

Protein Self Assembled Nano Solar Cell

Oceanit

Ken Cheung, PhD, S&T Manager

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Problem

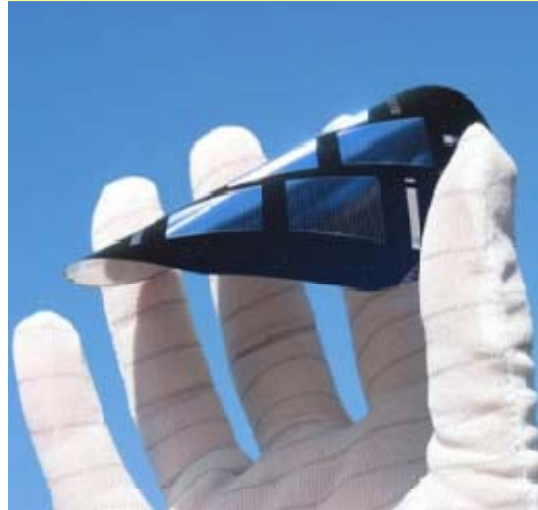
- Fossil fuels are being depleted and continue to contribute to global climate change
- Oil prices are climbing as demand for energy increases
- Solar energy is abundant but silicon-based photovoltaic technology is very expensive



Silicon Technology



Thin Film Technology



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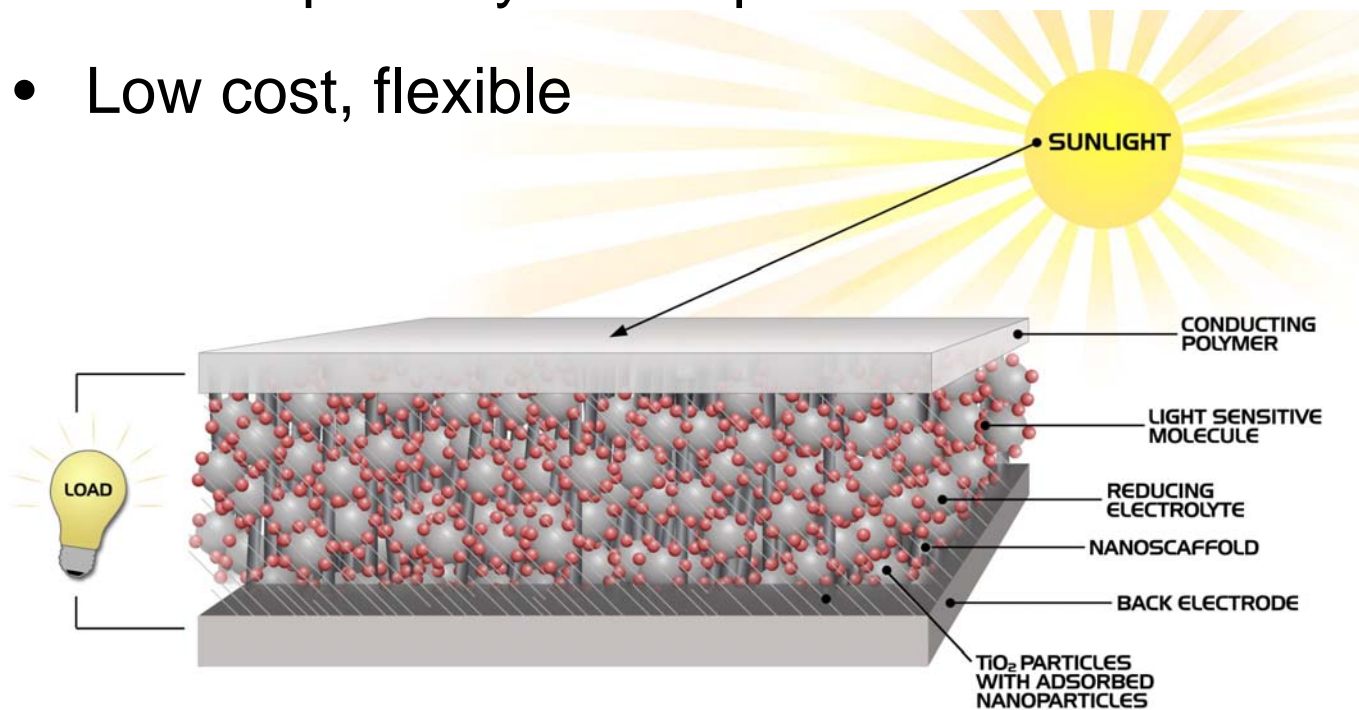
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Solution

- Non-silicon dye-sensitized-solar-cell (DSSC) technology
- Mimics photosynthetic process
- Low cost, flexible



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Team

- Vinod Veedu, PhD
- Venkat Kamavaram, PhD
- Garret Hashiro, MS



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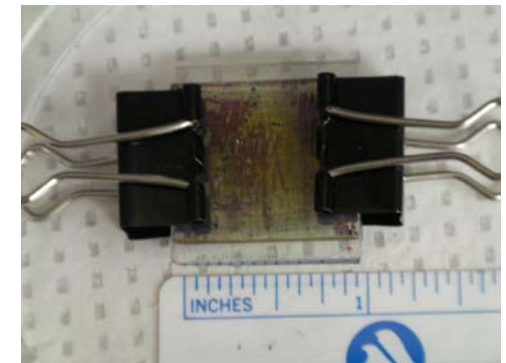
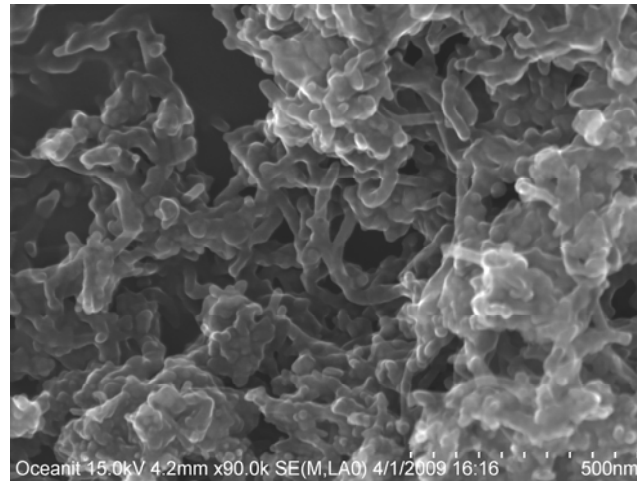
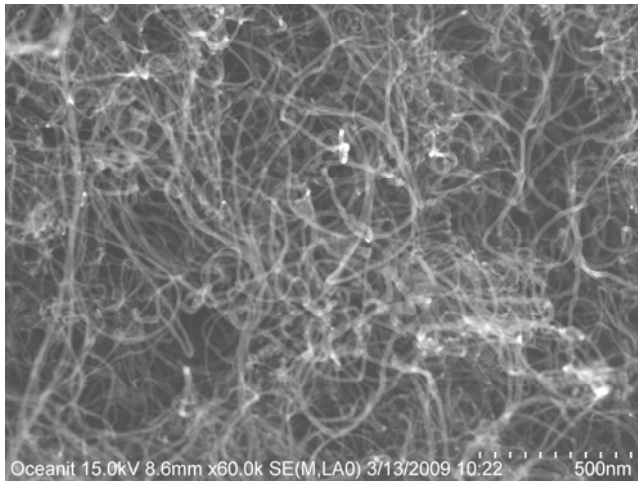
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Status

- Achievements: Fabricated & characterized TiO_2/CNT composite material; deposited composite material on conductive ITO glass; adsorbed synthetic dye to $\text{TiO}_2/\text{CNT}/\text{ITO}$ electrode; assembled a 1"x1" test solar cell using fabricated electrodes
- Upcoming: Use electrophoresis deposition to coat ITO glass; fabricate and characterize test cells under solar simulator; refinement and optimization



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Company Profile

- Company name: Oceanit
- Date Founded: 1985
- No of employees: 150
- Business areas: Aerospace, Consulting Engineering, Life Science and Information Technology
- Latest and most relevant Projects, Products, Services, Spin offs,
 - Nanoconcrete [HTDV and State FoF]
 - Shapeable Fuel Cells [CEROS]
 - Non-silicon-based Photovoltaics [HTDV]
 - Inspecta Emergency Damage Assessment [HTDV and State FoF]
 - Wind LIDAR [CEROS, SBIR, State FoF]
 - Nanopoint, Inc. [2005 spin off – Fantastic Voyage]
 - Hoana Medical, Inc. [2002 spin off – Star Trek Bed]

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