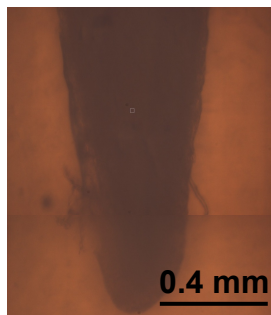


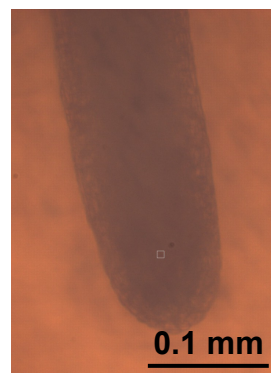
Measuring Bioavailability of Ag Nanoparticles in Plants with X-ray Absorption Spectroscopic (XAS) imaging

John Stegemeier¹, Ben Colman², Fabienne Schwab², Emily Bernhardt², Greg Lowry¹

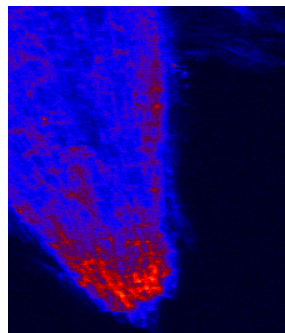
¹Carnegie Mellon University, ²Duke University



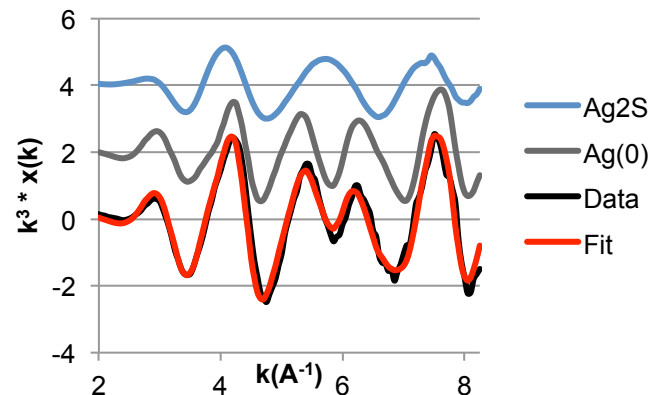
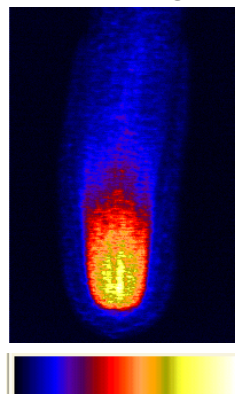
Alfalfa root



Duckweed root



Ag XAS map of roots exposed to Ag(0) NPs



X-ray based speciation shows transformation of metallic silver NPs into a silver sulfide species