

M3D5: Battery assembly and testing

12/5/2017

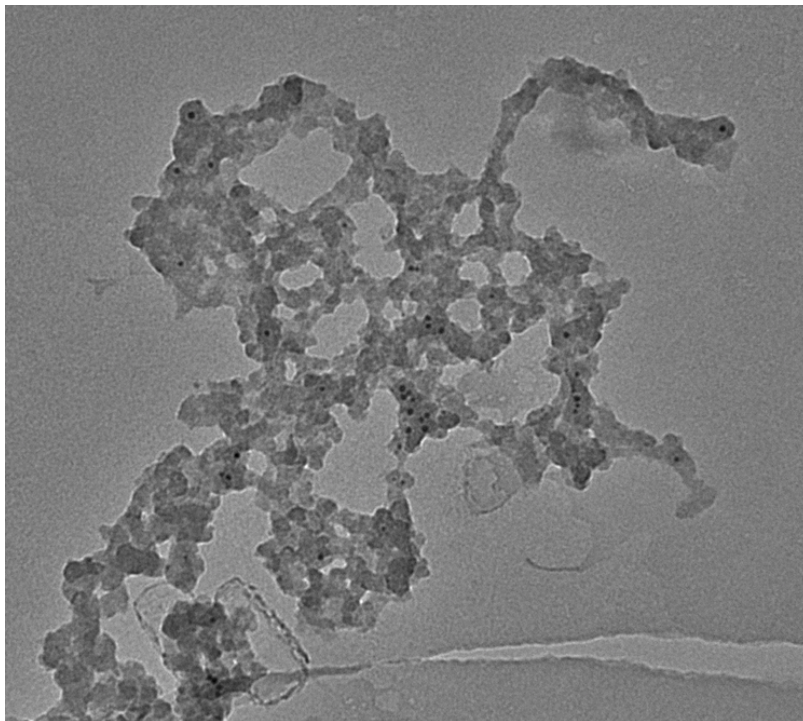
1. LAST Quiz
2. Prelab Discussion
3. Battery assembly demo: Belcher lab
4. Refine Research Proposal and draft figures for mini-report

The final countdown...

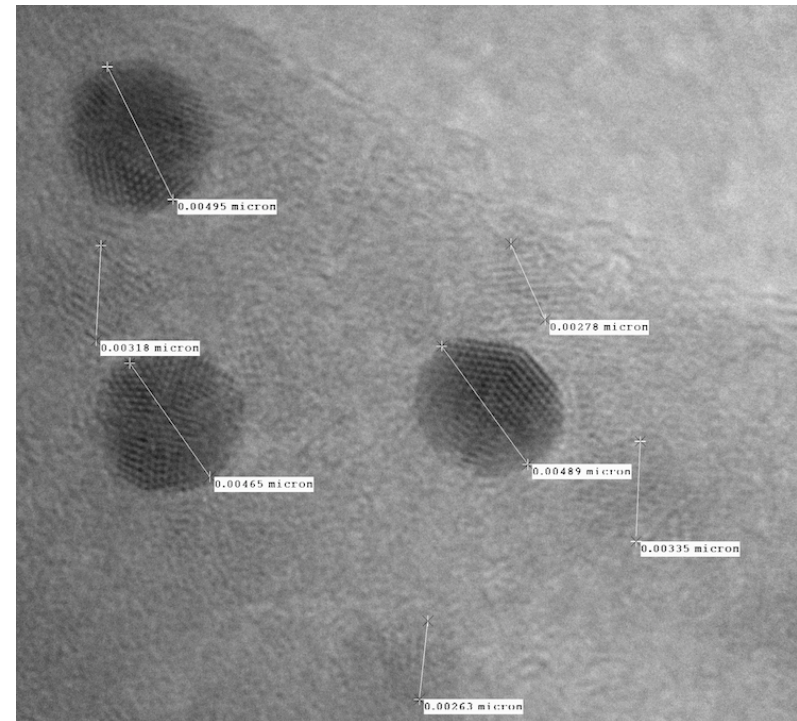
- M3 Lab notebook grade
 - M3D1 graded by Eric at 10pm tonight
- No lecture Thursday
- M3 research proposal
 - slides due on Stellar Thursday, Dec. 7th at 1pm
 - bring one print-out of your slides to 16-336
 - snacks!
- M3 mini-report
 - due on Stellar at 10pm Monday, Dec. 11th
 - Title, background + approach, (no methods, no abstract)
 - Possible figures: TEM images, EDX plot, charge/discharge plot, capacity value for your batteries
 - Short Context/Future Works
- Blog posts
 - Final blog post: Dec. 8th by 10pm; Bonus blog: Dec 12th at 10pm

Figures: TEM images

- at low magnification:
 - extent of biomineralization
 - distribution of gold (nickel?)
 - overall structure & density
 - uniformity
 - average length of nanowires

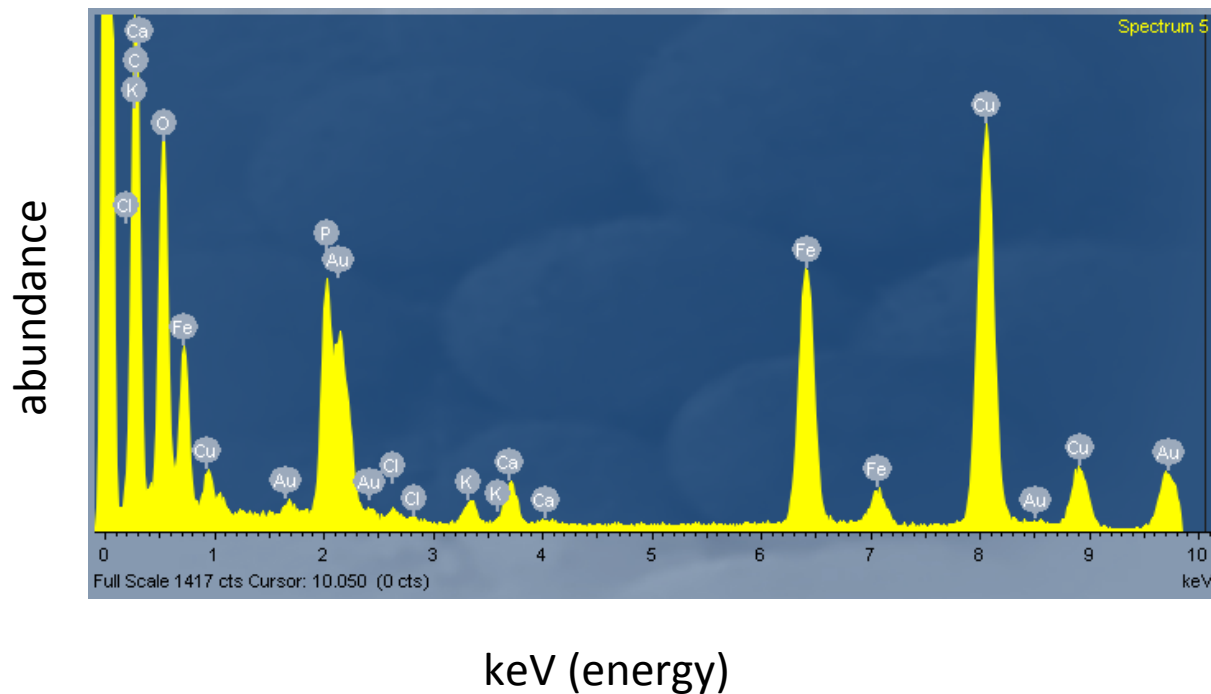


- at high magnification:
 - size of gold nanoparticles
 - lattice of gold atoms (nickel?)
 - amorphous vs. crystal Fe(III)PO_4
 - diameter of nanowires

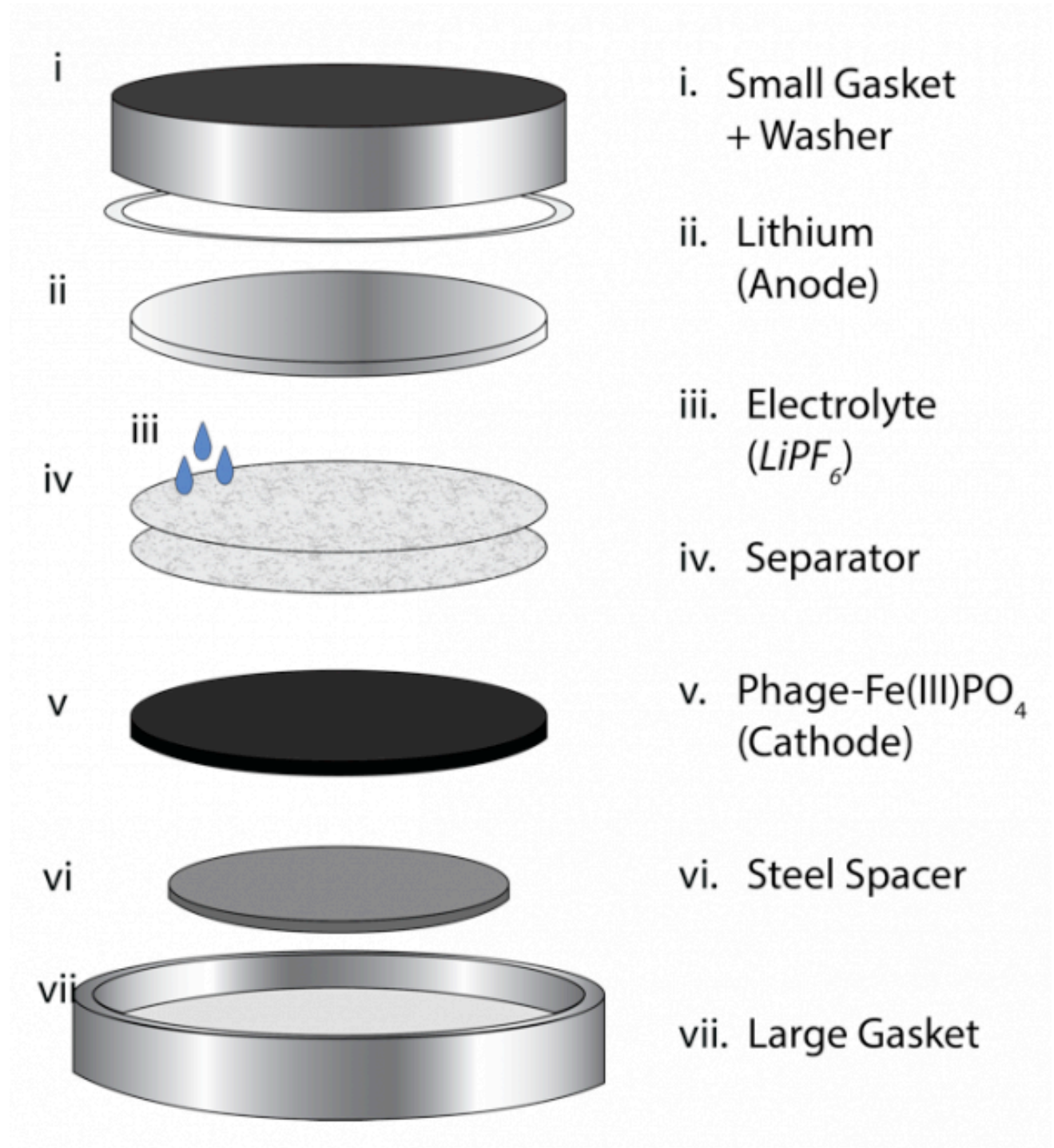


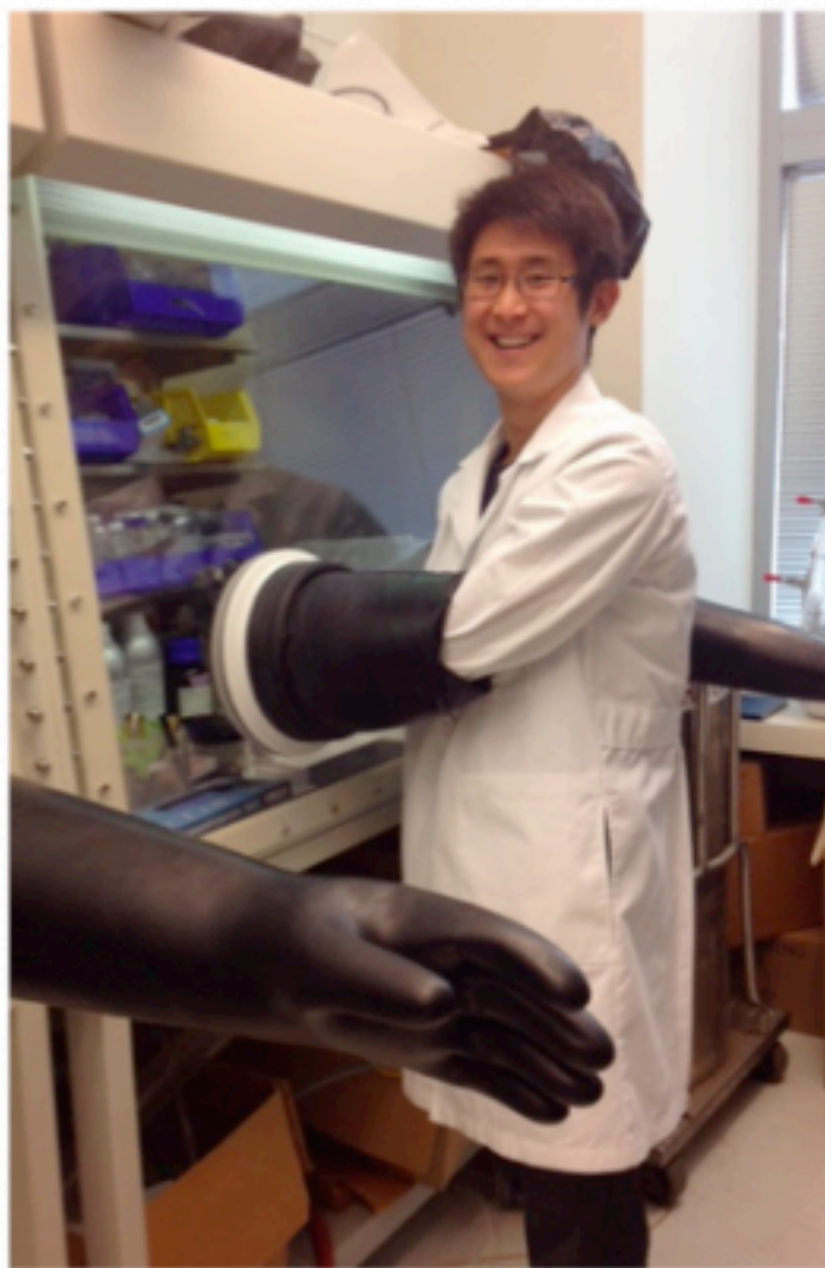
Figures: EDX elemental mapping

- expected: Fe, P, O, Au, (Cu)
 - contamination? Na, Cl, K
 - stoichiometric ratios?



Today: Battery assembly





Today in lab...

- Battery Assembly in Belcher lab
 - 1:40pm: red/orange/white/purple
 - 2:15pm: pink/blue/green/yellow
- Capacity calculations in lab: How does the type of NP-phage affect battery capacity?
 - Add experimental battery details to the wiki today!
- *Use your time wisely:*
 - Improve your research proposal slides
 - Practice your presentation
 - Ask for feedback!