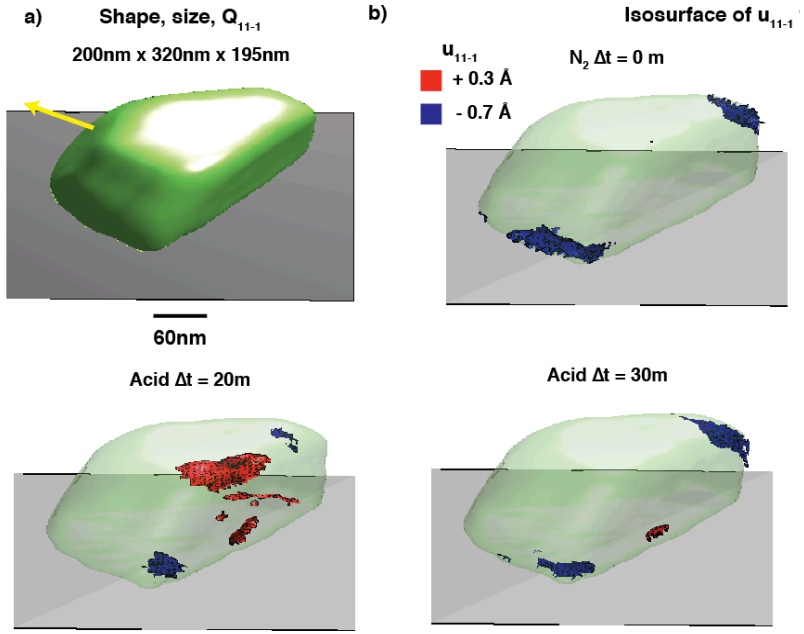
Ascorbic Acid Decomposition on Gold

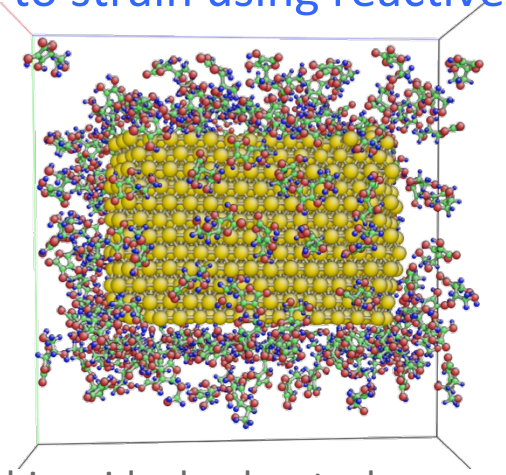
Imaging gold nanoparticles in ascorbic acid using coherent x-rays



- Lattice change occurs at junctions involving the flattest facet
- Electron injection should create largest electric field at crystallographic apexes, "hot spots" for the reaction

(Currently based on existing data, Andrew Ulvestad, UCSD)

Modeling the atomistic mechanism leading to strain using reactive MD



- Ascorbic acid adsorbs at a low coordinated corner site
- Subsequent dissociation leads to ~40% strain

Analyzing the relative displacement of gold atoms compared to initial lattice