

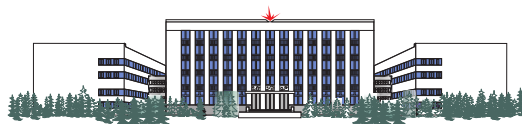
# 11<sup>th</sup> International Conference on Open Magnetic Systems for Plasma Confinement

Monday 08 August 2016 - Friday 12 August 2016

## Programme



**FASO Russia**  
FEDERAL AGENCY  
OF SCIENTIFIC ORGANIZATIONS



**BUDKER INSTITUTE OF  
NUCLEAR PHYSICS**

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# MONDAY, 8 AUGUST 2016

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**Bus transfer from hotels to the BINP at 16:00.**

**Registration (14:00–17:20)**

will be held in the main building of the BINP.

**Welcome party (18:00–20:00)**

will take place on the 13<sup>th</sup> floor of the Technopark (12 Nikolayev street).

Bus transfer from the main BINP building to Technopark will be provided at 17:30.

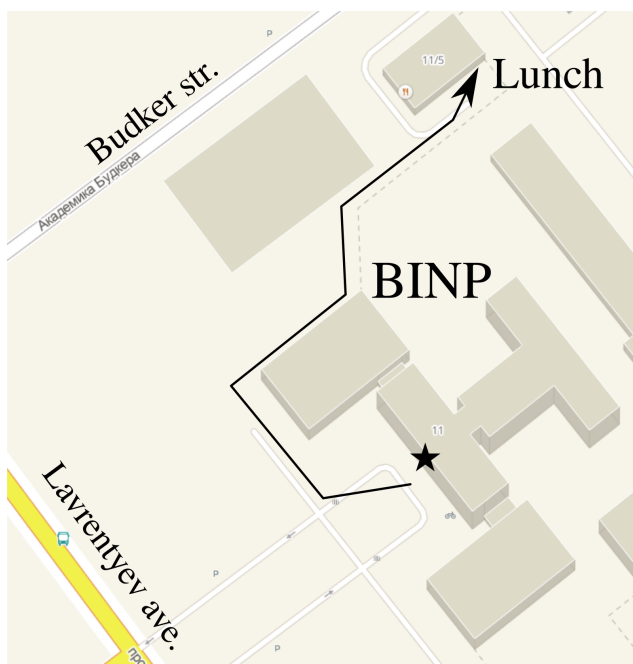
## Conference Info

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**All sessions will take place in the BINP conference hall.**

**Recommended lunch cite is the BINP canteen (see map below).**

Please prepeare the lunch coupons provided in the conference bag.



★ – **main entrance of the BINP**  
(place of departure to welcome party and banquet)

**Book of Abstracts Online**



**Map of Surrounding Online**



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# TUESDAY, 9 AUGUST 2016

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## **Bus transfer from hotels to the BINP at 08:30.**

## **Opening of the conference (09:00–09:20)**

Chairman: Prof. Ivanov, Alexander

Welcome speech: Prof. P. V. Logachev, director of the Budker Institute of Nuclear Physics SB RAS

## **Current status of open magnetic systems for plasma confinement**

Chairman: Prof. Ivanov, Alexander (Budker Institute of Nuclear Physics SB RAS)

### **09:20 Overview of Recent Progress and Future in GAMMA 10/PDX Project**

Prof. NAKASHIMA, Yousuke (Plasma Research Center, University of Tsukuba)

### **10:00 Recent Progress of Plasma Confinement and Heating Studies in the Gas Dynamic Trap**

Dr. BAGRYANSKY, Peter (Budker INP SB RAS, Novosibirsk, Russia)

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### **10:40 Coffee break**

Chairman: Prof. Nakashima, Yousuke (Plasma Research Center, University of Tsukuba)

### **11:10 Up-grade Status of PLAMIS-II**

Dr. LHO, Taihyeop (Plasma Technology Research Center, National Fusion Research Institute, Korea)

### **11:50 Construction of KMAX-FRC Experiment**

Prof. SUN, Xuan (University of Science and Technology of China)

### **12:30 Status of GOL-NB Project**

Dr. POSTUPAEV, Vladimir (Budker INP SB RAS, Novosibirsk, Russia)

### **12:50 FRC Sustainment**

Dr. YUSHMANOV, Peter (Tri Alpha Energy)

## **Lunch (13:10–14:10)**

## **Plasma confinement, heating and stability**

Chairman: Prof. Forest, Cary (University of Wisconsin, Madison)

### **14:10 Kinetic instabilities in a mirror-confined plasma sustained by high-power microwave radiation**

Dr. VIKTOROV, Mikhail (Institute of Applied Physics of Russian Academy of Sciences)

### **14:50 Mitigation of drift instabilities by a small radial flux of charged particles through the Landau-resonant layer**

Dr. KABANTSEV, Andrey (University of California, San Diego)

### **15:10 Sustainment of beam-driven FRC plasma at C-2U**

Dr. KOREPANOV, Sergey (Tri Alpha Energy)

### **15:30 Feedback effect on flute dynamics in a mirror machine**

Dr. BE'ERY, Ilan (Rafael Plasma Lab)

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### **15:50 Coffee break**

Chairman: Dr. Lho, Taihyeop (National Fusion Research Institute, Korea)

### **16:10 Improved Plasma Confinement at High Beta**

Dr. BEKLEMISHEV, Alexei (Budker INP SB RAS, Novosibirsk, Russia)

### **16:30 Concept Exploration Helical Mirror Device: Design and Status**

Dr. SUDNIKOV, Anton (Budker INP SB RAS, Novosibirsk, Russia)

### **16:50 Development of New Mirror Antenna for Generation of High Intermittent Heat Flux in GAMMA 10 Tandem Mirror**

Dr. MINAMI, Ryutaro (Plasma Research Center, University of Tsukuba)

### **17:10 Transportation of plasma jet in GOL-NB multiple-mirror trap**

Dr. IVANOV, Ivan (Budker INP SB RAS, Novosibirsk, Russia)

## **Concert (18:00–19:00)**

Brass-quintet will perform in the BINP conference hall.

## **Bus transfer from the BINP to hotels at 19:15.**

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# WEDNESDAY, 10 AUGUST 2016

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**Bus transfer from hotels to the BINP at 08:30.**

## **Transport phenomena**

Chairman: Dr. Kreter, Arkadi (Forschungszentrum Juelich)

09:00 **Direct measurement of the plasma leak-width in an optimized, high ionization fraction multi-dipole ring cusp**

Prof. FOREST, Cary (University of Wisconsin, Madison)

09:40 **Electron dynamics in SOL plasma with expander divertor**

Dr. YUSHMANOV, Peter (Tri Alpha Energy)

10:00 **Study of plasma electron thermal conductivity in the magnetic mirror**

Dr. SOLDATKINA, Elena (Budker INP SB RAS, Novosibirsk, Russia)

10:20 **Particle-in-cell simulation of field reversal in an mirror trap with neutral beam injection**

Dr. CHERNOSHTANOV, Ivan (Budker INP SB RAS, Novosibirsk, Russia)

10:40 **Preferential confinement and field-aligned acceleration of energetic ions in a Reversed Field Pinch**

ANDERSON, Jay (University of Wisconsin-Madison)

11:00 **3D Ion Distribution Resulting from Neutral Beam and ICRF Heating in an Axisymmetric Mirror**

Dr. HARVEY, R.W. (Bob) (CompX)

## **Photographing (11:40–12:00)**

will take place near the BINP main entrance.

Hard copies of photos will be handed out by the organizing committee.

Electronic copies will be available on the conference site.

## **Lunch (12:00–13:00)**

## **Excursions to experimental facilities of Budker INP (13:00–15:00)**

- Long open plasma trap GOL-3
- Gas Dynamic Trap (GDT)
- $e^+e^-$  collider VEPP-2000
- Stand for Neutral Beam Injectors (NBI)

Meeting point for excursions will be near the organizing committee, third floor of the BINP main building, room 331.

## **Poster session (15:00–18:00)**

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15:00–15:30 *Coffee break*

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**Authors are requested to put up their posters at 9.00.**

**Bus transfer from the BINP to hotels at 18:10.**

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# THURSDAY, 11 AUGUST 2016

**Bus transfer from hotels to the BINP at 08:30.**

## Prospects of mirror-based reactors

Chairman: Prof. Sun, Xuan (University of Science and Technology of China)

09:00 **Multiple Mirror Trap: Milestones and Future**

Prof. BURDAKOV, Aleksandr (Budker INP SB RAS, Novosibirsk, Russia)

09:40 **pB11 fusion: trends and physics issues**

Dr. DUNAEVSKY, Alexander (Tri Alpha Energy)

10:20 **The BINP Road Map for Development of Fusion Reactor Based on a Linear Machine**

Prof. IVANOV, Alexander (Budker INP SB RAS, Novosibirsk, Russia)

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11:00 *Coffee break*

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## Mirror-based 14 MeV neutron sources

Chairman: Prof. Burdakov, Aleksandr (Budker Institute of Nuclear Physics SB RAS)

11:20 **Neutron yield from high-pressure NBI-sustained deuterium plasma**

Dr. CHIRKOV, Alexei (Bauman Moscow State Technical University)

11:40 **Optimization of GDT- and GDMT-based neutron sources with Hooke-Jeeves and differential evolution algorithms**

Mr. YUROV, Dmitry (Budker INP SB RAS, Novosibirsk, Russia)

12:00 **Improvement of Fusion Energy Gain of GDT Based Fusion Neutron Source by**

Dr. CHEN, Dehong (Key Laboratory of Neutronics and Change of Neutral Beam Injection  
Position Radiation Safety, Institute of Nuclear Energy Safety Technology, Chinese Academy of Sciences)

12:20 **Mirror based fusion neutron source: current status and prospective**

Dr. ANIKEEV, Andrey (Budker INP SB RAS, Novosibirsk, Russia)

12:40 **Subcritical assembly with fusion neutron source as a device for studies of neutron-physical characteristics of thorium fuel**

Prof. ARZHANNIKOV, Andrey (Novosibirsk State University)

**Lunch (13:00–14:00)**

## Plasma-wall interaction

Chairman: Dr. Bagryansky, Peter (Budker Institute of Nuclear Physics SB RAS)

14:00 **Recent Results of Characterization of Detached Plasma in Divertor Simulation**

Prof. NAKASHIMA, Yousuke (Plasma Research Center, Experiments Using the GAMMA 10/PDX  
Tandem Mirror, University of Tsukuba)

14:20 **Hydrogen recycling study utilizing end region in the GAMMA 10/PDX tandem mirror**

Prof. SAKAMOTO, Mizuki (Plasma Research Center, University of Tsukuba)

14:40 **Ion sensitive probe measurement of the GAMMA 10/PDX divertor simulation plasma**

Dr. EZUMI, Naomichi (Plasma Research Center, University of Tsukuba)

15:00 **Study of tungsten impurity formation and its dynamics at plasma gun facility MK-200 under condition relevant to transient events in ITER**

Mr. POZNYAK, Igor (SRC RFTRINITI)

15:20 **Applications of synchrotron radiation scattering for studies of plasma facing components in Siberian Synchrotron and Terahertz Radiation Centre**

Dr. ARAKCHEEV, Aleksey (Budker INP SB RAS, Novosibirsk, Russia)

15:40 **Novel electron beam based test facility for observation of dynamics of tungsten erosion under intense elm-like heat loads**

Dr. VYACHESLAVOV, Leonid (Budker INP SB RAS, Novosibirsk, Russia)

16:00 **Recent results of plasma-material interaction studies in the linear plasma device PSI-2**

Dr. KRETER, Arkadi (Forschungszentrum Juelich)

**Departure from the BINP main entrance to the Banquet at 16:30.**

**Banquet (18:00–22:00)**

Will take place in the hotel "Borviha".

A bus will be provided for the return trip after the end of the banquet.



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# FRIDAY, 12 AUGUST 2016

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**Bus transfer from hotels to the BINP at 08:30.**

## Plasma diagnostics

Chairman: Prof. Shalashov, Alexander (Institute of Applied Physics of Russian Academy of Sciences)

09:00 **Development of motional Stark effect diagnostic with laser-induced fluorescence for measurement of magnetic field in high-beta plasmas**

Dr. LIZUNOV, Andrej (Budker INP SB RAS, Novosibirsk, Russia)

09:20 **Status of GAMMA 10/PDX-Thomson scattering system**

Dr. YOSHIKAWA, Masayuki (University of Tsukuba)

09:40 **Developing a high resolution Thomson scattering system**

Dr. LEE, Kiyong (National Fusion Research Institute)

10:00 **Visible light tomography diagnostic for imaging of spatial profiles of plasma emission in the gas dynamic trap divertor**

Mr. BORISSENKO, Yakov (Budker INP SB RAS, Novosibirsk, Russia)

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10:20 *Coffee break*

Chairman: Dr. Chen, Dehong (Institute of Nuclear Energy Safety Technology, Chinese Academy of Sciences)

10:40 **Jet Outflow Measurements on the C-2U Advanced Beam-Driven Field-Reversed Configuration Plasma Experiment**

Dr. SHEFTMAN, Daniel (Tri Alpha Energy)

11:00 **Development of internal ICRF wave detection using microwave reflectometry on GAMMA 10**

Dr. IKEZOE, Ryuya (Plasma Research Center, University of Tsukuba)

11:20 **First results of ECE measurements at the GDT mirror trap**

Mr. SOLOMAKHIN, Alexander (Budker INP SB RAS, Novosibirsk, Russia)

**Lunch (12:00–13:00)**

## Applications of mirror plasmas

Chairman: Prof. Sakamoto, Mizuki (Plasma Research Center, University of Tsukuba)

13:00 **ECR discharge startup in the Gas Dynamic Trap**

Mr. YAKOVLEV, Dmitry (Budker INP SB RAS, Novosibirsk, Russia)

Prof. SHALASHOV, Alexander (Institute of Applied Physics of Russian Academy of Sciences)

13:30 **Mechanisms of enhanced electromagnetic emission in laboratory beam-plasma systems**

Dr. TIMOFEEV, Igor (Budker INP SB RAS, Novosibirsk, Russia)

13:50 **Development of high-power gas discharge and electronic vacuum devices for pulsed electrophysic. Current status and prospects**

Dr. BOCHKOV, Victor (Pulsed Technologies Ltd.) and Mr. BOCHKOV, Dmitriy (Pulsed Technologies Ltd.)

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14:10 *Coffee break*

14:30 **Formation of UV-radiating strongly non-equilibrium plasma with multiply charged ions in the expanding high-pressure gas jet**

Prof. SHALASHOV, Alexander (Institute of Applied Physics RAS)

14:50 **Beam-Plasma System as a Source of Powerful Submillimeter and Terahertz Radiation (Experimental and Theoretical studies)**

Prof. ARZHANNIKOV, Andrey (Novosibirsk State University)

**Conference closing (15:10–15:30)**

**Bus transfer from the BINP to hotels at 15:40.**