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Small angle scattering for large problems: how to fight diseases with X-Rays

Thursday, 10 June 2021 16:00 (1 hour)

Small-angle X-ray scattering (SAXS) is a powerful method in the studies of solutions of biological macromolecules and nanostructured systems allowing one to analyze the structure of native particles and complexes and to rapidly assess structural changes in response to variations in external conditions. Dedicated high brilliance synchrotron beamlines and novel data analysis methods [2] significantly enhanced resolution and reliability of the structural models provided by SAXS. Very important is the ability of SAXS to quantitatively characterise complicated systems and mixtures in native environments and to see the biomolecules in action by rapidly observing responses to changing physical and chemical conditions (e.g. upon pH or temperature changes, ligand binding etc).

In the present talk, modern methods for SAXS data analysis will be presented and illustrated by applications to characterize vaccine delivery systems and to conduct screening experiments to tackle global pandemic crisis. Perspectives of the synergistic use of SAXS for integrative modeling utilizing complementary methods will be discussed.

Presenter: GRUZINOV, Andrey (EMBL Hamburg)

Session Classification: Invited Speaker