

Abstract Submitted  
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**The Binding of Roxarsone at the Silica/Water Interface Studied with Second Harmonic Generation** CHRISTOPHER KONEK, Northwestern University, DAVID OSTROWSKI, Northwestern University, FRANZ GEIGER, Northwestern University — Arsenic is a carcinogen that can also cause chronic poisoning when ingested via drinking water in quantities as low as 10 micrograms/L. In the US, organic arsenicals such as Roxarsone are commonly used as feed additives in the poultry industry. The use of poultry litter as fertilizer results in environmental arsenic deposition rates of up to 50 metric tons per year; the subsequent environmental fate of Roxarsone is unknown. We use second harmonic generation (SHG) to study the thermodynamics and kinetics of Roxarsone binding to environmentally relevant mineral oxide/water interfaces. Roxarsone binding to water/SiO<sub>2</sub> interfaces is fully reversible, consistent with high Roxarsone mobility. Results from Langmuir isotherm measurements and surface SHG spectra are presented as well.

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