

# M3D4: Solar cell assembly

11/20/14

# Lab business



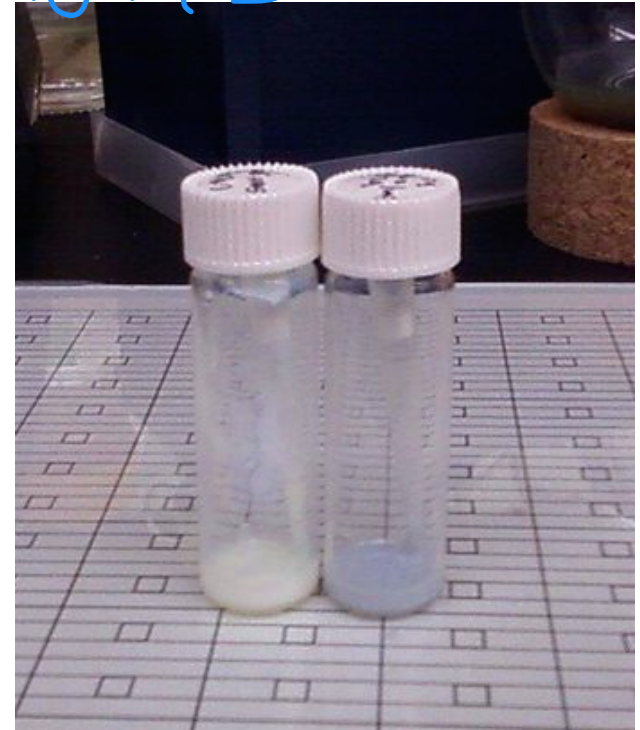
- Lab treat (and real treats!)
- For next *week*...
  - TEM observations
  - Research proposal wiki page
- For next lecture...
- Module 2 rewrite due November 26 at 5p
- Module 3 assignments
  - Mini-report due December 4
  - Research proposal presentations on December 9

returned  
tomorrow

# While you were away...

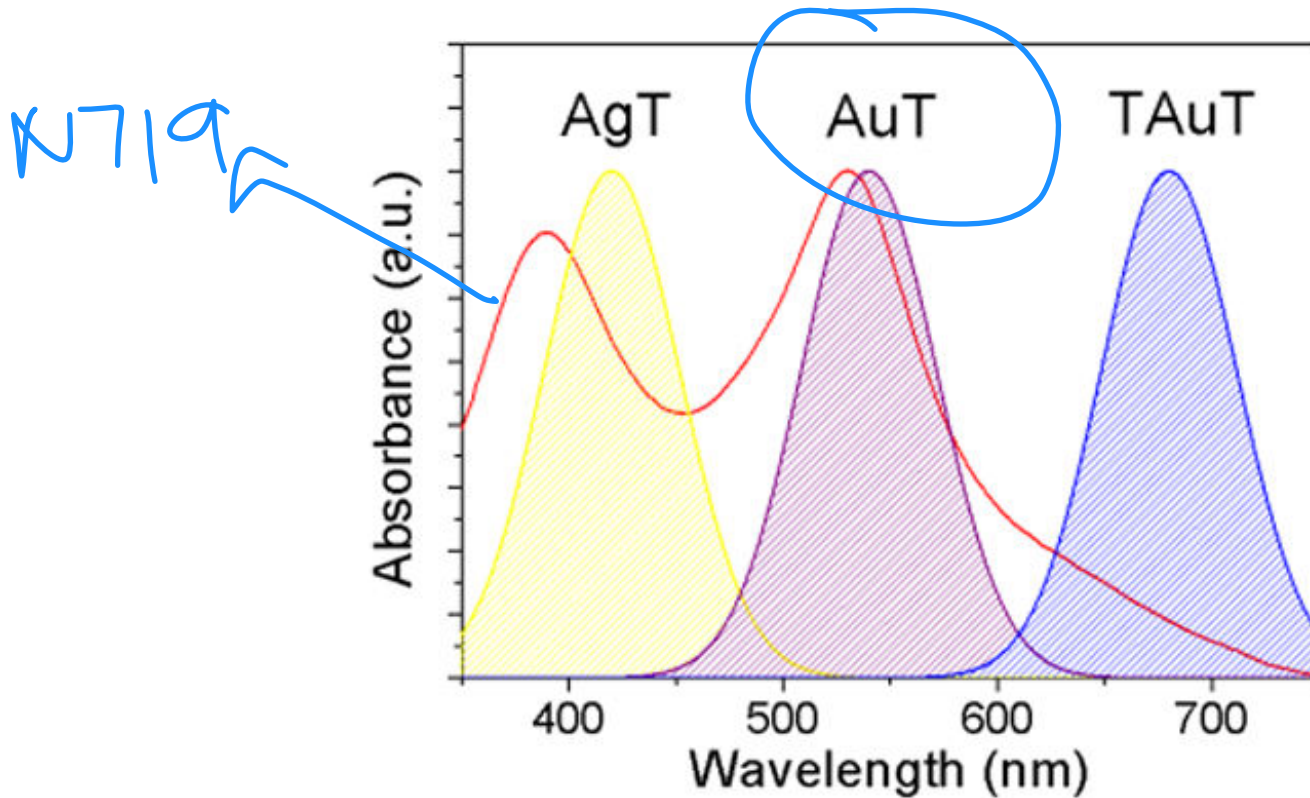
=hand works

- Au:phage:TiO<sub>2</sub> complexes were dried and ground
  - Ethyl cellulose (binder) and terpineol (solvent) were added to make paste
- FTO glass (base of anode) was coated with TiO<sub>2</sub>
- Your part will be to apply the paste to the FTO glass base (doctor blading)



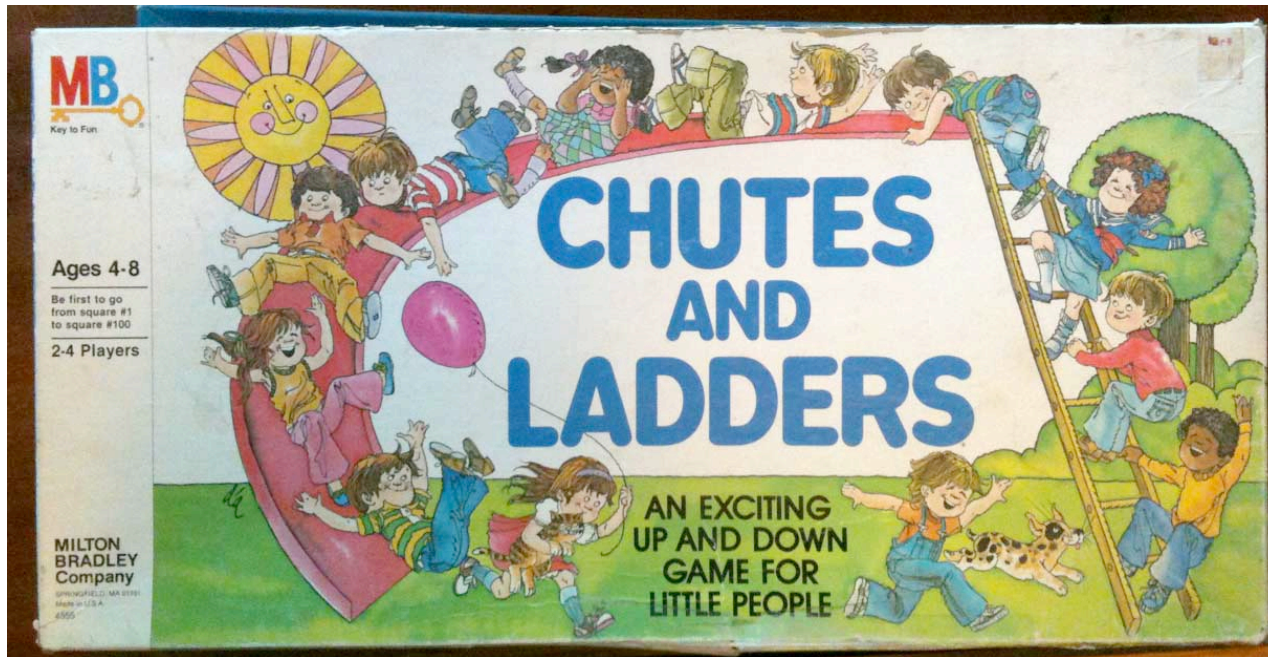
# Improving light collection

- Overlap maximizes the effect of plasmon-enhanced light harvesting

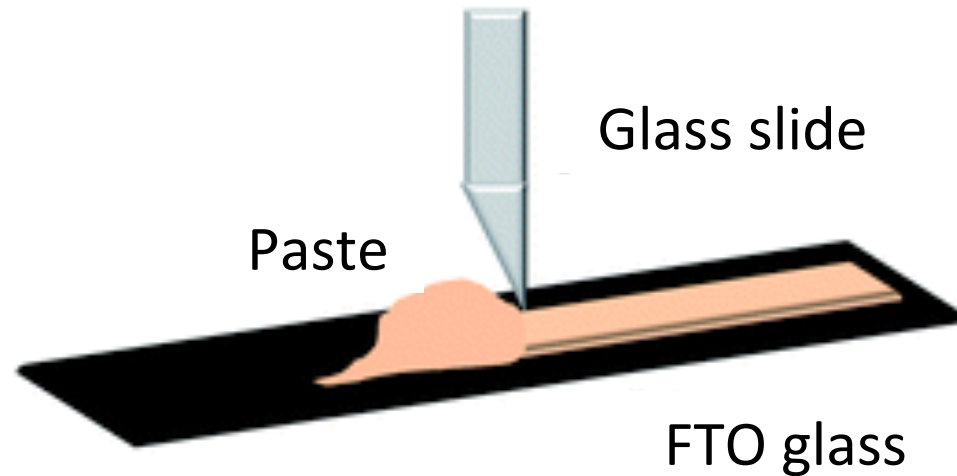


# Improving electron collection

- Incorporation of single-walled carbon nanotubes (SWNTs) enhances electron collection



# Solar cell preparation



- Doctor blading
  - Caste created with tape
  - Paste equally distributed in caste using glass slide
- Demo and practice with glue, etc.

# Today

1. Practice solar cell assembly
2. Prepare anode in Belcher Laboratory
3. Discuss research proposal ideas

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