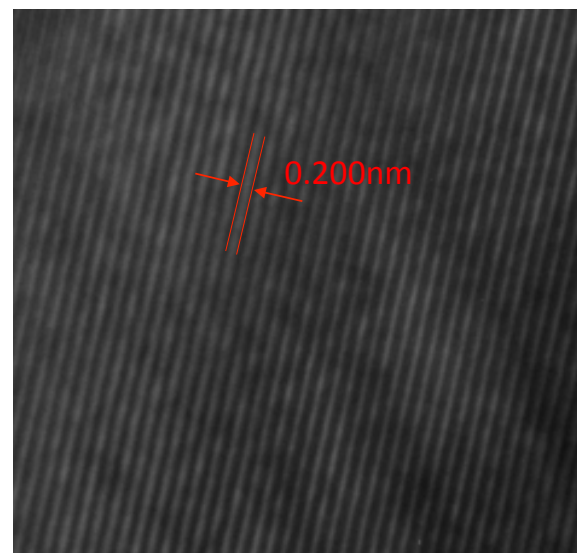
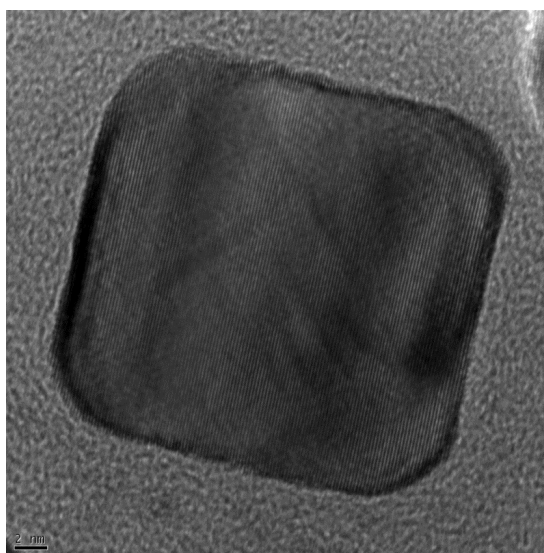
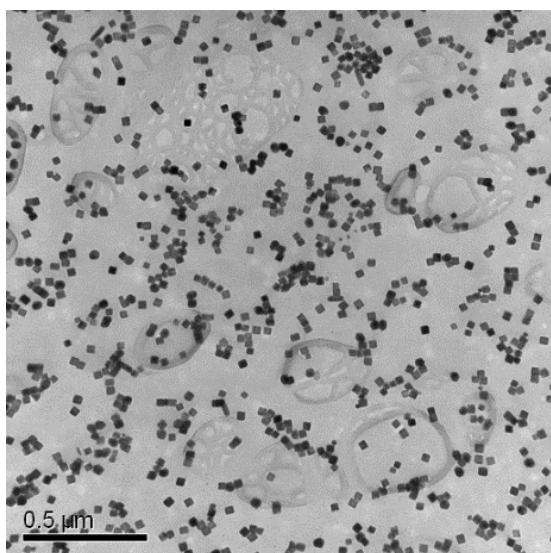


Pd Nanoparticle Synthesis

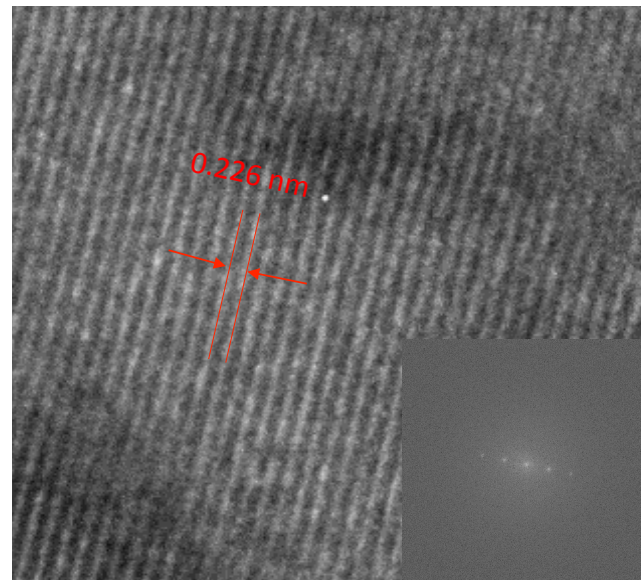
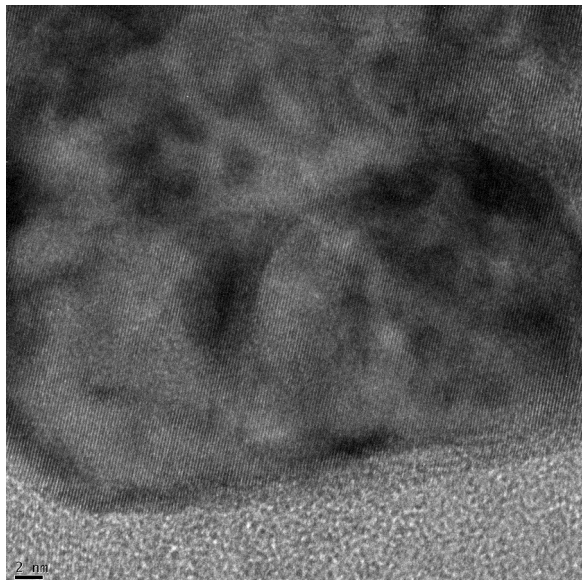
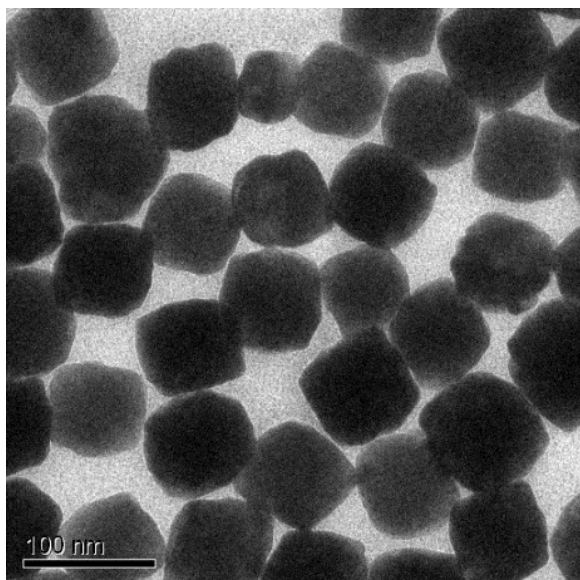


Pd Nanocubes <100> facet in-closed

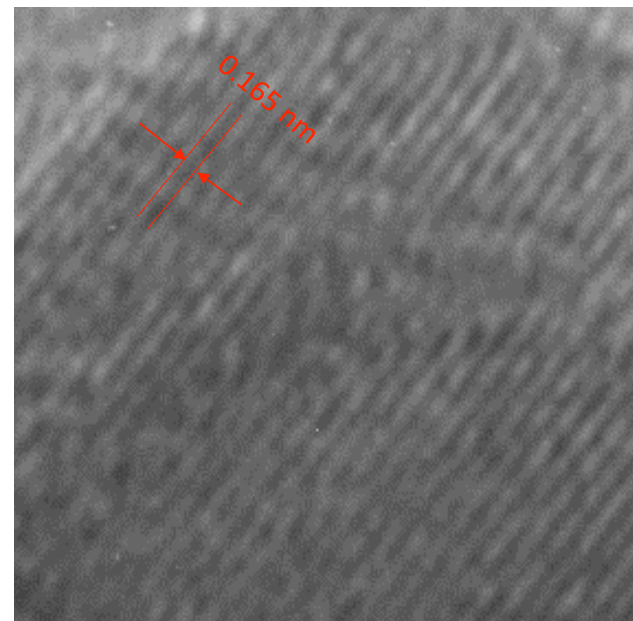
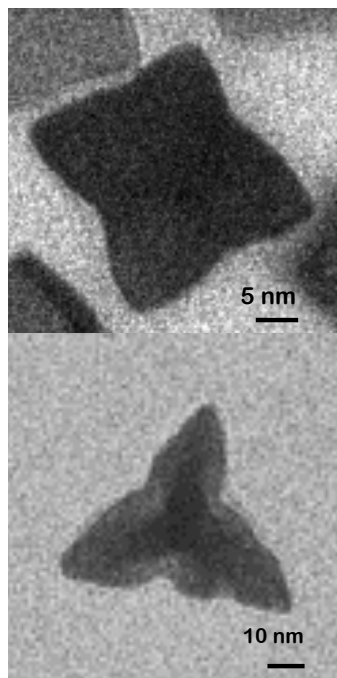
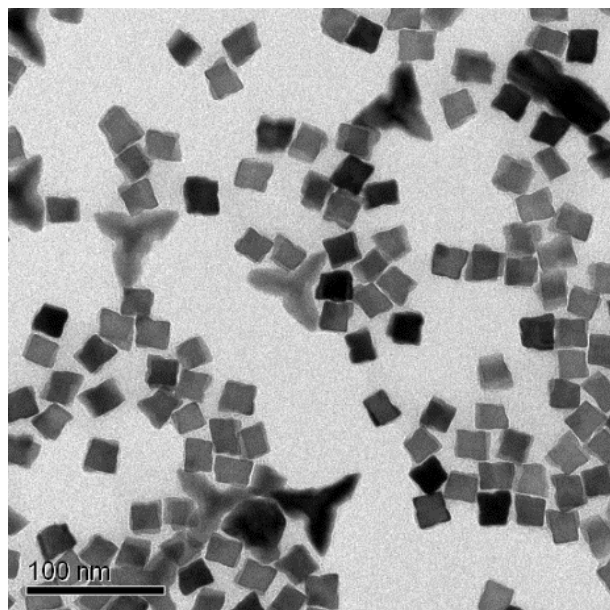


J. Am. Chem. Soc. 2012, 134, 18417–18426

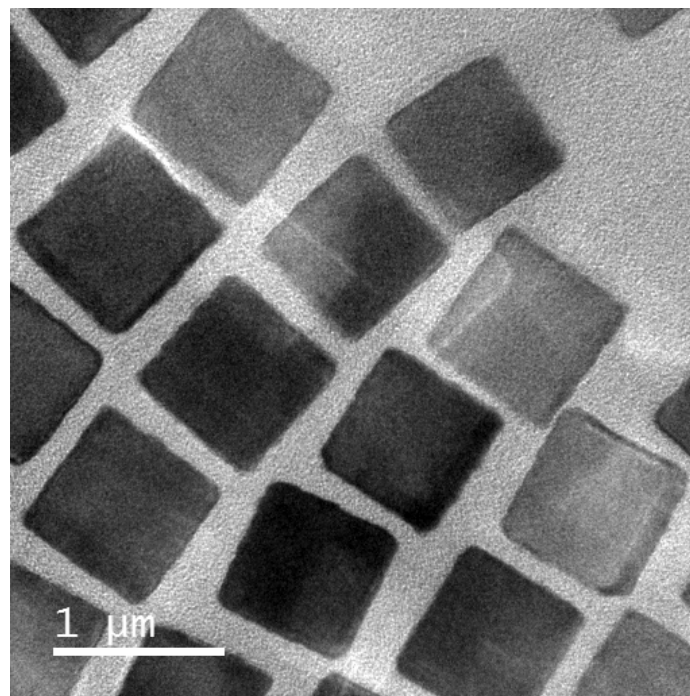
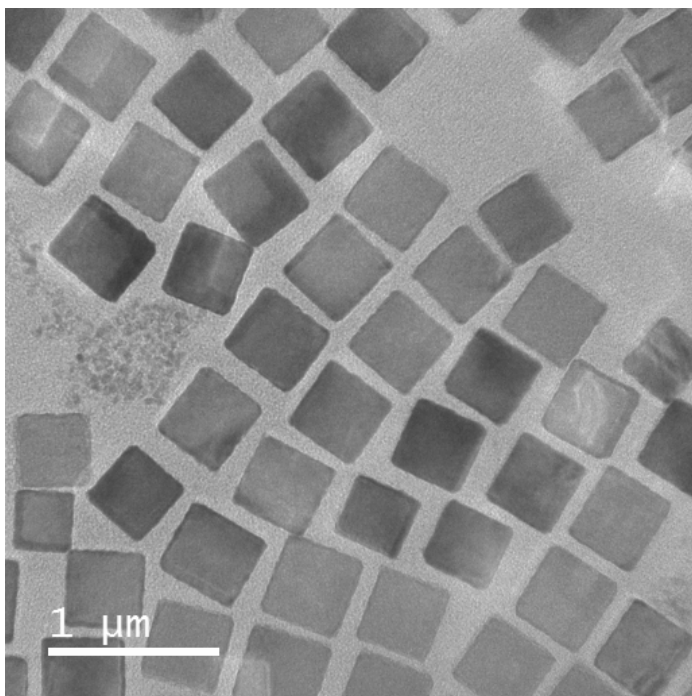
Pd Nanocubes <111> facet in-closed



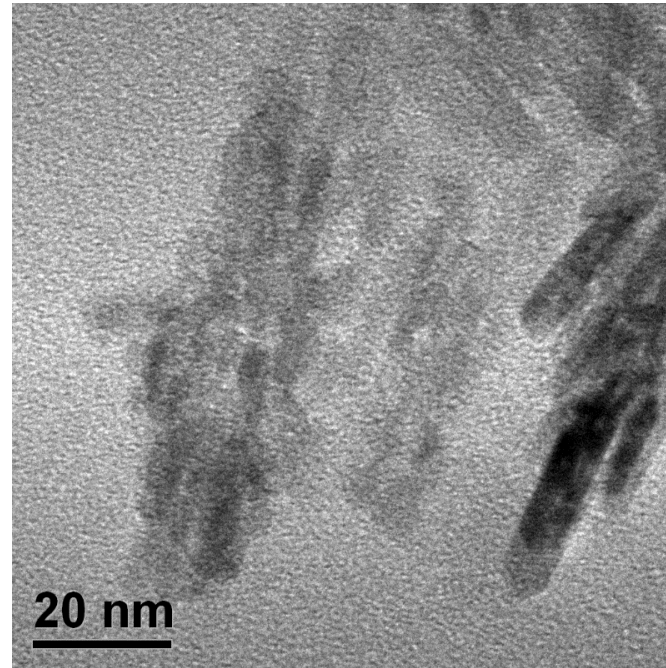
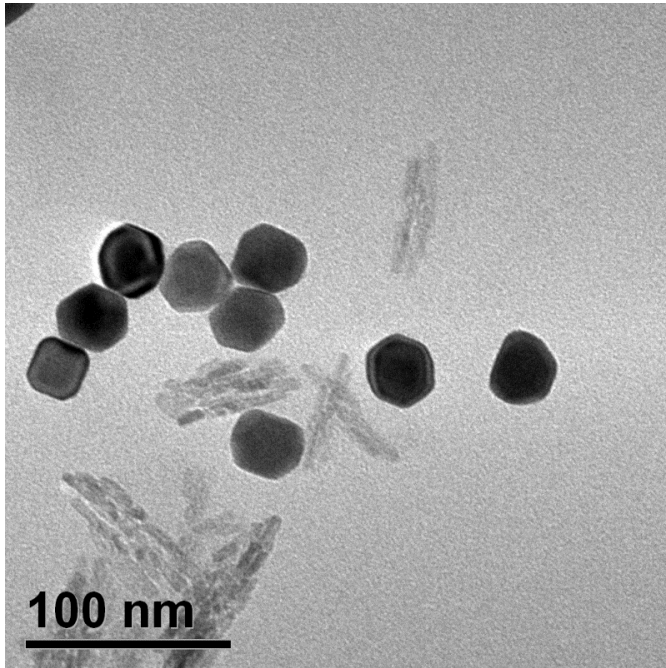
High Index Pd nanoparticles



Introducing impurities in the system ----Rh

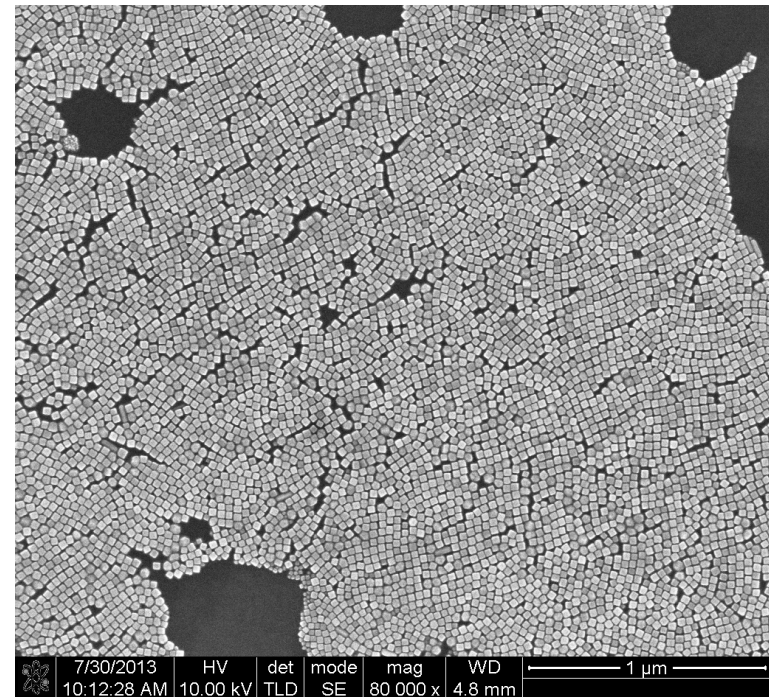


Introducing impurities in the system ----Ni

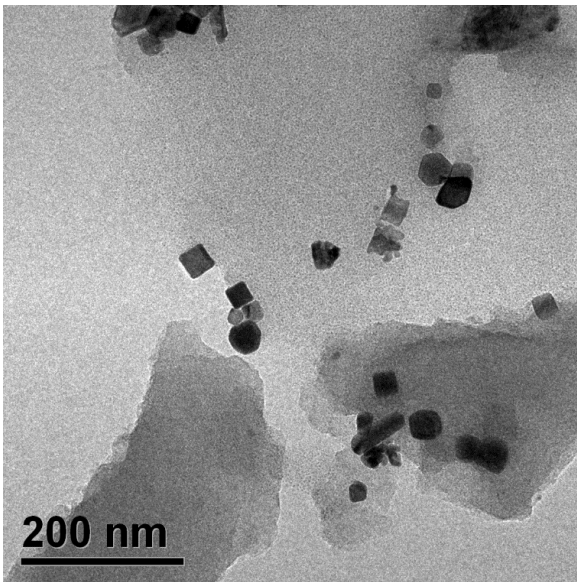


Challenge: How to make Pd NP's electrically conductive

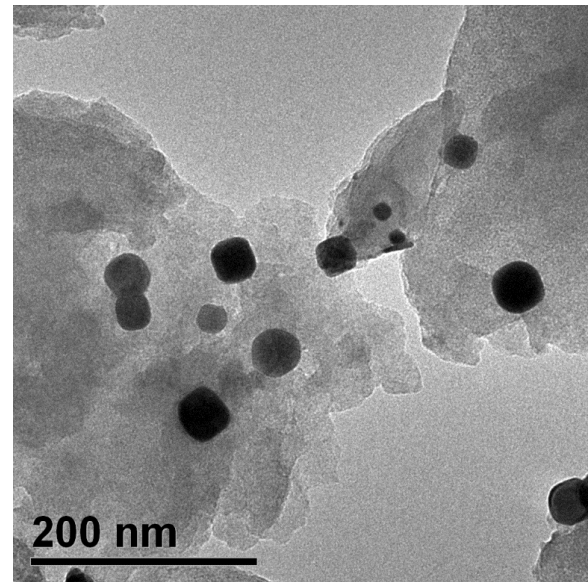
- Particles as-synthesized are passivated with CTAB, long-chain organic molecule
- How to remove CTAB so as to allow conductivity through substrate?



Particles on substrate---carbon nanopowder

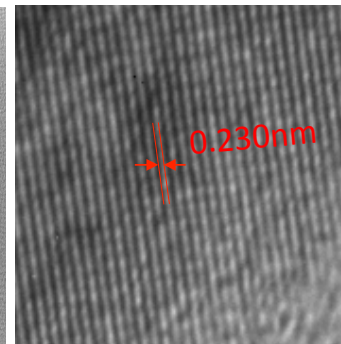
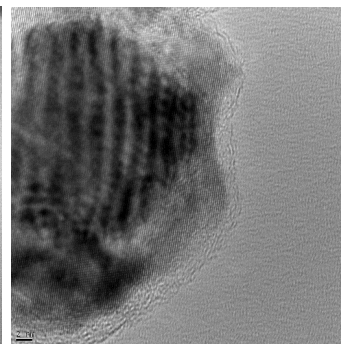
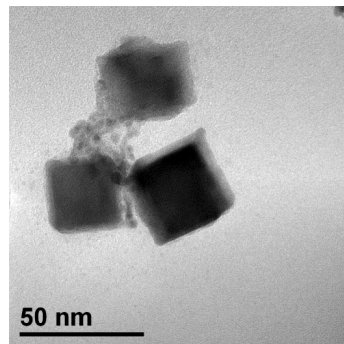


After annealing

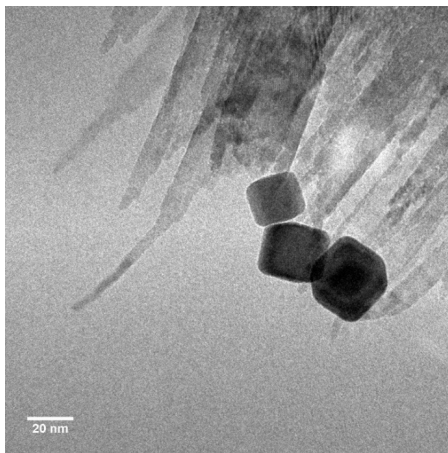


Clean up particles to get rid of CTAB

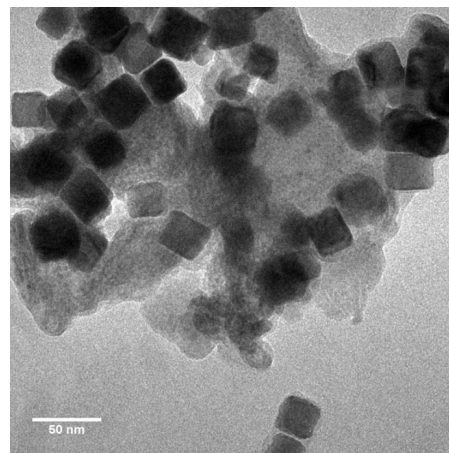
Thin shell Cu₂O coating →



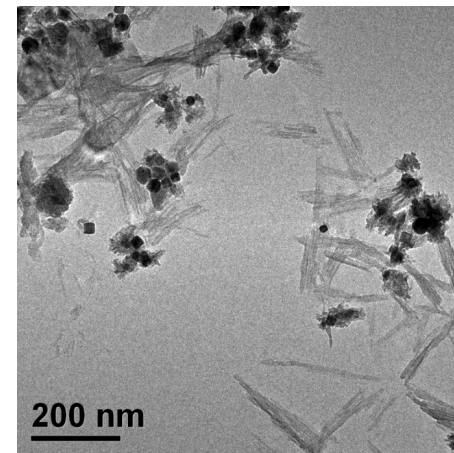
Cu₂O
<111>



NaOH Etching



HCl Etching



NH₄OH Etching