MAGNOLIA SOLAR CORPORATION

Creating New Technology For A Greener Planet

Corporate Presentation
March, 2013

WWW.MAGNOLIASOLAR.COM

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Forward-Looking Statements

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Forward-Looking Statement: This presentation contains forward-looking statements, including, without limitation, statements concerning our business and possible or assumed future results of operations. Our actual results could differ materially from those anticipated in the forward-looking statements for many reasons including: our ability to continue as a going concern, adverse economic changes affecting markets we serve; competition in our markets and industry segments; our timing and the profitability of entering new markets; greater than expected costs, customer acceptance of our products or difficulties related to our integration of the businesses we may acquire; and other risks and uncertainties as may be detailed from time to time in our public announcements and SEC filings.

Although we believe the expectations reflected in the forward-looking statements are reasonable, they relate only to events as of the date on which the statements are made, and our future results, levels of activity, performance or achievements may not meet these expectations. We do not intend to update any of the forward-looking statements after the date of this document to conform these statements to actual results or to changes in our expectations, except as required by law.

Magnolia Solar is Addressing Issues Limiting Solar Industry

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- Major issues limiting conventional solar power technologies
  - Heavy and rigid modules
    - Conventional silicon-based solar cells are
      - Rigid and require heavy support structures
      - Require more semiconductor material
    - Limits deployment in mobile and portable power applications
  - Reflection losses
    - Incident light reflects off the front surface causing lower power output
    - Problem particularly severe due to reflection losses
      - During dusk and dawn when sun is low in the horizon
      - In hazy and humid climates
  - Limited efficiency
    - Typical multi-crystalline silicon panels have efficiency of about 15 percent
    - Existing thin-film panels are even lower in efficiency
    - Lower efficiency requires larger footprint for a given power requirement

Magnolia Solution: High-Efficiency, Flexible, Thin-Film Solar Power

Magnolia Solar Technical Approach

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- **Deploy thin-film semiconductor materials on flexible substrates**
  - Using advanced semiconductor material for ultra-high performance cells in the 30-40% efficiency range for special applications
  - Using modified CIGS structures with increased power output for commercial applications
  - Deploying on flexible stainless steel, titanium, and polymer substrates
  - Thin-film design minimizes semiconductor material costs
- **Nanostructure anti-reflection coatings to minimize refection losses**
  - Demonstrated reflection loss to less than 1% over the solar spectrum
  - Reflection losses reduced over a wide range of incident angles from dusk to dawn
- **Magnolia innovations can dramatically improve efficiency**
  - Unique semiconductor device design with nanostructure insertion
    - Enhanced solar spectrum absorption and optical path in cell
  - Demonstrated increased voltage output to enable ultra-high efficiency

Magnolia Technical Approach Enables High-Efficiency, Flexible, Thin-Film Solar Power

Magnolia Solar R&D Customers

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- **United States Air Force**
  - Contracts to develop flexible, ultra-high efficiency, multi-junction solar cells for space and defense applications
  - Contracts to develop third-generation, single-junction solar cells employing quantum dot structures to improve performance metrics
- **New York State Energy Research and Development Authority (NYSERDA)**
  - Product development grant to improve thin-film solar cell efficiency by expanding solar spectrum energy band absorption
  - Contract to develop nanostructure-based antireflective coatings
- **National Aeronautical and Space Administration (NASA)**
  - Program to increase PV cell current and voltage (power output) by using quantum-structured active regions and incorporating advanced light-trapping structures

Magnolia Solar R&D operations are cash neutral due to these contracts and the use of the extensive nanotechnology infrastructure in the New York Capital Region

Photovoltaic Manufacturing Initiative (PVMI)

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Leveraging PVMI minimizes capital requirements for Magnolia Solar

Magnolia Solar is a member of PVMI team and the benefits include:

- –DoE, New York State, and private investment of over $300 million in state-of-the-art thin-film facilities for PV product development
- –Significantly shorter commercialization cycle at a substantial cost savings
- –Access to considerable technical expertise, including SEMITECH resources
- –Substantial state incentives to locate in the New York Capital Region

Demonstrated Flexible Solar Cells in PVMI Pilot Facility

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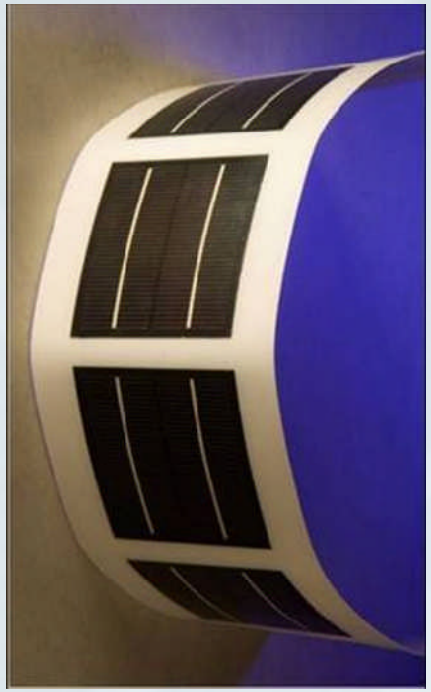

Magnolia Solar is leveraging PVMI solar industry development infrastructure for fabricating advanced flexible, thin-film solar cells

Target Markets for Flexible, High-Efficiency Solar Power

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- **Distributed Power**

  (defense and commercial)
  - Portable power applications
  - Remote applications
  - Residential backup power

- **Portable Power**
  - Remote area power applications
  - Emergency power
  - Disaster recovery

- **Distribution Channels**
  - Designers and installers
  - Direct utility companies

Patent Pending Technology

Nanostructure based Anti-Reflection Coatings on Glass

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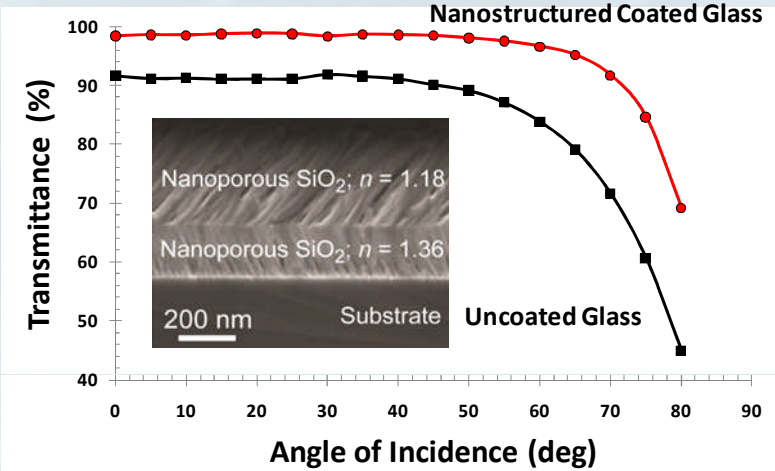

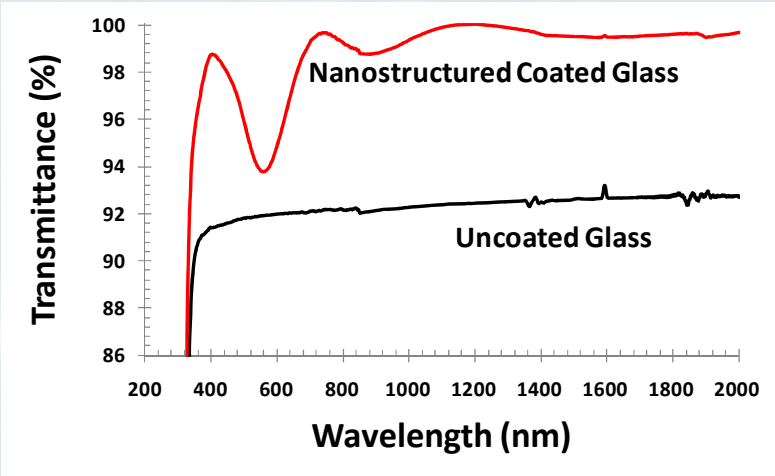

- **High performance AR coatings** employ multiple layers of nanostructured material with tunable refractive index
- **Increases** power output of the panel
- **Maximizes** solar energy absorption over a wide range of angles
- **Reduces reflection losses** throughout the day, even when the sun is low in the sky in the early morning and late afternoon
- **Results in higher energy output** throughout the day, and thus higher overall power conversion efficiency
- **Roll-to-roll** approach to manufacturing process under development

Patent Portfolio Development Approach

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Improve PV efficiency by simultaneously increasing the current and voltage (power) output of thin film solar cells:

- Leverages breakthrough discoveries in quantum dot and quantum well solar cell design
- Employs tunable nanostructure-based optical coatings to minimize reflection losses
- Captures a larger part of the solar spectrum while maintaining high voltage output
- Incorporates advanced light trapping structures to minimize semiconductor material thickness
- Applies to a wide range of thin film materials
- Roll-to-roll manufacturing techniques

Milestones: Completed and Future

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2009	Design and Develop High-Efficiency Solar Cell	NYSERDA Contract $1M Evaluate Designs and Make Test Devices	
2010	Develop Nanostructure based Anti-reflective (AR) Coating Two Air Force Contracts: $200K	NYSERDA 2nd Contract: $250K Evaluate Designs and Make Test Devices	Filed 5 Patents
2011	NASA Contract: $100K Demonstrate Solar Cell Device with Increased Current and Voltage	Demonstrate Improved Performance with AR Coating	Filed 6 Add'l Patents
2012	Demonstrate High Efficiency Solar Cell	Develop Module Packaging	
2013	Develop Manufacturing Process at DOE Funded PVMI Facility at Albany	Transition Process to Manufacturing	

Senior Management

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Dr. Ashok K. Sood – President & CEO

- Over 30 years of experience with solar cells and optical devices for defense and space applications
- Managed technology, programs and product lines for Honeywell, Loral, Lockheed-Martin and BAE Systems
- Managed CdTe, CdS, and HgCdTe products, night vision system product line, ZnO and nanostructure programs from Defense Advanced Research Projects Agency (DARPA)
- Ribbon silicon solar sell development for Mobil-Tyco Solar Energy Corp
- GaAs, CdTe and GaN solar cell technologies for space and defense applications
- B.S. and M.S from University of Delhi, India, and M.S. and Ph.D. from University of Pennsylvania

Dr. Yash R. Puri - Executive VP and CFO

- Over a decade of experience in managing growing technology companies
- Previously Vice President, Finance, GT Equipment Technologies, Inc., now a public company , GT Advanced Technologies, Inc. Nasdaq: GTAT (Previously GT Solar, Inc. Nasdaq: SOLR)
- Professor of Finance, University of Massachusetts, Lowell
- Developed financial models for solar photovoltaic applications
- B.S, M.S. and M.B.A from University of Delhi, India, and M.B.A and D.B.A in International Finance from Indiana University

Management/Technical Team

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Dr. Roger E. Welser – Chief Technical Officer

- Expertise in materials, devices, and high-efficiency solar cells
- Funded by NASA, NSF, and DoD for solar cell development
- Previously, Director of Advanced Technology at Kopin Corporation
- Ph.D. from Yale University and B.S. from Swarthmore College

Dr. Gopal Pethuraja – Senior Scientist

- Senior scientist with several years experience in energy nano-materials research
- Previously at Technion in Haifa, Israel and RPI, New York
- Ph.D. from Indian Institute of Technology (IIT), India

Advisory Board Members

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Dr. Tom Surek

- Nearly 40-year career in photovoltaics
- Pioneer on shaped crystal growth of silicon
- Led R&D activities in thin film photovoltaics for the DOE.
- Achieved world-record efficiencies in crystalline silicon, thin-film, and concentrator solar cells

Professor E. Fred Schubert

- Expert in optoelectronic devices and nanostructure-based antireflection coating technology
- Wellfleet Senior Constellation Professor of Physics at Rensselaer Polytechnic Institute
- Inventor/co-inventor of 28 U.S. patents and author/co-author of > 250 publications

Professor Zhong L. Wang

- Expert in nanostructure growth and characterization of semiconductor materials and devices
- Professor and director, at the Center for Nanostructure Characterization at Georgia Tech
- Performed pioneering work in nanogenerators for energy harvesting
- Inventor/co-inventor of many U.S. patents and author/co-author of > 650 publications

Progress Towards Magnolia Vision

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- **Innovative technologies under development with government funding for high-performance solar cells** – technologies demonstrated and multiple patents filed
- **Highly experienced management team** – significant product development and technology commercialization experience
- **Access to the state-of-the-art resources** – leveraging PVMI investment for product development
- **Solar PV market growing annually at rapid pace** – UN forecasts that world energy needs can be met by all renewables
- **Plans for low cost scalable manufacturing** – both in the US and overseas with joint ventures
- **National defense applications** – applications for ultra-high efficiency, flexible solar cell
- **Goal of $0.50/watt solar cells** – pathway to deliver distributed power to the nearly 2 billion people around the world with no access to electric power

Electric Power for Everyone

Highlights and Summary

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Significant Opportunity with High Value Patents Filed and Pending

- **Filed multiple patent** applications to protect intellectual property and start development of a patent portfolio
- **Won two competitive** Phase I and Phase II contracts from the **Air Force** and one from **NASA** to develop quantum structured thin film solar cells
- **NYSERDA provided critical support** to further develop high-efficiency flexible solar cells
- **Awarded** a new product development program from NYSERDA to explore innovative light trapping techniques
- Established a **Technical Advisory Board** and appointed three world-renowned experts in nanotechnology and photovoltaic solar power to the advisory board
- **Leveraging $300+ million DoE SunShot** and public/private investment to accelerate solar cell product/process development at the **Albany Nanotech Center** in Albany, NY
- Government contracts funded **solar cell technology demonstrations**

Selected Recent Announcements

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- Magnolia Solar, in collaboration with the SUNY NanoCollege and U.S. Photovoltaic Manufacturing Consortium, demonstrates high-performance flexible CIGS solar cell
- Magnolia Solar Discusses Advanced Nano-Enhanced Solar Cell Designs
- Magnolia Solar Further Progresses Antireflective Coatings Closer to Commercial Viability in Solar Power Market
- Magnolia Solar Awarded $750,000 Phase II STTR Program by the United States Air Force
- Magnolia Solar Takes Major Step Toward Commercial Viability of High Performance Nanostructured Antireflection Coating for Solar Cell Applications

(Details at www.magnoliasolar.com)