Synchrotron and Free electron laser Radiation: generation and application (SFR-2016)

Monday 04 July 2016 - Thursday 07 July 2016

Budker INP

Programme

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Monday 04 July 2016

Registration - Conference Hall (08:30-09:30)

Opening Ceremony - Conference Hall (09:30-09:40)

Radiation sources and Centers - Conference Hall (09:40-11:00)

- Conveners: Mr. Kulipanov, Gennady (Director of SSTRC)

time	title	presenter
09:40	The MAX IV Accelerator Facility, concept, status and perspectives (00h40')	Prof. ERIKSSON, Mikael (MAX IV Laboratory)
10:20	Novosibirsk Free Electron Laser – unique source of the terahertz and infrared coherent radiation (00h40')	Dr. SHEVCHENKO, Oleg (BINP)

Coffee - 4th floor foyer (11:00-11:30)

Radiation sources and Centers: Part II - Conference Hall (11:30-12:50)

- Conveners: Prof. Eriksson, Mikael (MAX IV Laboratory)

time	title	presenter
11:30	Accelerator development at NSRRC-from the first 3rd-generation light source in Asia to a low-emittance photon source (00h40')	Dr. LUO, Gwo-Huei (NSRRC)
12:10	Status of Siberian Synchrotron and Teraherz Radiation Center. Activity review. (00h40')	Dr. ZOLOTAREV, Konstantin (Budker Institute of Nuclear Physics)

Group photo - Main Entrance (12:50-13:00)

Lunch - (13:00-14:00)

Radiation sources and Centers: Part III - Conference Hall (14:00-15:40)

- Conveners: Prof. Vinokurov, Nikolay (Budker INP)

time	title	presenter
14:00	Possibilities for future SR and FEL development in the UK (00h40')	Dr. WALKER, Richard (Diamond Light Source)
14:40	Progress in the design and related studies on the High Energy Photon Source (00h40')	Dr. JIAO, Yi (Institute of High Energy Physics)
15:20	NSLS-II Booster (00h20')	Mr. GUROV, Sergey (BINP)

Coffee - 4th floor foyer (15:40-16:00)

Radiation sources and Centers: Part IV - Conference Hall (16:00-18:10)

- Conveners: Prof. Levitchev, Eugeny (Budker INP)

time	title	presenter
16:00	Present Status and Perspectives of Long Wavelength Free Electron Lasers at Kyoto University (00h30')	Dr. ZEN, Heishun (Institute of Advanced Energy, Kyoto University)

16:30	Status and Perspectives of Compton Sources (00h30')	Dr. HAJIMA, Ryoichi (National Institutes for Quantum and Radiological Science and Technology)
17:00	Fabrication of high effective power silicon diffractive optics of terahertz range by femtosecond laser ablation of silicon surface (00h30')	Prof. PAVELYEV, Vladimir (Samara University)
17:30	Synchrotron radiation research and application at VEPP-4 (00h20')	Mr. PIMINOV, Pavel (BINP SB RAS)
17:50	Superconducting 72-pole indirect cooling 3Tesla wiggler for CLIC dumping ring and ANKA image beamline (00h20')	Dr. SHKARUBA, Vitaliy (BINP)

Welcome Party - BINP Canteen (18:30-21:00)

Tuesday 05 July 2016

Invited Talks: Part I - Conference Hall (09:00-11:00)

- Conveners: Prof. Seryi, Andrei (John Adams Institute)

time	title	presenter
09:00	My profession is using of synchrotron radiation in the structural biology of tissue (00h40')	Dr. VAZINA, Alvina (Institute of theoretical and experimental biophysics, RAS)
09:40	X-ray Dark-Field Imaging (XDFI): Recent Developments and Clinical Applications (00h40')	Prof. ANDO, Masami (Tokyo University of Science)
10:20	20 years of X-ray refractive optics: Status and New opportunities for diffraction limited X-ray sources. (00h40')	Dr. SNIGIREV, Anatoly (Immanuel Kant Baltic Federal University)

Coffee - 4th floor foyer (11:00-11:20)

Biomedical application of SR and THz radiation: Part I - Conference Hall (11:20-13:00)

- Conveners: Prof. Moshkin, Mikhail (Institute of Cytology and Genetics SB RAS)

time	title	presenter
11:20	Biomedical Applications of Terahertz Radiation (00h20')	Dr. WALLACE, Vincent (UWA)
11:40	The study of the nonthermal effects of terahertz radiation on living systems. (00h20')	Prof. PELTEK, Sergey (Institute of Cytology and Genetics SB RAS (Novosibirsk, Russia))
12:00	Radiation therapy of human glioma tumors experiments in SSTRC (00h20')	Dr. KUPER, Konstantin (Budker Institute of Nuclear Physics)
12:20	Nanoradiator therapy and synchrotron X-ray imaging of malignant brain tumor (00h20')	Prof. KIM, Jong-Ki (Catholic University of Daegu, School of Medicine)
12:40	Investigation of the principles of detection of small amounts of nanoparticles of drugs and their conglomerates during the synthesis and transport in vivo using methods of X-ray synchrotron radiation (00h20')	Mr. ANCHAROV, Alexey (Institute of Solid State Chemistry and Mechanochemistry SB RAS)

Lunch - (13:00-14:00)

Biomedical application of SR and THz radiation: Part II - Conference Hall (14:00-15:40)

- Conveners: Dr. Zolotarev, Konstantin (Budker Institute of Nuclear Physics)

time	title	presenter
14:00	Study of the THz response of protein solutions at different stages of glycation (00h20')	Dr. CHERKASOVA, Olga (Institute of Laser Physics of SB RAS)
14:20	Structural parameters of macroscopically flat lipid multilayers on a silica sol substrates (00h20')	Mr. VOLKOV, Yuriy (Shubnikov Institute of Crystallography, FSRC “Crystallography and Photonics” RAS)

14:40	Synchrotron Small-Angle X-Ray Scattering as Universal Instrument of Structural Analysis of Bio and Nanosystems (00h20')	Dr. SHTYKOVA, Eleonora (Shubnikov Institute of Crystallography of Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Sciences)
15:00	The possibility of direct analysis of biological tissues of a few milligrams by SR XRF method (00h20')	TRUNOVA, Valentina (Nikolaev Institute of Inorganic Chemistry SB RAS)
15:20	Analysis of K-lines X-ray fluorescence of Rare-Earth and High-Z elements on storage ring of the VEPP-4M (00h20')	Mr. LEGKODYMOV, Aleksandr (Alekseevich)

Coffee - 4th floor foyer (15:40-16:00)

Poster Session - 2nd and 3rd floors (16:00-17:00)

Second and third floors

- Conveners: Dr. Kuzin, Maksim (Budker INP SB RAS); Mr. Nikolenko, Anton (BINP)

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Structure and properties of ZnSxSe1-x alloy nanostructures embedded in anodic alumina membrane (01h00')	Mr. CHUKAVIN, Andrey	005
Spatial microstructure of multilayered heterosystems, containing Ge quantum dots molecules in Si on the stages of their nucleation and growth by EXAFS spectroscopy (01h00')	Dr. ERENBURG, Simon	006
Exciton-like and defect-related luminescence in K3WO3F3 oxyfluoride crystals (01h00')	Prof. PUSTOVAROV, Vladimir	007
XAFS study of model flotation system - xanthate/zinc sulphate: stuctural determination of interaction forms existing in aqueous solution and deposition. (01h00')	Dr. KRIVENTSOV, Vladimir	008
NEXAFS study of molecular arrangement in polyaniline films prepared by electrochemical deposition (01h00')	Dr. SYUGAEV, Alexander	009
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Obtaining Soft X-ray Emission and Absorption Spectra using SR from the VEPP-4 storage ring on the metrology station "Cosmos" (01h00')	Mr. KOROTAEV, Evgeniy	011
XANES investigation of the chromium dichalcogenides CuCr_{1-x}M’S₂ and MCrX₂ (01h00')	Mr. KOROTAEV, Evgeniy	012
IN-SITU INVESTIGATION OF THERMO-STIMULATED DISSOLUTION OF HYDRIDES IN TITANIUM AND ZIRCONIUM BY MEANS OF SHORT-WAVE DIFFRACTION OF SYNCHROTRON RADIATION (01h00')	Dr. LAPTEV, Roman	013

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Spartacus Ballet. - (17:00-21:00)

Wednesday 06 July 2016

Invited Talks: Part II - Conference Hall (09:00-11:00)

- Conveners: Prof. ANDO, Masami (Tokyo University of Science)

time	title	presenter
09:00	Semiconductor spectroscopy with infrared and terahertz free-electron lasers (00h40')	Dr. SCHNEIDER, Harald (Helmholtz-Zentrum Dresden-Rossendorf)
09:40	Novosibirsk free electron laser as a user facility (00h40')	Prof. KNYAZEV, Boris (Budker Institute of Nuclear Physics)
10:20	The nanosecond time resolved X-ray diffractometry with synchrotron radiation for exploration of fast processes in solids (00h40')	Prof. TOLOCHKO, Boris (Institute of solid state chemistry and mechanochemistry SB RAS)

Coffee - 4th floor foyer (11:00-11:20)

FEL-based study and THz radiation application: Part I - Parallel session Hall (11:20-13:00)

- Conveners: Prof. Potaturkin, Oleg (Institute of automation SB RAS)

time	title	presenter
11:20	FEL-based study of intervalley elastic scattering of donor excited states in multivalley semiconductors (00h40')	Prof. SHASTIN, Valery (IPM RAS)
12:00	Synchrotron radiation X-ray tomographic microscopy, noble gas mass spectroscopy, infrared and Raman microscopy correlated study of the Itokawa asteroid particles returned by the Hayabusa space probe (00h30')	Dr. PAVLOV, Sergey (German Aerospace Center)
12:30	Single-pulse high-resolution spectroscopy on NovoFEL: methods, applications and development (00h30')	Dr. KUBAREV, Vitaly (BINP)

X-ray structural analysis: Combustion and detonation - Conference Hall (11:20-13:00)

- Conveners: Prof. Lyakhov, Nikolay (Institute of Solid State Chemistry and Mechanochemistry SB RAS)

time	title	presenter
11:20	Hydrostatic and shock-wave compression of a molecular crystals (00h40')	Dr. SMIRNOV, Ewgeny (■RFNC-FNIITF, Snezhinsk, Russia)
12:00	Upgrade of the detector for imaging of explosions. (00h20')	Mr. SHEKHTMAN, Lev (Budker Institute of Nuclear Physics)
12:20	Synchrotron radiation methods for registration of the ejection of particles from the free surface of shock-loaded metals (00h20')	Dr. TEN, Konstantin (LIH SB RAS)

Lunch - (13:00-14:00)

FEL-based study and THz radiation application: Part II - Parallel session Hall (14:00-15:40)

- Conveners: Prof. Shkurinov, Alexander (Faculty of Physics and International Laser Center, Lomonosov Moscow State University, Moscow, Russia)

time	title	presenter
14:00	Pump-probe setup for far-infrared subnanosecond time-resolved spectroscopy at the Novosibirsk free electron laser (00h20')	Ms. CHOPOROVA, Yulia (Budker Institute of Nuclear Physics)

14:20	Terahertz surface plasmons on real metal-dielectric structures: comparison of theory and experiments (00h20')	Mr. GERASIMOV, Vasily (Budker Institute of Nuclear Physics SB RAS)
14:40	Raman scattering at terahertz frequencies enabled by an infrared free electron laser (00h20')	Dr. PAVLOV, Sergey (German Aerospace Center)
15:00	Carrier dynamics in doped Ge measured at the free electron laser facility FELBE (00h20')	Mr. DESSMANN, Nils (Humboldt-University Berlin)
15:20	High temperature quasi stationary terahertz optical discharge on NovoFEL (00h20')	Dr. KUBAREV, Vitaly (BINP)

X-ray structural analysis: Small angle scattering - Conference Hall (14:00-15:40)

- **Conveners: Dr. Shmakov, Alexander (Boreskov Institute of Catalysis SD RAS)**

time	title	presenter
14:00	Status of dynamic diagnostics of plasma material interaction based on synchrotron radiation scattering at the VEPP-4 beamline 8 (00h40')	Dr. ARAKCHEEV, Aleksey (Budker INP)
14:40	Structural phase transformations study of brittle refractory metals and intermetallics with L12 structure using synchrotron radiation (00h20')	Dr. PILYUGIN, Vitaliy (M.N. Mikheev Institute of Metal Physics of the Ural Branch of the Russian Academy of Sciences (IMP UB RAS))
15:00	Zero-area THz optical pulses in gases. (00h20')	Dr. CHESNOKOV, Evgeniy (Istitute of Chemical Kinetics)
15:20	Investigation of influence NH4VO3+HOCH2CH2OH oxidation of ASD-4 powder (00h20')	Mr. ESELEVICH, Danil (ISSC UB RAS)

Coffee - 4th floor foyer (15:40-16:00)

FEL-based study and THz radiation application: Part III - Parallel session Hall (16:00-18:00)

- **Conveners: Dr. Shevchenko, Oleg (BINP)**

time	title	presenter
16:00	Ultrafast Pump-probe Facility based on an RF Photogun (00h40')	Dr. JEONG, Young Uk (Korea Atomic Energy Research Institute)
16:40	Intensity and timing jitter compensated ultra-fast experiments at accelerator-driven photonsources (00h20')	Dr. KOVALEV, Sergey (HZDR)
17:00	Duration of coherent synchrotron radiation pulses accessed via time-resolving and correlation techniques (00h20')	Mr. POHL, Andreas (Humboldt-University Berlin)
17:20	Formation of nanosized metal hydrosols under the influence of terahertz laser radiation (00h20')	Dr. KOZLOV, Alexander (Voevodsky Institute of chemical kinetics and combustion SB RAS)

X-ray structural analysis: Diffraction experiments - Conference Hall (16:00-18:00)

- **Conveners: Prof. Tolochko, Boris (Institute of solid state chemistry and mechanochemistry)**

time	title	presenter
16:00	In situ diffraction experiments at VEPP-3 beamlines #2 and #6. (00h20')	Dr. SHMAKOV, Alexander (Boreskov Institute of Catalysis SD RAS)

16:20	Nanodomain states of strontium ferrites and their structural transformations (00h20')	Dr. ANCHAROVA, Uliana (ISSCM SB RAS)
16:40	The high-pressure diffraction studies of potassium and complex carbonates: structural trends and stability (00h20')	Dr. RASHCHENKO, Sergey (Institute of geology and mineralogy SD RAS)
17:00	Methods of angular scanning in imaging and topography (00h20')	Dr. PODURETS, Konstantin (NRC "Kurchatov Institute")
17:20	The study of the phase composition of ceramic materials obtained by SHS from previously mechanically activated reaction mixtures Ti-Cr-B (00h20')	Dr. KURBATKIINA, Victoria (National University of Science and Technology "MISiS)
17:40	Novel technique for spatially resolved imaging of molecular bond orientations using X-ray birefringence: applications and developments (00h20')	Dr. DOLBNYA, Igor (Diamond Light Source)

Conference Dinner - (19:00-22:00)

Thursday 07 July 2016

Invited Talks: Part III - Conference Hall (09:00-10:00)

- Conveners: Prof. Knyazev, Boris (Budker Institute of Nuclear Physics)

time	title	presenter
09:00	FEL-pumped Silicon lasers based on hydrogen-like impurity centers (00h30')	Prof. HÜBERS, Heinz-Wilhelm (German Aerospace Center (DLR) and Humboldt University Berlin)
09:30	High-intense femtosecond radiation with gas medium and gas cluster beams (00h30')	Prof. SHKURINOV, Alexander (Faculty of Physics and International Laser Center, Lomonosov Moscow State University, Moscow, Russia)

X-ray Spectroscopy: Part I - Conference Hall (10:00-11:00)

time	title	presenter
10:00	Current status of EXAFS station of SSTRC. Application of XAFS spectroscopy for the study of promising functional nanomaterials. (00h20')	Dr. KRIVENTSOV, Vladimir (Boreskov Institute of Catalysis)
10:20	XAFS investigation of charge state and local atomic geometry of Pt in the series of synthetic minerals. (00h20')	Dr. TRIGUB, Alexander (NRC "Kurchatov Institute")
10:40	Application of SR methods for the study of nanocomposite materials for Hydrogen Energy. (00h20')	Prof. SADYKOV, V.A. (Boreskov Institute of Catalysis of SB RAS, Novosibirsk, Russia)

Coffee - 4th floor foyer (11:00-11:20)

X-ray Spectroscopy: Part II - Conference Hall (11:20-13:00)

- Conveners: Dr. Kriventsov, Vladimir (Boreskov Institute of Catalysis)

time	title	presenter
11:20	XAFS spectroscopy - a useful tool for determining structure parameters and the electronic state of various nanosystems (00h20')	Dr. ERENBURG, Simon (Nikolaev Institute of Inorganic Chemistry SB RAS, Budker Institute of Nuclear Physics SB RAS)
11:40	XAFS study of catalytic nanosystems promising for environmental catalysis (00h20')	Mr. YAKIMCHUK, E.P. (Boreskov Institute of Catalysis of SB RAS, Novosibirsk, Russia)
12:00	Near-surface regions of chalcopyrite studied using XPS, HAXPES, XANES and DFT (00h20')	Prof. MIKHLIN, Yuri (Institute of Chemistry and Chemical Technology of the Siberian Branch of the Russian Academy of sciences)
12:20	Synchrotron-based experimental study and theoretical simulation of hydrogen desorption for solid-state hydrogen storage material – Mn(BH4)2 (00h20')	Mr. PANKIN, Ilia (Southern Federal University, IRC "Smart materials")

12:40	Probing magnetic sublattices in multiferroic Nd0.5Ho0.5Fe3(BO3)4 single crystal via hard x-ray magnetic circular dichroism (00h20')	Dr. PLATUNOV, Mikhail (Kirensky Institute of Physics)

Lunch - (13:00-14:00)

X-ray apparatus: Part I - Conference Hall (14:00-15:40)

- **Conveners: Dr. Snigirev, Anatoly (Immanuel Kant Baltic Federal University)**

time	title	presenter
14:00	Coherent hard X-ray microscopy for the characterization of mesoscopic materials (00h40')	Dr. SNIGIREVA, Irina (European Synchrotron Radiation Facility)
14:40	3D X-ray lithography (00h20')	Mr. NAZMOV, Vladimir (Budker Institute of Nuclear Physics)
15:00	Manufacturing of high resolution X-ray masks for LIGA technology in SSTRC (00h20')	LEMZYAKOV, Aleksey (BINP SB RAS)
15:20	DIAMOND REFRACTIVE LENSES FOR DIFFRACTION-LIMITED X-RAY SOURCES (00h20')	Mr. POLIKARPOV, Maxim (IKBFU)

Coffee - 4th floor foyer (15:40-16:00)

X-ray apparatus: Part II - Conference Hall (16:00-17:30)

- **Conveners: Dr. Mezentsev, Nikolay (Budker Institute of Nuclear Physics)**

time	title	presenter
16:00	Metrological station "Cosmos". Current status. (00h20')	Mr. NIKOLENKO, Anton (BINP)
16:20	Current driven wire based magnetic measurement systems (00h20')	Mr. ZORIN, Artem (BINP)
16:40	Performance and characterisation of CsI:Tl thin films for X-ray imaging application (00h20')	Mr. KOZYREV, evgeny (binp)
17:00	Development of compact SR light sources in JAI and in UK (00h30')	Prof. SERYI, Andrei (John Adams Institute)

Conference Closing - Conference Hall (17:30-18:00)