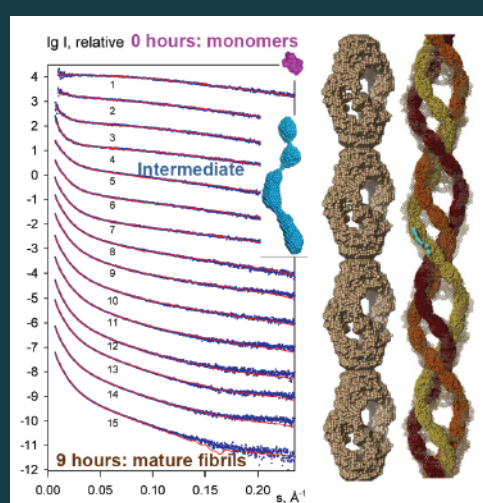


Dmitri I. Svergun

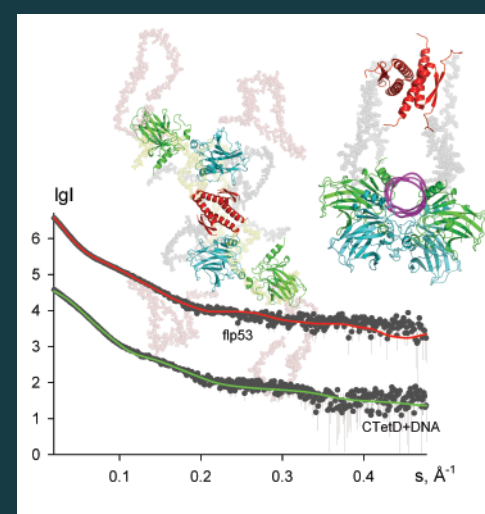
Small-Angle X-ray Scattering from Biological Macromolecules and Nanoparticles



Small-angle x-ray scattering (SAXS) is experiencing a renaissance in the studies of macromolecular solutions, allowing one to study the structure of native particles and to rapidly analyze structural changes in response to variations in external conditions. Novel data analysis methods, significantly enhanced resolution, and reliability of structural models are provided by the technique. Emerging automation of the experiment, data processing, and data interpretation make solution SAXS a streamline tool for large-scale structural

studies in molecular biology. The method provides low-resolution macromolecular shapes ab initio and is readily combined with other structural and biochemical techniques in multidisciplinary studies to build rigid body models of complexes and to characterize oligomeric mixtures and flexible systems. The novel approaches also became useful for non-biological systems and processes, e.g., the formation of nanoparticles.

Dmitri Svergun, a graduate of Moscow University, is a Group Leader at the European Molecular Biology Laboratory, Hamburg Outstation. His research activities include small-angle x-ray scattering, applications of synchrotron radiation and neutron scattering in structural research of biological macromolecules and nanostructured materials, and development of mathematical methods for interpretation of elastic scattering data. He has held academic appointments at the Institute of Crystallography in Moscow, Russia, and at the GKSS Research Center, Geesthacht, Germany. He was awarded an International Rusnanonprize-2010 for the methods development in nanodiagnostics. He is author or co-author of over 250 publications and two monographs (h-index 37), and a consultant to the Commission on Small-Angle Scattering of the International Union of Crystallography.



Wednesday, December 1, 2010 | 3:00 p.m.

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