Catalyzing Innovation in PV Manufacturing
An NSF Workshop
May 6-7th, 2010

Workshop Sponsors
Dr. Greg Rorrer: Program Director, Energy for Sustainability
Dr. Grace Wang: Program Director, SBIR/STTR
Dr. Carol Bessel: Program Director, Chemistry
Dr. Linda Sapochak: Program Director, DMR

Workshop Host
Colorado School of Mines
Renewable Energy Materials Research Science and Engineering Center
P. Craig Taylor, Director
Workshop Chair: Colin Wolden
Industrial Participants
Terawatt Challenge

- 30 TW of clean, renewable energy by 2050
- Require 1 TW/year capacity

http://visibleearth.nasa.gov
Growth and Costs

- Is 20% growth sustainable?
- Key: Further reductions in cost/W<sub>p</sub>

From Green

PV Capacity (TW/yr)

Efficiency (%)

Production costs (US$/m<sup>2</sup>)

PV Manufacturing Workshop
Improve Efficiency or Decrease Costs?

- Efficiency: Gap between modules & record cells
- Costs: Learning Curve 80%
- Require Improvements in Manufacturing

From Surek, 2005
Workshop Goals

Identify the potential technologies and innovations that offer low-cost, high-conversion-efficiency and sustainable photovoltaic materials.

Determine Key Technical Challenges

- Topics best addressed by Academia
- Topics best addressed by Industry
- Topics best addressed by Collaboration

Develop Mechanisms to Facilitate Effective Partnerships
Discussion Sessions

I. Inorganic Thin Film PV Technology
II. Organic/Dye-Sensitized PV Technology
III. Catalyzing Partnerships
IV. Scale-up to TW/year Production

Panel: Scientific Workforce Development

- How are we doing?
- What are your current/expected needs?
- Views on disciplinary vs. PV specific training?