FLEXIBILITY AND HIGH THROUGHPUT: SUPPORTING SAXS USERS AT A JOINT INDUSTRIAL ACADEMIC BEAMLINE.

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From its inception, DuPont-Northwestern-Dow Collaborative Access Team (DND-CAT) at the Advanced Photon Source has had to adapt to the changing needs of industry as well as a diverse academic user base. This has resulted in a sector with support for a broad range of techniques and sample environments.

Among the techniques supported at DND-CAT are small and wide angle scattering, reflectivity, spectroscopy, tomography, and powder diffraction. The D station on the insertion device line at DND-CAT (5ID-D) is a general purpose hutch that is primarily used for small angle X-ray scattering (SAXS). Approximately 10^{12} photons/sec can be delivered to a .04mm^2 spot using multiple sets of slits with pinhole camera geometry. Scattering can be measured down to $2\theta = 0.014°$ on a 10m long camera with 1.5Å to 0.7Å radiation.

Many of 5ID-D users are polymer scientists, thus standard techniques supported include SAXS and WAXS image collection simultaneous with thermal, extension/compression, shear, or calorimetric data. Often times an individual user will come with arrays of several sample types requiring different environments and/or camera configurations to fully analyze.

The focus of my talk will be on how the joint goals of flexibility and high throughput are balanced at 5ID-D for small and wide angle X-ray scattering, and discussing several case studies where these features have been critical for the success of an experiment.

INFORMATION PAGE

- DXC submission
- You may post abstract on DXC web site and affiliated web sites
- Speaker and person to whom correspondence should be sent:

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- Oral presentation, invited for Small Angle Scattering session chaired by Jan Ilavsky
- I do intend to puplish a paper in DXC proceedings