

Christopher Newport University Energy Related Research

Tarek Abdel-Fattah

CNU Director of The Applied Research Center

Energy Workshop

VMASC

August 12, 2009

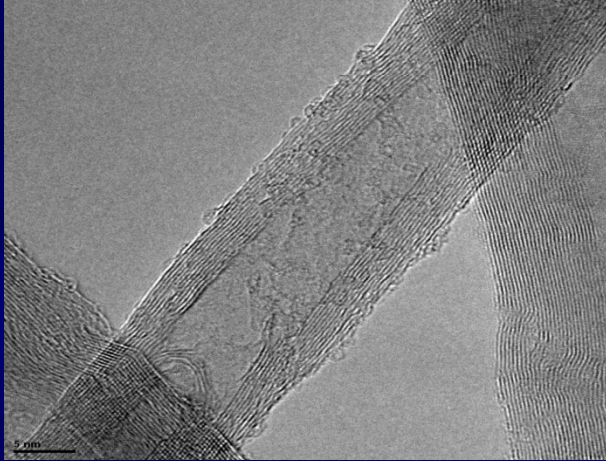
Location of the ARC



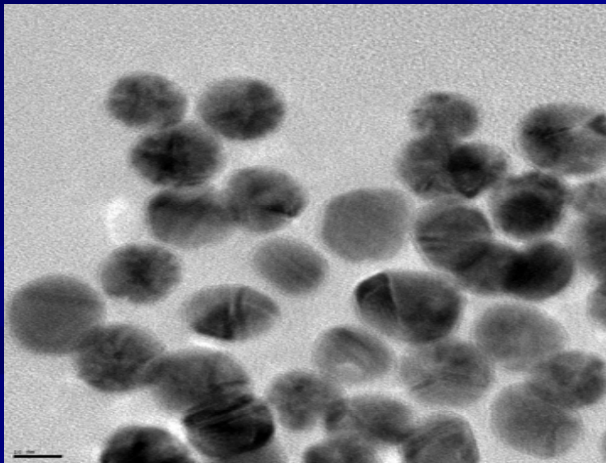
Materials Characterization

- High Resolution Transmission Electron Microscope (HRTEM)
- Nano-Indentation
- Scanning Electron Microscope (SEM)
- Probe Station for Electrical Device Testing and Agilent B1500A Semiconductor Device Analyzer
- Optical Microscope
- Atomic Force Microscope (AFM)
- Scanning Tunneling Microscope (STM)
- X-Ray Photoelectron Spectroscopy (XPS)
- Time-Of-Flight Mass Spectrometer
- Raman & Optical Spectrophotometer
- Ellipsometer

Mission



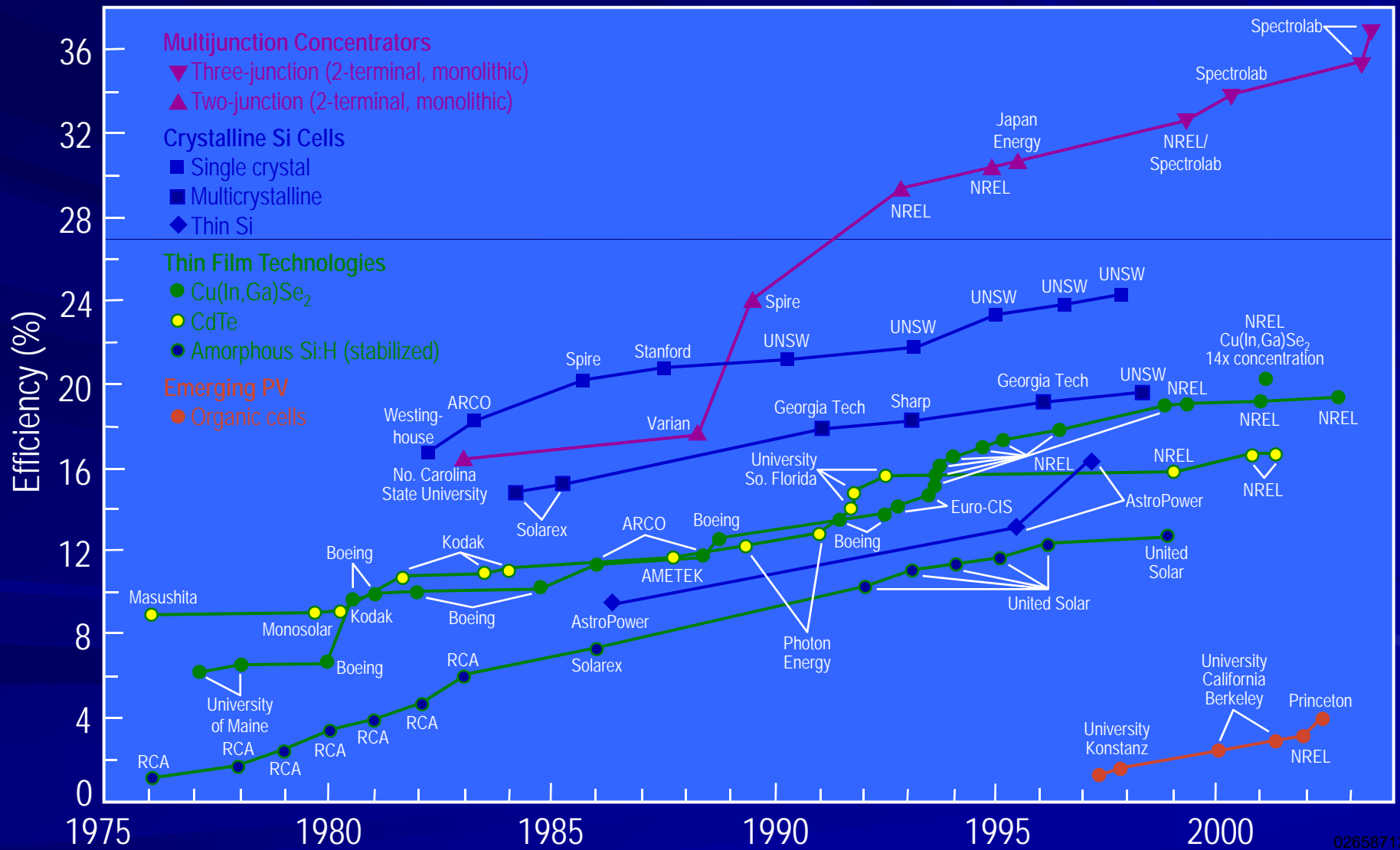
- To be the leader in research, development and education on synthesis, characterization and application of advanced materials.



What Are We Doing

- Carbon Nanotubes and Nanoparticles
- Advanced Nanocomposite Polymeric Materials
- Materials Characterization
- Electronic Materials
- Thin Films
- **Biodiesel Fuel**
- **Organic Solar Cells**

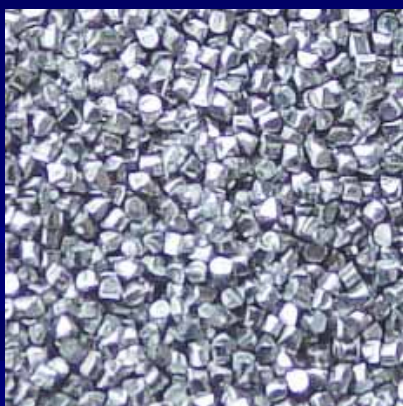
CELL EFFICIENCIES



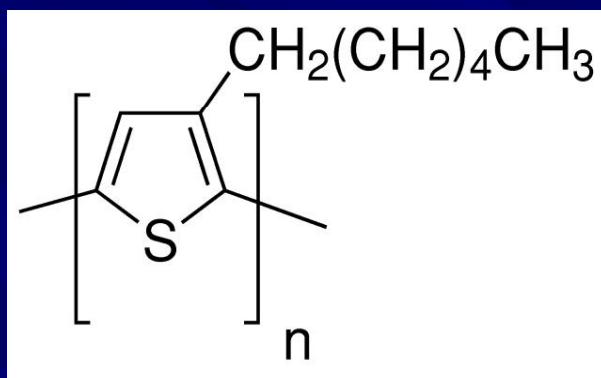
ITO



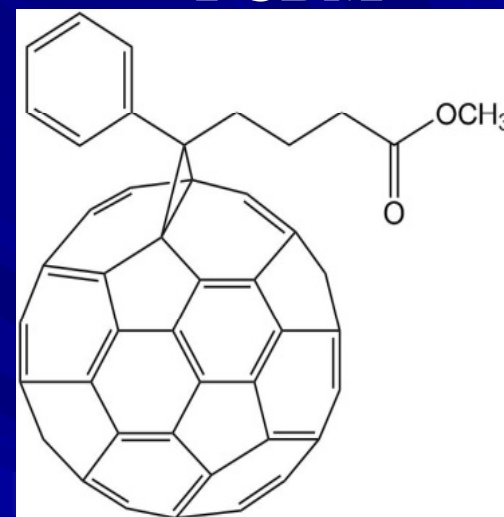
Aluminum



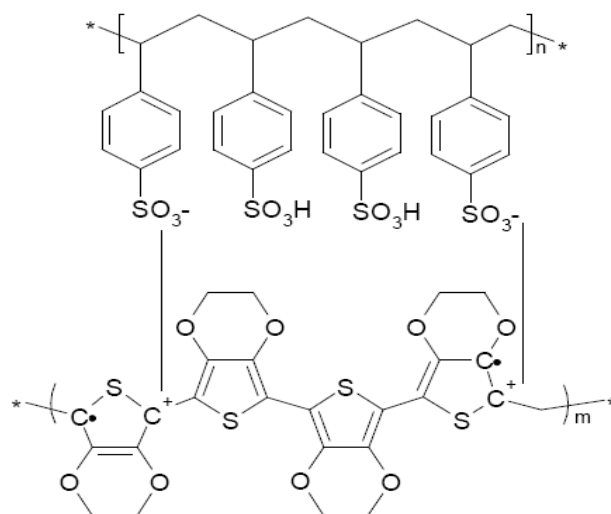
P3HT

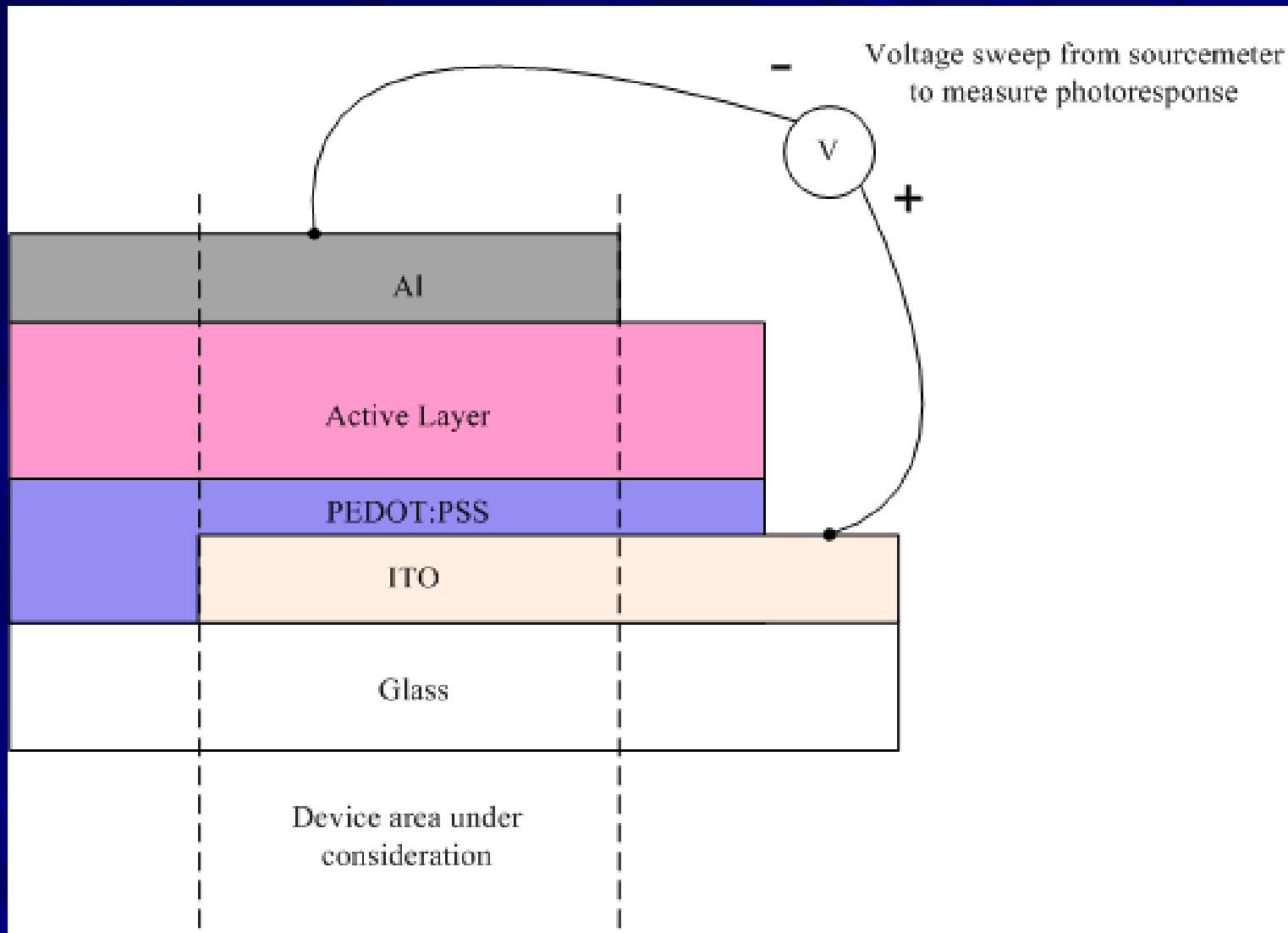


PCBM



PEDOT:PSS





Outcomes

■ Biodiesel Fuel

One Patent in preparation

■ Organic Solar Cells

One paper submitted

One patent will be submitted

Thank You

- For more information and contact:
- Please visit our web site at <http://arc.cnu.edu>
- My email is fattah@cnu.edu