on the electric potential in toroidal plasmas (overview of recent T-10 tokamak and TJ-II stellarator results)</p> <p>H3.2: S. Lebedev, Observation of ion cyclotron emission from Ohmically and NBI heated plasmas in TUMAN-3M tokamak</p> <p>H3.3: K. Brunner, Continuous high power microwave heating at the W7-X stellarator</p> <p>H3.4: S. Lashkul, Isotopic effect in experiments on lower hybrid current drive in the FT-2 tokamak</p> <p>H3.5: L. Simonchik, Decay of the X-mode into two upper-hybrid plasmons in the plasma filament. Experimental modeling and theoretical description</p>	<p style="text-align: center;">Session T-4 (Hall C)</p> <p>T4.1: (invited) Y. Matsuki, Advanced instrumentations for DNP-enhanced solid-state NMR and biological applications</p> <p>T4.2: (invited) S. Morozov, THz and multi-THz lasers based on HgCdTe quantum well nanostructures</p> <p>T4.3: M. Fukunari, Study on starting current and oscillation frequency of a multi-frequency-band frequency tunable gyrotron</p> <p>T4.4: O. Cherkasova, Terahertz spectroscopy for diabetes diagnostics</p> <p>T4.5: A. Arzhannikov, High-performance spectrally selective pyroelectric detection of millimeter and submillimeterwaves using ultra-thin metasurface absorbers</p>
17:00 – 17:30	COFFEE BREAK		

POSTER SESSION: Symposia A, H	
17:30 – 19:00	<p>AP.1: K. Shimamura, Development of 94 GHz MEMS rectifier for wireless power transfer applications</p> <p>AP.2: S. Prasanna, Effect of methane on stability of plasma in a MW-assisted hydrogen-methane plasma</p> <p>AP.3: M. Dukhnovsky, Simulation of thermal fields in the output window of electrons from polycrystalline diamond for electron gun</p> <p>AP.4: Yu. Fedorov, Diamond window for electron gun</p> <p>AP.5: N. Kharchev, Use of microwave pulse train for plasma-chemical experiments on high-pressure discharges</p> <p>AP.6: A. Sorokin, Microstructure of the microwave fast-sintered MgAl₂O₄ ceramics</p> <p>AP.7: A. Vodopyanov, High rate production of nanopowders by the evaporation–condensation method using gyrotron radiation</p> <p>AP.8: T. Krapivnitskaia, High-temperature microwave pyrolysis of peat as a method to obtaining liquid and gaseous fuels</p> <p>AP.9: I. Abramov, Theory of resonant stationary discharge with multiply charged ions in plasma flow propagating in mirror magnetic trap</p> <p>AP.10: I. Izotov, Study of plasma parameters in a continuous ECR discharge sustained by 24 GHz/5 kW gyrotron radiation in a quasi-gasdynamic mode</p> <p>AP.11: R. Lapin, First experiments on applying the gasdynamic ECR ion source for negative hydrogen ion production</p> <p>AP.12: S. Golubev, New approach for a “point-like” neutron source creation based on sharp focusing of a high quality deuteron beam produced by high-current gasdynamic ECR ion source</p> <p>AP.13: A. Tsvetkov, Reaching high sensitivity of radio-acoustic spectroscopy using «strong microwaves»</p> <p>AP.14: A. Vikharev, Study of grown single crystal diamond by optical and X-ray spectroscopy</p> <p>AP.15: V. Zapevalov, High-power microwaves against locusts and other harmful animals</p> <p>AP.16: S. Razin, Gas breakdown by a focused beam of THz waves</p> <p>AP.17: S. Razin, Light emission properties of a discharge induced in a gas flow by terahertz waves in the vacuum and extreme ultraviolet range</p> <p>AP.18: M. Glyavin, A possibility of remote detection of air breakdown in a focal spot of microwave beam using reflected signal</p> <p>AP.19: M. Glyavin, Theory of initial stage of the breakdown in non-uniform gas flow</p> <p>HP.1: S. Hansen, Parametric decay instability near the upper hybrid resonance and anomalous mm-wave scattering in tokamak and stellarator plasmas</p> <p>HP.2: I. Roy, Status and design of ECRH/CD system of the upgrade of the tokamak T-15</p> <p>HP.3: E. Gospodchikov, Quasi-optical approach to reconstruction of plasma fluctuations using amplitude distribution of transmitted microwave beam</p> <p>HP.4: E. Gospodchikov, Electron cyclotron heating and diagnostics of plasma at the second harmonic in the GDT device</p>
19:15 – 22:00	CONFERENCE DINNER

8:00 – 9:00	BREAKFAST		
9:00 – 12:00	EXCURSION TO TVER		
12:00 – 12:30	COFFEE BREAK		
12:30 – 14:00	<p style="text-align: center;">PLENARY SESSION (Hall A)</p> <p>P.21: T. Ozaki (<i>INRS-EMT, Canada</i>) Advances in nonlinear THz optics at the Canadian Advanced Laser Light Source – from bleaching to harmonic generation</p> <p>P.22: N. Matlis (<i>Deutsches Elektronen-Synchrotron DESY, Germany</i>) Acceleration of electrons in THz driven structures</p> <p>P.23: N. Ginzburg, (<i>Institute of Applied Physics, Russia</i>), Generation of single and periodically repeated powerful ultrashort microwave pulses</p>		
14:00 – 15:00	LUNCH		
15:00 – 16:30	ORAL SESSIONS		
	Session S-5 (Hall A)	Session A-5 (Hall B)	Session H-4 (Hall C)
	<p>S5.1 (invited): G. Nusinovich, Review of the gyrotron theory</p> <p>S5.2: S. Copplestone, Simulation of gyrotrons using the high-order particle-in-cell code PICLas</p> <p>S5.3: P. Ortwein, Benchmarking a high-order particle-in-cell code for the simulation of a gyrotron - traveling wave tube</p> <p>S5.4: Yu. Novozhilova, Influence of mode competition and external wave frequency modulation on gyrotron frequency locking</p> <p>S5.5: A. Fokin, High precision frequency stabilization of a 263 GHz continuous wave gyrotron</p>	<p>A5.1 (invited): A. Galdetskiy, Cooperation and competition of solid state and vacuum microwave devices in radar applications</p> <p>A5.2: N. Skvortsova, Synthesis of micro- and nano-structures with controllable composition in the chain plasma-chemical reactions initiated by the radiation of a powerful gyrotron in the mixtures of metal-dielectric powders</p> <p>A5.3: S. Sedykh, Influence of intense coherent electromagnetic radiation on several types of radioactive decay</p> <p>A5.4: L. Simonchik, Microwave pulse delay at propagation through the 1D electromagnetic crystals</p>	<p>H4.1 (invited): D. Mansfeld, Kinetic instabilities in non-equilibrium plasma: a review of observations</p> <p>H4.2: A. Phelps, Laboratory experiments simulating electron cyclotron masers in space</p> <p>H4.3: M. Viktorov, Observation of multiple chirping events in electron cyclotron emission of non-equilibrium mirror-confined plasma</p> <p>H4.4: A. Bruschi, Fast events detection with the CTS diagnostic on FTU and plans for improvement</p>
16:30 – 17:00	COFFEE BREAK		

ORAL SESSIONS			
17:00 – 18:30	Session S-6 (Hall A)	Session T-5 (Hall B)	Session H-5 (Hall C)
	<p>S6.1 (invited): A. Phelps, Progress in microwave to sub-THz sources at Strathclyde</p> <p>S6.2: I. Chelis, Development of a self-consistent simulation code for the electron cyclotron interaction in dielectric-loaded gyrotron beam tunnels</p> <p>S6.3: V. Tarakanov, Code KARAT in simulations of power microwave sources including Cherenkov plasma devices, vircators, orotron, E-field sensor, calorimeter etc.</p> <p>S6.4: V. Zaslavsky, Simulations of powerful microwave oscillators with oversized electrodynamic systems</p> <p>S6.5: A. Leontyev, W-band 5 MW pulse relativistic gyrotron. Development and experimental implementation</p>	<p>T5.1: W. Fu, Harmonic terahertz gyrotron with quasi-optical confocal cavity</p> <p>T5.2: X. Yuan, A 0.22 THz gyrotron based on carbon nanotube cold cathode</p> <p>T5.3: V. Bulgakova, Sub-wavelength plane gratings for terahertz plasmonic sensing of liquids</p>	<p>H5.1: Y. Zhao, The design and verification of ECRH polarization control system on EAST</p> <p>H5.2: D. Malakhov, Filters for diagnostic of Doppler reflectometry on the L-2M stellarator for operation under conditions of high ECR heating power</p> <p>H5.3: N. Kharchev, ECR system for plasma heating at stellarator L-2M</p> <p>H5.4: J. Xie, Interferometer system for Keda Torus eXperiment using terahertz solid-state diode sources</p>
19:00 – 19:30	CLOSING SESSION (Hall A)		
20:00 – 21:00	DINNER		
21:00 – 22:00	CONCERT		

SATURDAY, July 22

8:00 – 9:00	BREAKFAST
9:00	ARRIVAL IN MOSCOW

Workshop Timetable

Time	Monday, July 17	Tuesday, July 18	Wednesday, July 19	Thursday, July 20	Friday, July 21	Saturday, July 22
07:30	0:00 – 9:00 Registration	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
08:00	9:00 Departure from Nizhny Novgorod					
08:30		Breakfast	Plenary session P7, P8, P9	Plenary session P13, P14, P15	Plenary session P16, P17	Excursion to Tver'
09:00						
09:30	Opening session	Coffee break, Stop in Plyos (10:00 – 11:30)	Excursion to Yaroslavl'	Stop in Coprino	Coffee break	
10:00						
10:30	Plenary session P1, P2, P3	Plenary session P10, P11, P12	Plenary session P18, P19, P20	Plenary session P21, P22, P23		
11:00						
11:30	Coffee break	Lunch	Lunch	Lunch		
12:00						
12:30	Plenary session P4, P5, P6	Lunch	Lunch	Lunch		
13:00						
13:30	Lunch	Excursion to Kostroma	Oral sessions T-2: Hall A A-3: Hall B H-2: Hall C	Oral sessions S-4: Hall A H-3: Hall B T-4: Hall C	Oral sessions S-5: Hall A A-5: Hall B H-4: Hall C	
14:00						
14:30	Lunch	Excursion to Kostroma	Coffee break	Coffee break	Oral sessions S-6: Hall A T-5: Hall B H-5: Hall C	
15:00						
15:30	Oral sessions S-1: Hall A A-1: Hall B H-1: Hall C	Poster session Symposia S and T	Oral sessions S-3: Hall A A-4: Hall B T-3: Hall C	Poster session Symposia A and H	Closing session	
16:00						
16:30	Coffee break	Dinner	Dinner	Conference dinner	Dinner	
17:00						
17:30	Oral sessions S-2: Hall A A-2: Hall B T-1: Hall C	Dinner	Concert	Concert		
18:00						
18:30	Welcome party	Concert	Concert	Concert		
19:00						
19:30	Welcome party	Concert	Concert	Concert		
20:00						
20:30	Welcome party	Concert	Concert	Concert		
21:00						
21:30	Welcome party	Concert	Concert	Concert		
21:30						

"NIZHNY NOVGOROD" SHIP SCHEME

