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Research Interests

- ✧ Dye-Sensitized Solar Cells
 - Gel & Printable Electrolyte
 - Quantum-Dot Materials
- ✧ Self-Assembly Monolayers and Langmuir-Blodgett Films
 - Surface Modifications
 - Electrochemical Biosensors

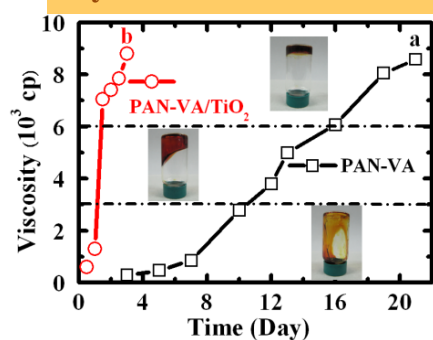
Honors

- ✧ 2014 Distinguished Engineering Professor Award, Chinese Institute of Engineers.
- ✧ 2013 Outstanding Research Award, Ministry of Science and Technology.
- ✧ 2011 NCKU Distinguished Professor.
- ✧ 2008 Professor Tsai-The Lai Award, Taiwan Institute of Chemical Engineers.

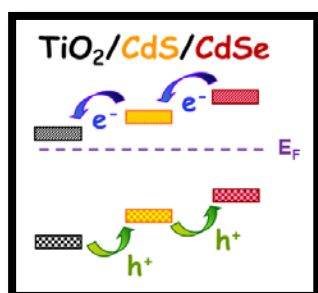
Representative Publications

- ✧ "In-Situ Gelation of Electrolytes for Highly Efficient Gel-State Dye-Sensitized Solar Cells," *Adv. Mater.*, **23**, 4199 (2011).
- ✧ "Highly Efficient Quantum-Dot-Sensitized Solar Cell Based on Co-sensitization of CdS/CdSe," *Adv. Funct. Mater.*, **19**, 604 (2009).
- ✧ "Manipulation Ordered and Close-Packed Nanoparticle Monolayers at Air/Liquid Interface Coupling Langmuir-Blodgett and Self-assembly Techniques," *Soft Matter*, **5**, 2962 (2009).
- ✧ "Electrodeposition of Au Monolayer on Pt(111) Mediated by Self-Assembly Monolayers," *J. Am. Chem. Soc.*, **128**(11), 3677 (2006).

Dye-Sensitized Solar Cells

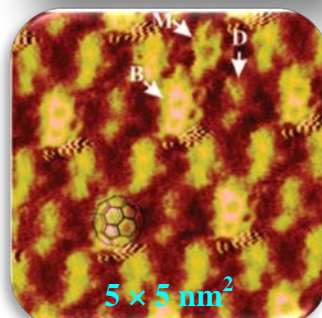
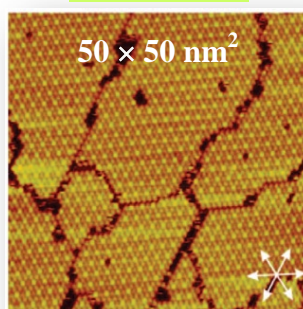


ACN-based gel electrolyte



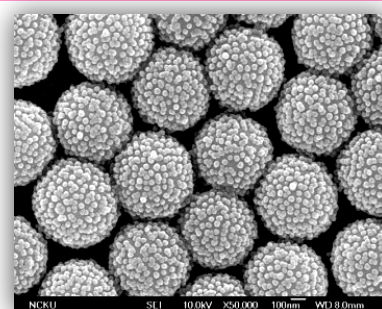
Cascade semiconductor alignment

EC-STM

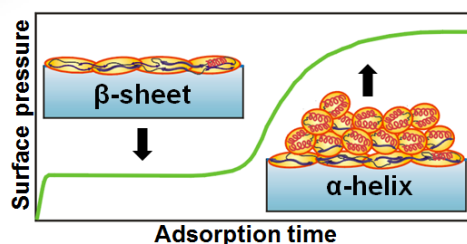


C₆₀ adlayer on I/Au(111) surface

Langmuir-Blodgett Technique

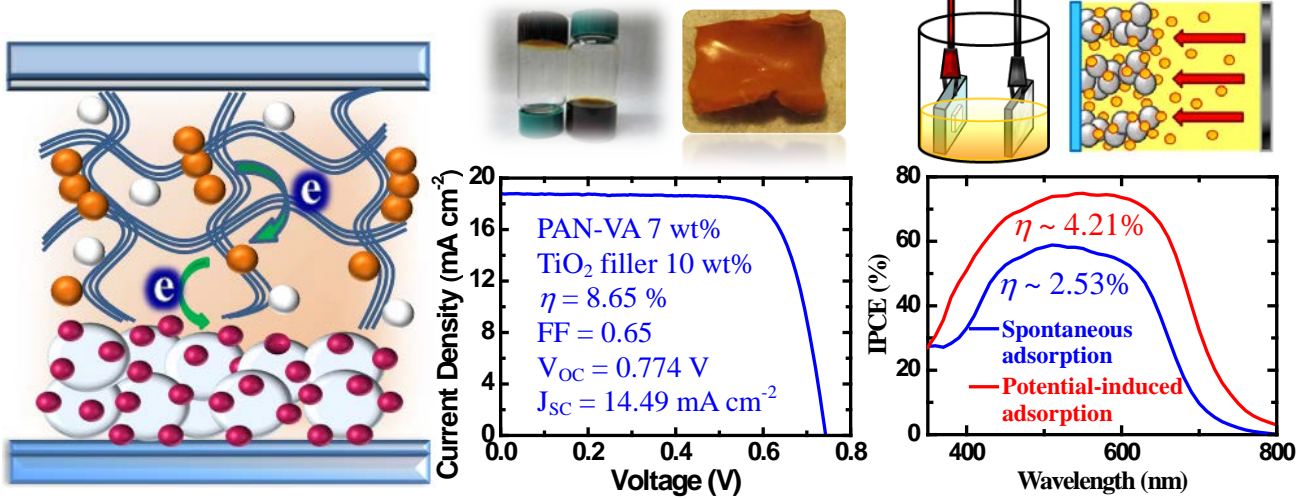


Raspberry-like SiO₂ particles



Conformational control proteins by LB technique

☆ Dye-Sensitized Solar Cells

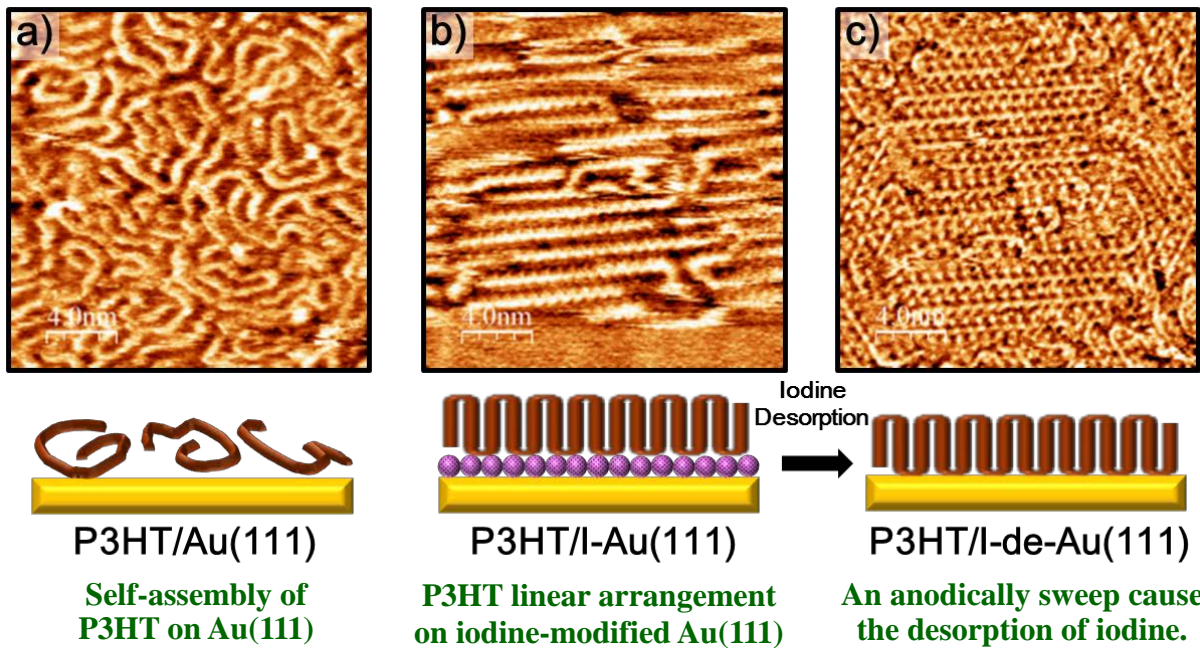


DSSC with polymer gel electrolyte

PAN-VA/TiO₂ composite electrolyte

Potential-induced ionic adsorption for QD

☆ In-Situ Electrochemical Scanning Tunneling Microscopy



☆ Langmuir-Blodgett Technique

