



nano-c[®]

Materials that Power Our World

Nanostructured Carbon

22nd NREL Growth Forum

(modified presentation)



Nanostructured Carbon

Mission critical component in advanced energy & electronic devices

Lighter Weight

Lower System Cost

Improved Form Factor



Strong History

- Founded in 2001 based on MIT technology
- Manufacturing and R&D in Westwood, MA
- Product sales growth 85% per year '07 to '09
- PMN approval in process with the EPA
- 9 patents (global coverage), 16 pending



Capable Team

Viktor Vejins

CEO; 12-years in leading & developing advanced materials businesses; 15-years in consulting to materials and chemicals industry on strategy and product development

**Henning
Richter (PhD)**

15-years in nanostructured carbon R&D; combustion and process chemistry

Tom Lada

SM Chem. Eng.; 8-years in process development & scale-up; combustion and process chemistry

**Ramesh
Sivarajan (PhD)**

12-years in nano-materials and thin film R&D; dispersions, inks and coatings

13 Staff

3 PhDs; Operations; Finance

**World Class Technical Advisors and
Board of Directors**



Strategy

Differentiate

- Add value beyond materials
- Create defensible IP position

Cost Focus

- Common platform across product line
- Continuous & scalable operation

Operate with
Sustainability

- Unique vacuum process inherently safe
- Committed to responsible development



Products and Markets

Selected Markets & Applications	Addressable Market (2015)	Status	Timing to Launch
Organic Photovoltaics (OPV) <i>Solar C-FD*</i>	\$0.25B	Revenue from 1 st gen. C-FDs 2 nd gen. in R&D	Underway
Touch Screens, Displays and Solar Electrodes	\$1B	<i>"C-Inks**"</i> Validating methods Limited trials underway	18 to 24 months
Energy Storage Electrodes and Additives	\$1.5B		
Fuel Cells Bipolar Plates	\$0.15B		

*Carbon Fullerene Derivative

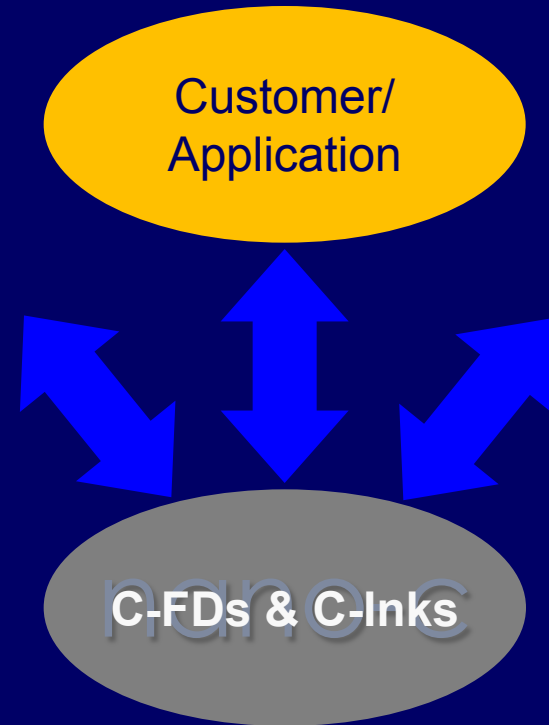
**Carbon Nanotube Ink/Dispersion



Business Model

Partner: Capital-efficient growth

- Leverage competencies market-by-market
- Build value through IP and business relationships
- Recognize time & range of expertise needed

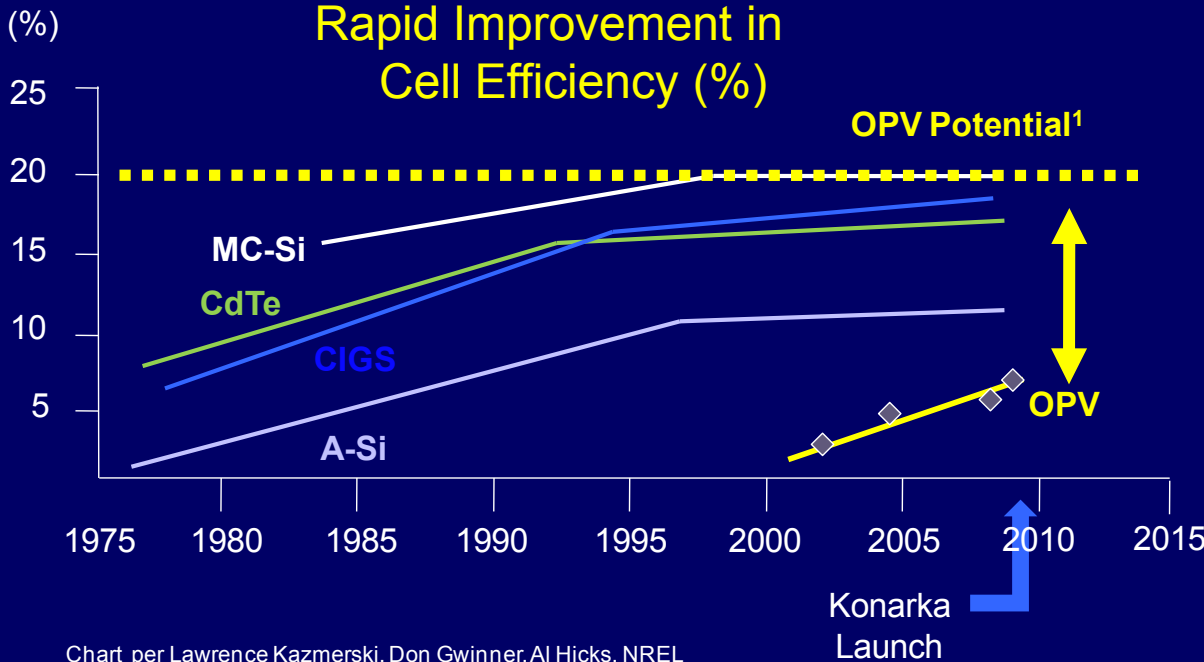


Allows Nano-C to Focus on its Core Competencies



OPV Potential: Grid Parity

Rapid Improvement in Cell Efficiency (%)



Lowest Cost (COGS in \$/Wp)

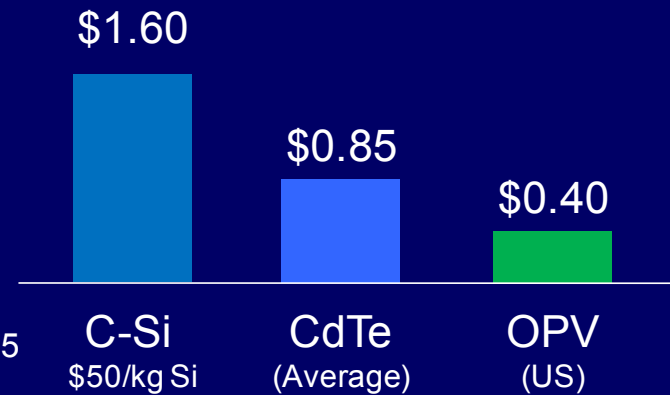
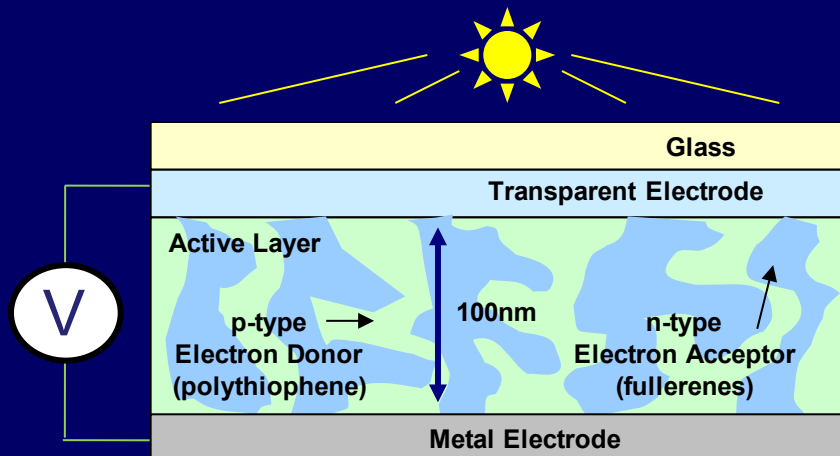


Chart per Lawrence Kazmerski, Don Gwinner, Al Hicks, NREL
 (1) G.Dennler, M. Scharber & C. Brabec; Adv. Mater. 2009

Source: Deutsche Bank 1/09; Nano-C for OPV; FSLR



- Up to 75% of the active layer is a Solar C-FD n-type
- Common p-type is polythiophene
- Devices may be printed



Nano-C's *Solar C-FDs* Outperform

Challenges

- Efficiency
- Lifetime

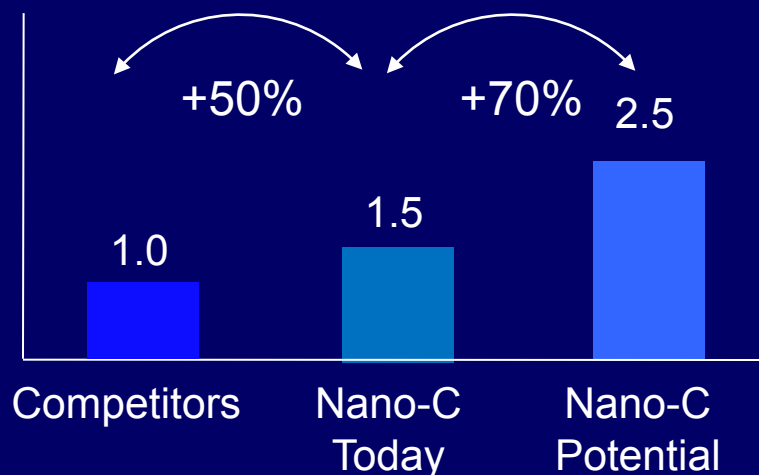
Entry Point Applications

- Portable power
- Light weight
- Efficiency/lifetime not a deterrent

Major Customers

- Konarka launch in '09
- Plextronics' pilot '09
- Solarmer pilot '10

Normalized Device Efficiency Using Nano-C's Solar C-FDs



Note: Tested using same test methods with P3HT and C₆₀ based C-FDs

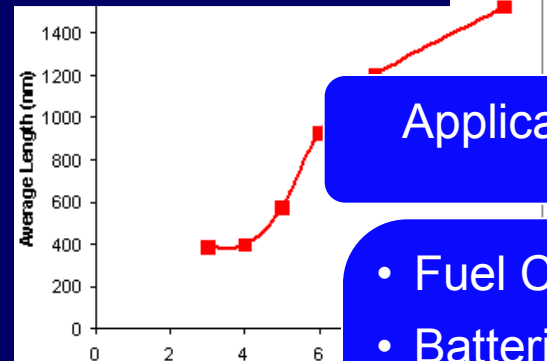
Nano-C's Value-Add in *C-Inks*

Unique ability to control formation

- Game-changing chemistry
- Disruptive technology
- Broad application

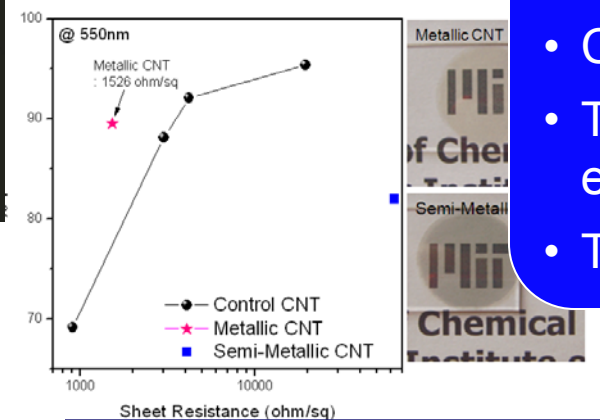


Can be printed, coated and compounded

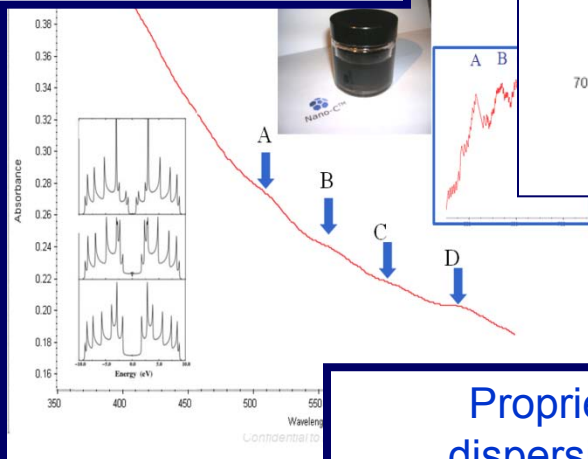


Applications

- Fuel Cells
- Batteries
- Capacitors
- Transparent electrodes
- Transistors



Exclusive chemistry to isolate semi- and metallic SWCNT



Proprietary surfactant and polymer free dispersions maintains electronic structure



Strong Earnings Potential

Short-term

- Solar C-FDs moving from R&D to commercialization
- Rapidly growing demand
- Filling pilot-scale orders
- Overall revenue increasing 50% per year
- Breakeven early 2011

Long-term

- Positive outlook for energy and electronics
- Proprietary C-FD and C-Ink products
- Scalable, continuous operations
- Capital efficient
- Environmental sustainability

Exit

j-v or strategic sale to materials or chemicals company



Nano-C: A Great Opportunity

- Capable team
- Growing revenue in Solar C-FDs and C-Inks
- Diverse set of market opportunities
- Proven world-class technology with disruptive potential
- Scalable capital demands
- Solid return potential



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