Introduction to the Materials Science of Rechargeable Batteries

Lecture 1

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PURDUE Engineering
About Edwin García

- Associate Professor of Materials Engineering
- Have been at Purdue for eight years
- Focus is on Theory and Simulation of Materials (Thermodynamics and Kinetics)

Interests include:
- Rechargeable Battery Technology
- Microstructure Design
- Ferroelectrics
- Light Emitting Diodes
More About Edwin García

More Interests:
- Microstructure Evolution
- Super Computing
- Fundamentals of Nucleation and Growth

Other Interests:
- Mexican and World Soccer (religiously, every night)
- The Daily Show (whenever possible)
Today

- Course Administration
- Office Hours
- Introduction to Batteries (if time permits)
Final Grade Breakdown

- 20% Homework
- 40% Exam 1
- 40% Exam 2
Homework

- Homework will be posted on Fridays
- Will be collected a week later
- Teams of two-students are encouraged
- 5 extra points per HW
References
Class Webpage

https://nanohub.org/groups/mse597rb_2013/
Adding Yourself to the Class Website

• go to: https://nanohub.org/groups/mse597rb_2013/
  and request to be added to the list
• you will get a confirmation email
• you are done!
Dates and Deadlines

- **Mid Term: October 18th**
  - Will focus on the development of thermodynamic and kinetic concepts associated to electrochemical systems

- **Second Mid Term: December 6th**
  - Will develop an understanding on the reaches and limitations of currently used battery systems

- **Final Exam: NO FINAL**
Class Policies

YOU'RE NOT ALLOWED TO HAVE INTERNAL PHONE LISTS ON YOUR WALL.

THERE ARE EXCELLENT REASONS FOR THIS POLICY, AND I HOPE TO SOMEDAY KNOW WHAT THEY ARE.

THEY'RE GETTING SUSPICIOUS ABOUT THE RANDOM POLICY GENERATOR.

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Attendance and Participation

- Will Keep Track of Students’ Participation
- Questions and Comments are Encouraged!