

Mod 3 Day 5: Solar Cell Testing

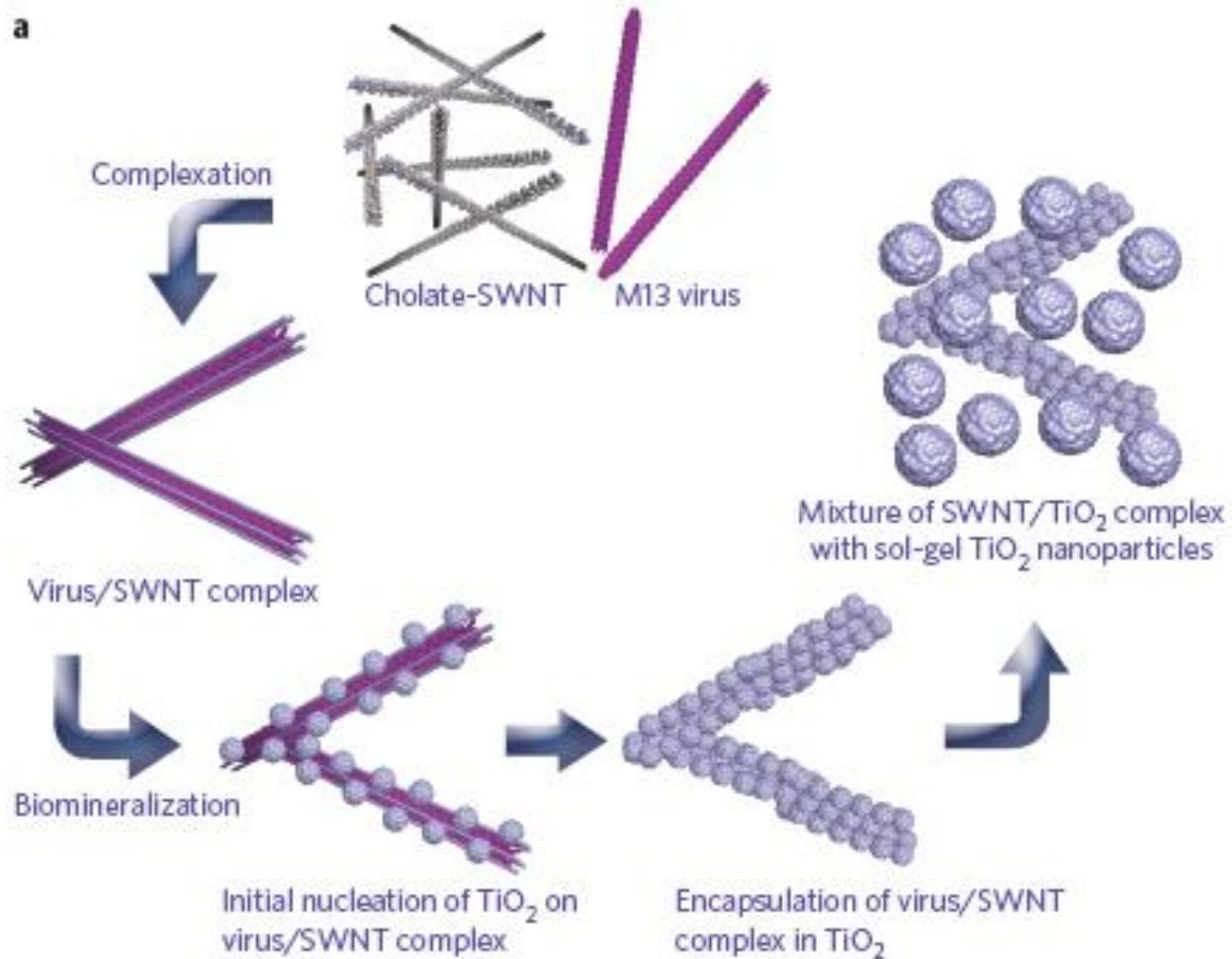
12/3/2013

- **LAB QUIZ**
- **Belcher lab – testing Solar Cell Efficiency**
- **Proposals!**

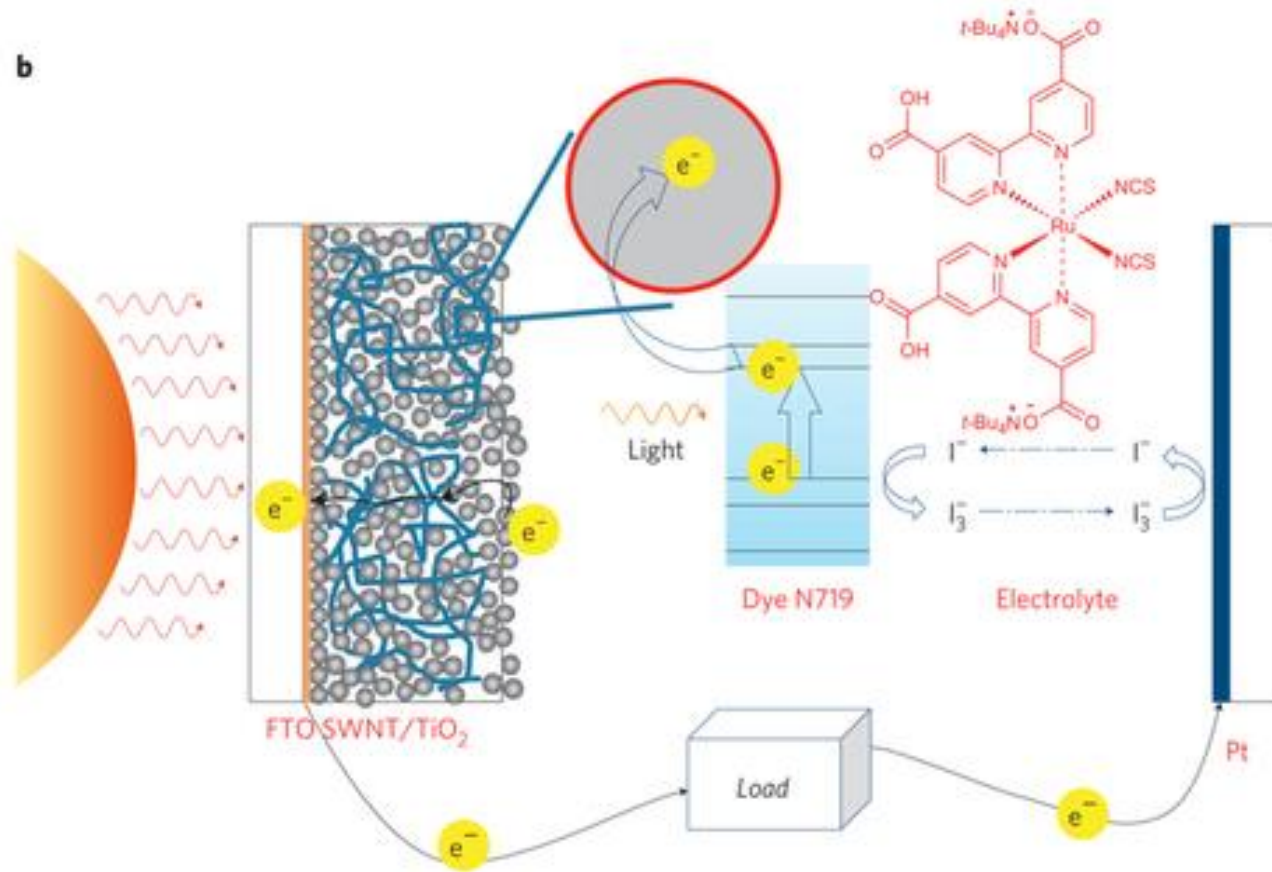
Announcements

- M3 mini-report due **12/5 by 5pm**
 - Wiki: hints for figures and Discussion section
- M3 notebooks due **12/5**
- Research proposals
 - Presentations in one week! **12/10**
 - D6 lecture – Atissa!
- Final reflection due **12/12 by 11am**
 - Extra credit, optional reflections due **12/12**

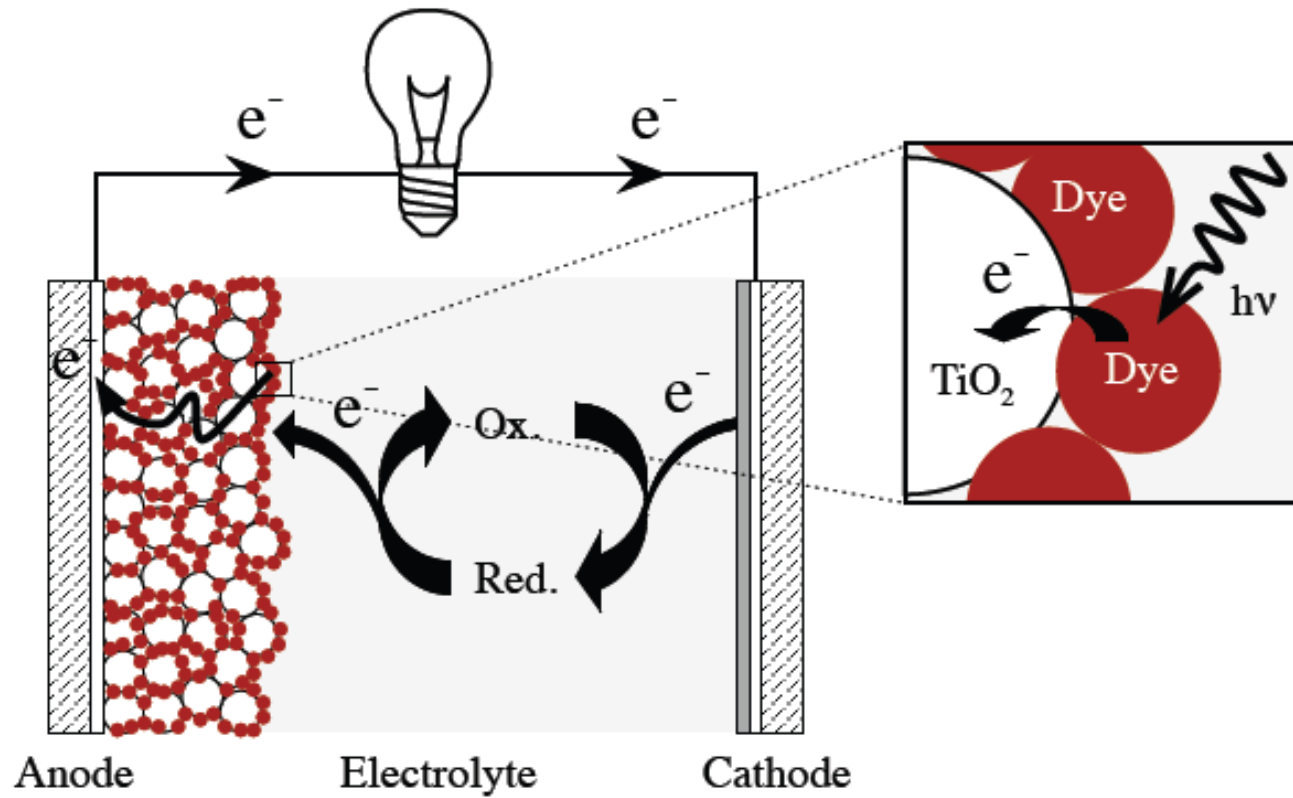
Construction phase review



Big picture – How are we increasing solar cell efficiency?



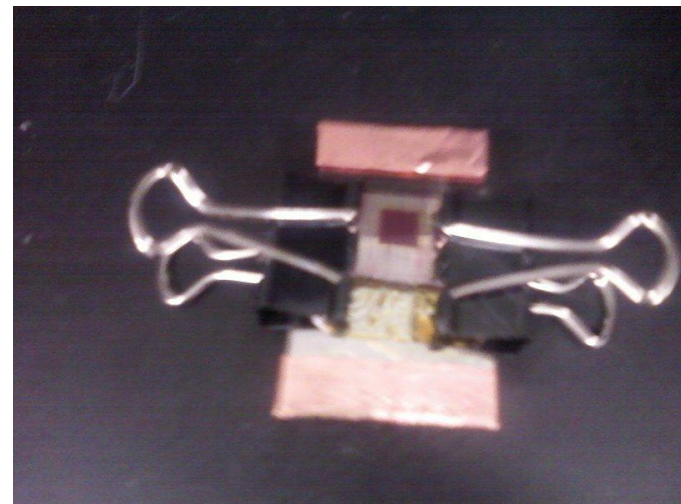
Dye has already been added by Griffin



Today:

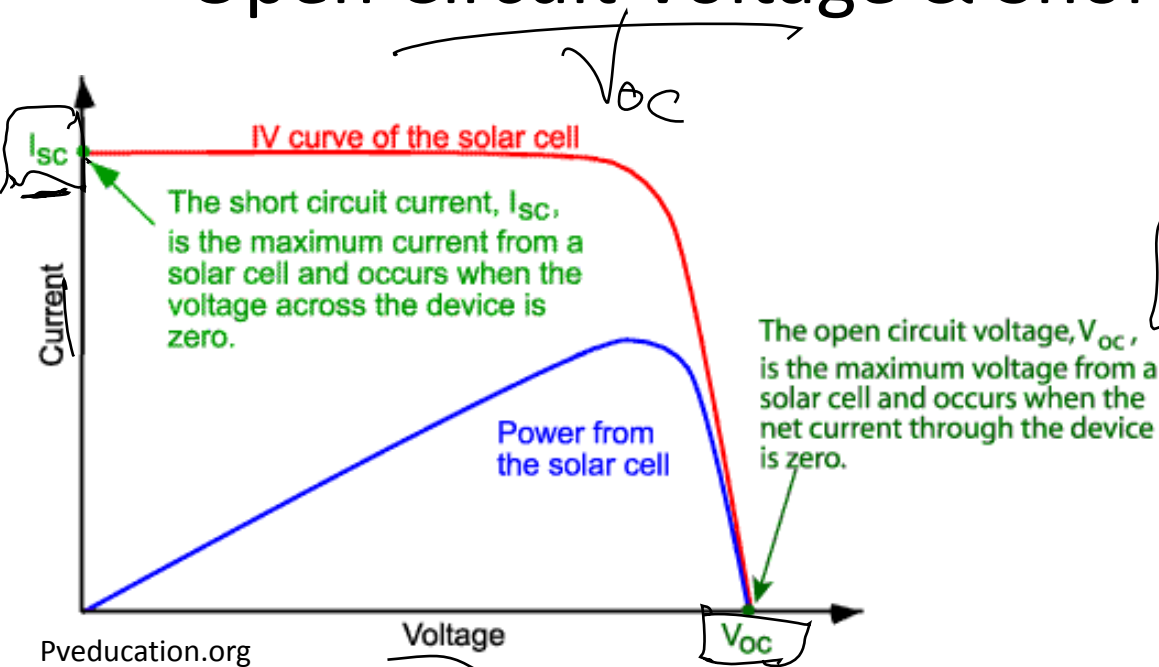
1. Contain & cook anode
2. Add redox mediator/recycler
3. Add counter-electrode

REPORT ON D5 TALK PAGE

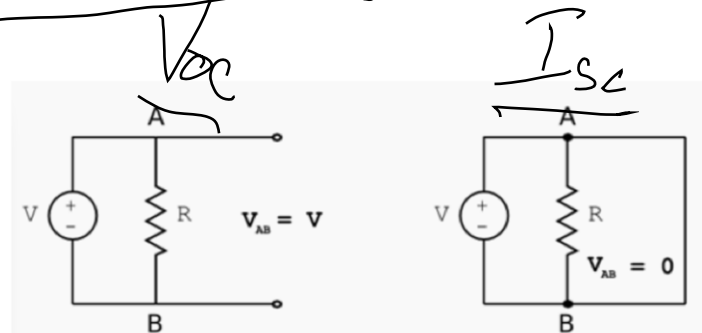


Solar Cell Efficiency: Voc and Isc

- Measure solar cell area
- Overall conversion efficiency:
Solar to electric power
- Open Circuit Voltage & Short Circuit Current



See M3D6



Solar Cell Efficiency: Fill Factor

- Maximum voltage and current
Theoretical maximum power, $P = V_{oc} * I_{sc}$
- Fill Factor

