

STRUCTURAL BIOLOGY

October 31, 14:00 – 16:00

Suvorov Hall

Session 1

Chairs: Ning GAO and Ekaterina Lyukmanova

20 min **Senfang SUI** *Tsinghua University, China*

Cryo-EM studies of photosynthetic protein machine of marine red algae

20 min **Konstantin USACHEV**, M.M. Yusupov *FRC "Kazan Scientific Center of RAS", Kazan; FRC "Kurchatov Institute", Moscow, Russia*

Structural insights into the ribosomes of pathogenic bacteria and yeast

20 min **Qiangfeng ZHANG** *Tsinghua University, China*

CryoLVM: self-supervised learning from Cryo-EM density maps with large vision model

20 min **Aleksandra LUGININA**, V. Borshchevskiy, A. Mishin *Moscow Institute of Physics and Technology (National Research University), Russia*

Sphingosine-phosphate and cysteinyl leukotriene GPCR receptors structural investigation for rational drug design

20 min **Xueming LI** *Tsinghua University, China*

Segmentation and visualization of proteins in CryoET cellular tomogram

20 min **Zakhar SHENKAREV**², A.D. Ivannikov², M.V. Kocharovskaya², P.A. Mironov², E.A. Kovalenko², S.D. Oreshkov², D.S. Kulbatskii², A.S. Paramonov², M.M. Zaigraev², M.A. Shulepko¹, A.V. Kuznetsov¹, M.P. Kirpichnikov², E.N. Lyukmanova¹ ¹*Faculty of Biology, MSU-BIT Shenzhen University, Shenzhen, China;* ²*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*

Spider toxins acting on voltage-gated ion channels regulate activation of the voltage-insensitive channel TRPA1 through interaction with the S1-S4 domains

STRUCTURAL BIOLOGY

October 31, 16:20 – 18:20

Suvorov Hall

Session 2

Chairs: Zakhar SHENKAREV and Senfang SUI

20 min **Ning GAO** *Peking University, China*

Structural study of DNA replication initiation in eukaryotes

20 min **Olesya KRUMKACHEVA**¹, E.G. Bagryanskaya², M.V. Fedin¹, D.M. Graifer³, A.K. Malygin³ ¹*International Tomographic Centre, Siberian Branch of the Russian Academy of Sciences (SB RAS);* ²*N.N. Vorozhtsov*

Novosibirsk Institute of Organic Chemistry, SB RAS; ³Institute of Chemical Biology and Fundamental Medicine, SB RAS, Novosibirsk

Electron paramagnetic resonance spectroscopy as a useful complementary method to cryo-EM in studying the structural organization of human ribosome complexes

20 min **Xinzheng ZHANG** *Institute of Biophysics, Chinese Academy of Sciences, China*
Method developments in in-situ cryo-EM and their applications

20 min **Tatiana KALEBINA, V.V. Rekestina** *Lomonosov Moscow State University, Faculty of Biology, Molecular Biology Department, Moscow*

Proteins with amyloid properties noncovalently attached to the cell surface of yeast: structure, functions, and significance for medicine

20 min **Qingtao SHEN** *Southern University of Science and Technology, China*

Annealing: a magic wand to synchronize macromolecules to their minimum-energy states

20 min **Ekaterina LYUKMANOVA^{1,6}**, M. Kocharovskaya¹, E. Pichkur², D. Nolde¹, D. Dormeshkin³, M. Shapiro³, V. Borshchevskiy⁴, A. Varizhuk⁵, M. Kirpichnikov¹, Z. Shenkarev¹ *¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²National Research Center "Kurchatov Institute", Moscow, Russia; ³Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Belarus; ⁴Moscow Center for Advanced Studies, Moscow, Russia; ⁵Federal Research and Clinical Center of Physical-Chemical Medicine, Federal Medical Biological Agency, Moscow, Russia; ⁶Shenzhen MSU-BIT University, China*

Cryo-EM and *in silico* study of SARS-CoV-2 S-protein interaction with neutralizing antibodies