

14-16 May
2017
Peterhof
Russia



The future of biology and soft matter research on reactor PIK

Directions

Structural research of biomolecules on atomic level (neutron crystallography),
Large macromolecular complexes (small-angle neutron scattering, reflectometry),
Structural dynamics on atomic and molecular level (quasielastic neutron scattering).

Participants

Leading Russian scientists working in research centers all over the world, specialists in neutron
research, structural biology, soft matter, molecular dynamics

Organizers

NRC «Kurchatov Institute» Petersburg Nuclear Physics Institute (NRC KI PNPI)
Forschungszentrum Jülich GmbH, Germany (FZJ)
CREMLIN EU Project (www.cremlin.eu)

Program Committee

Co-Chairs: Mikhail Kovalchuk (NRC KI) and Sebastian Schmidt (FZJ)
Members: Victor Aksenov (NRC KI PNPI), Alexander Ioffe (FZJ), Andrey Konevga,
Sergey Grigoriev (NRC KI PNPI), Mikhail Avdeev (JINR),
Vladimir Volkov (FNRC Crystallography and Photonics), Nikolay Tsvetkov (SPbSU)

Organizing Committee

Chair: Denis Minkin (NRC KI PNPI); Members: Andrey Konevga, Natalia Poltavskaya,
Dmitry Lebedev (NRC KI PNPI), Raif Vasilov, Vyacheslav Em, Natalia Belushkina,
Anna Anciferova (NRC KI), Inna Kuranova (FNRC Crystallography and Photonics),
Elena Abrosimova (FZJ)

Contacts

Bio-soft-pik@omrb.pnpi.spb.ru
biosoft.pnpi.nrcki.ru

BioSoft@PIK



Sponsor



SCIENTIFIC PROGRAM
The future of biology and soft matter research on reactor PIK

May 14-16, 2017

❖ В программе возможны изменения и дополнения.
Следите за изменениями программы на сайте
<https://biosoft.pnpi.nrcki.ru/program/>

Sunday, May 14 Arrival, accommodation

Monday, May 15

Time	Name	Lecture title
08:00 – 08:40	Registration	
08:40 – 08:50	Denis Minkin (NRC KI PNPI)	Opening
08:50 – 09:10	Victor Aksenov (NRC KI)	From solids to soft and life matter
09:10 – 09:30	Alexander Ioffe (FZJ)	Specific features of neutrons for Biosoft investigations
SESSION 1. General request from biology / soft matter		
09:30 – 10:00	Andrey Panteleev (NRC KI)	Skin nanostructure - current progress, challenges and perspectives
10:00 – 10:30	Nikolay Tsvetkov (SPbSU)	Конформационные и физические свойства макромолекул и их комплексов в разбавленных растворах
10:30 – 10:50	Coffee break	
10:50 – 11:20	Konstantin Shaitan (MSU)	Structural biology and experiments in silico
11:20 – 11:40	Oxana Galzitskaya (Institute of Protein Research RAS)	Molecular mechanism of amyloid formation by Abeta peptide
11:40 – 12:00	Pavel Gotovtsev (NRC KI)	Биотехнология и биоэнергетика. Основные направления исследований в НИЦ «Курчатовский институт» и роль мегаустановок

SESSION 2. Crystallography		
12:00 - 12:30	Marat Yusupov (IGBMC)	Crystal structures of eukaryotic and bacterial ribosomes
12:30 – 13:00	Alexey Nikulin (Institute of Protein Research RAS)	The first sight of a protein crystallographer on the application of neutron radiation
13:00 – 14:00	Lunch	
14:00 – 14:20	Margarita Marchenkova (NRC KI)	Новый подход к исследованию процессов кристаллизации белков и формирования упорядоченных пленок на их основе методами малоуглового рассеяния рентгеновских лучей и нейтронов, рентгеновской рефлектометрии и стоячих рентгеновских волн
14:20 – 14:40	Kholmirzo T. Kholmurodov (JINR)	Computer design of nanoscale phenomena: exploring new materials and new drugs
SESSION 3. Small-angle neutron scattering and reflectometry for biology and soft matter – 1		
14:40 – 15:10	Artem Feoktystov (FZJ)	Low-resolution Small-angle neutron scattering for biology and soft matter
15:10 – 15:30	Mikhail Avdeev (JINR)	Biological molecules and nanoparticles: friends or enemies?
15:30 – 15:50	Vitaly Pipich (FZJ)	Time resolved small and very-small angle neutron scattering (SANS/VSANS) investigations: biomineralization processes
15:50 – 16:10	Kiselev M.A. (JINR)	Biocompatible complexes for drug delivery: structural aspects
16:10 – 16:30	Alexey Shvetsov (NRC KI PNPI)	All-atom molecular dynamics simulation and neutron scattering
16:30 – 18:10	Coffee break / Posters	

Tuesday, May 16

Time	Name	Lecture title
SESSION 3. Small-angle neutron scattering and reflectometry for biology and soft matter – 2		
08:40 – 09:00	Alexander Ioffe (FZJ)	Neutron Reflectometry for biology and soft matter.
09:00 – 09:30	Boris P. Toperverg (NRC KI PNPI)	Structure and Dynamics of Lipid Membranes Probed by Neutron Reflectometry and Spectroscopy
09:30 – 09:50	Vladimir Volkov (KIF RAS)	On the uniqueness and stability of solutions in problems of determining the structural parameters of nanoparticles from SAS data
09:50 – 10:10	Alexander Kuklin (MIPT)	Soft matter and biology research by small angle scattering on IBR-2.
SESSION 4. Neutron spectroscopy for biology and soft matter		
10:10 – 10:40	Oxana Ivanova (FZJ)	Neutron spectroscopy for studies of slow dynamics
10:40 – 11:00	Dmitry Lebedev (NRC KI PNPI)	Structure and Dynamics of Biomacromolecular complexes by X-ray and Neutron scattering
11:00 – 11:20	Nikita V. Marchenkov (NRC KI)	Expansion of synchrotron-neutron researches capabilities by application of X-Ray radiation and electrons in NBICS-Technologies Kurchatov Complex
11:20 – 11:30	Eugeny Moskvina (NRC KI PNPI)	The planned Biosoft facilities suite for PIK reactor
11:30 – 12:30	Coffee break / Posters	
12:30 – 13:00	Mikhail Kovalchuk (NRC KI)	To Be Announced
13:00 – 13:20	Sebastian Schmidt (FZJ)	Wrap up
13:20 – 14:20	Lunch	