



# Small-angle Scattering Seminar Series

Organized by SAXS-SIG, Advanced Photon Source

A monthly seminar series, organized by Small Angle X-ray Scattering Special Interest Group (SAXS-SIG) at Advanced Photon Source, is focused on discussing, celebrating, and learning from new frontiers of science, research, and development based on small-angle scattering (SAS). This is a monthly seminar organized virtually over ZOOM where the speaker will be invited by SAXS-SIG. In order to join the seminar please subscribe to the small-angle mailing list here: <https://mailman.aps.anl.gov/mailman/listinfo/small-angle>

## Upcoming Seminar

**Date:** Feb 9, 2022

**Time:** Wed, 11:00 AM (CST)

**Speaker:** Mikhail (Misha) Zhernenkov

**Institution:** NSLS-II, BNL

**Title:** A Portfolio of Advanced SAXS Capabilities at NSLS-II: Beamlines for Materials Science, Life science and Beyond

**Abstract:** Small-angle scattering is a powerful tool to study the structure of materials on length scales from nano- to micrometers and, therefore, every synchrotron and neutron user facility in the world offers a suite of SAS-capable beamlines that are dedicated to a broad variety of scientific topics. In the presentation, we will give a brief overview of SAXS-enabling instruments available at the new, high-brightness synchrotron, NSLS-II: CMS, SMI, LiX, and PDF to study soft, biomaterials, life science, and hard condensed matter. In more details, we will focus on the description of two beamlines that are primarily dedicated to the study of all aspects of soft condensed matter under different experimental conditions: Soft Matter Interfaces (SMI) beamline and Complex Materials Scattering (CMS) beamline. SMI is a long energy range canted in-vacuum undulator (IVU) beamline with an excellent energy



**Mikhail Zhernenkov:** Physicist, lead beamline scientist at the SMI beamline, National Synchrotron Light Source-II, Brookhaven National Laboratory

tunability between 2.05 - 24 KeV, and extremely high photon flux. Fully windowless, in-vacuum design enables measurements at both hard and tender x-rays covering the K-edges of P, S, K, Cl, Ca, etc. SMI provides a variable focusing and fast detectors, which enable time-resolved small angle scattering and grazing incidence geometries with high  $q$  resolution, or conversely micro-focusing with relaxed resolution. CMS is a 3-pole wiggler-based beamline dedicated to the in situ and high-throughput x-ray scattering capabilities for nanoscale and mesoscale characterization. The CMS beamline also enables materials design and discovery based on intelligent, efficient exploration of materials structure in large parameter spaces.