

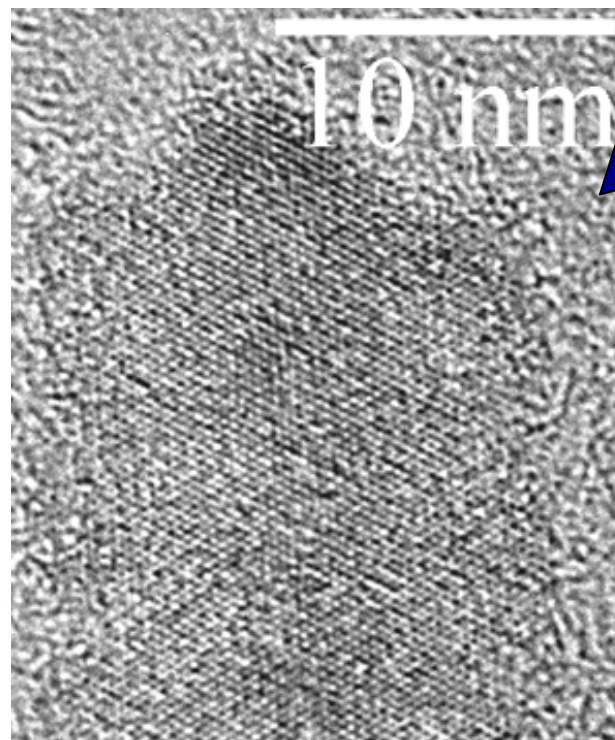
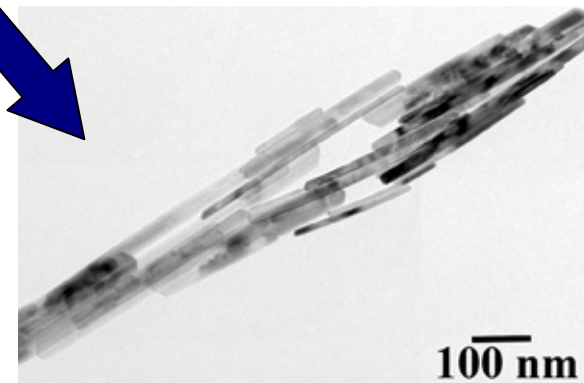
Lee Penn University of MN - Minneapolis CHE-0346385

From Particles to Atoms is a program geared towards middle school students and has two major goals. The first is to guide students from synthesizing their own nanoparticles to characterizing their particles using light microscopy to characterizing their particles at atomic-resolution using electron microscopy. For most students in this age group, this program will provide their first opportunity to directly observe the atomic structure of solid crystalline materials. The second goal of this program is to provide an invaluable experience to the chemistry majors who design and run this program, particularly those who anticipate teaching careers at the junior and senior high school levels.

Microscopy Camp 2005 (so named as to avoid biasing pre-camp data collection regarding concepts of the atomic structure of solid materials) will be held in August of 2005. It will feature microscopes ranging from student light microscopes to our FEI Tecnai F30 high-resolution electron microscope. Samples examined will be iron oxide nanoparticles prepared by the students participating. At the conclusion of the camp, students will paint a mural using iron oxide nanoparticles and post images to our Microscopy Camp website.



50 mL centrifuge tube containing an aqueous suspension of goethite particles.



Transmission Electron Micrographs (middle and lower) of goethite nanoparticles. In the lower image, an atomic-resolution image is shown.