☒ **Talk** ☐ **Poster**

Upcoming SXN Beamline: A Versatile Tool for Investigating Environmental Science at NSLS-II

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Soft X-ray nanoimaging and spectromicroscopy provides excellent chemical sensitivity through near edge spectroscopy (NEXAFS) with a nanoscale spatial resolution. The upcoming new soft X-ray nanoprobe (SXN) beamline[1] at NSLS-II will offer researchers state-of-the-art soft x-ray nano-imaging and spectroscopy tools with world-leading coherent high photon flux in the energy range from 250 eV – 2500 eV and full polarization control. It will provide element access from carbon (C) to sulfur (S) through K-edges and many other important elements through L- and M-edges. The primary endstation, nanoISM, will offer both a conventional scanning transmission x-ray microscopy (STXM) mode, for high throughput 2D/3D absorption imaging, and a coherent diffractive imaging (ptychography) mode, for extra high spatial resolution.

The new SXN beamline has the potential to fulfill the research needs for the environmental science community and aim to welcome first user in 2027. In this talk, I will give an overview of the SXN beamline and discuss the future potential of the nanoISM endstation on the environmental science research.

References

[1] Wen Hu, Joseph Dvorak, Oleg Chubar, An He, Lukas Lienhard, Daniel M. Bacescu, Evgeny Nazaretski, Steven Hulbert, Andrew L. Walter, *Proc. of SPIE*. **12698**, 1269809 (2023).