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Solar Power still doesn't work . . .

without the benefit of substantial government subsidies

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There are two ways to make solar energy cost-competitive:

- Increase the efficiency
- Cut the cost

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Natcore has technologies that promise to do both.

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Market Bigger than Companies or Governments

- 1960s - Exchange Controls
- 1970s - Hunt Brothers / Silver Market
- 1980s - United States / Interest Rate Control

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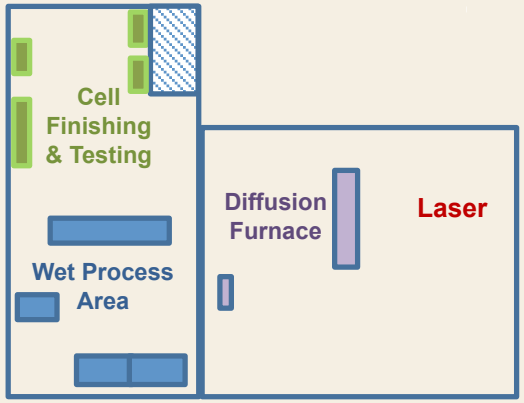
Intellectual Property

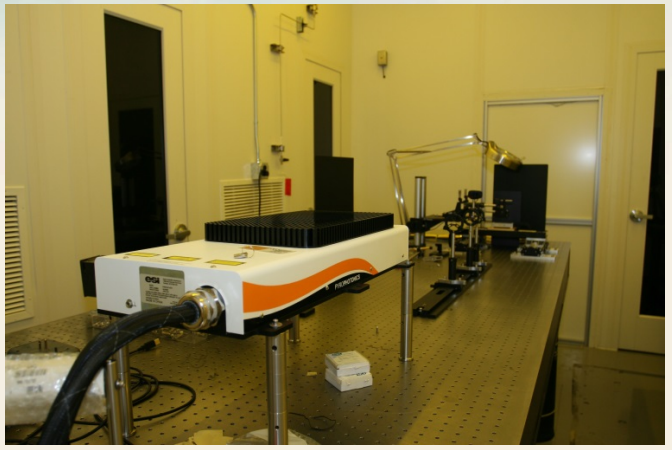
Currently Natcore owns and controls:

- 23 granted patents
- 42 pending patents

Natcore Laboratory - Rochester

- 19,000 ft^2 facility / 8,000 ft^2 of Class 10,000 clean room
- Full solar cell process (bare silicon wafer to working cells)





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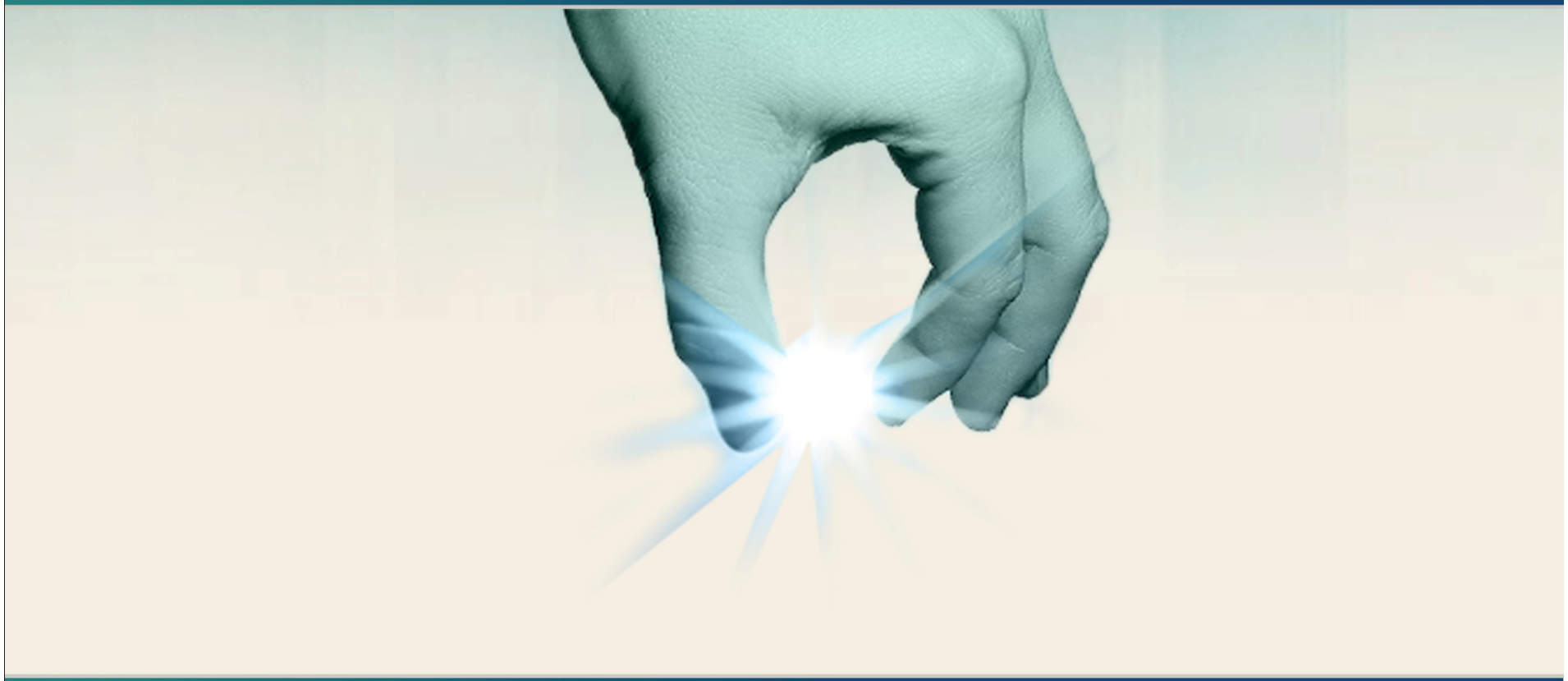

Technology Updates

Scientific Brain Trust Meeting

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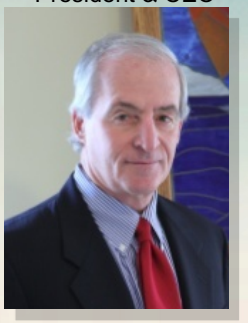
ROUTINE SCIENTIFIC UPDATE MEETINGS

Chuck Provini
President & CEO



Dr. David H. Levy
Director of Research & Technology

Dr. Dennis J. Flood
Chief Technology Officer &
Co-Founder of Natcore

Professor Andrew R. Barron
Co-Founder of Natcore
Chief Science Advisor

Brien F. Lundin
Chairman &
Co-Founder
of Natcore

Scientific Update Meetings

John Calhoun
Director &
Co-Founder of Natcore

Dr. Som N. Dahal
Senior Research Scientist

Dr. Daniele Margadonna
Science Advisor

Dr. Gavin Conibeer
Science Advisor

Dr. David E. Carlson
Science Advisor

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Natcore's Applications Nearest To Commercialization

- Black Silicon
- Laser-Processed Back Contact Solar Cells
- Quantum-Dot Solar Cells

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Natcore's Applications

- Black Silicon: *Significant Cost Reduction*
- Laser-Processed Back Contact Cells
- Quantum-Dot Solar Cells

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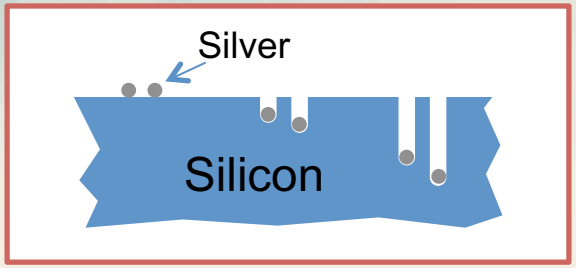
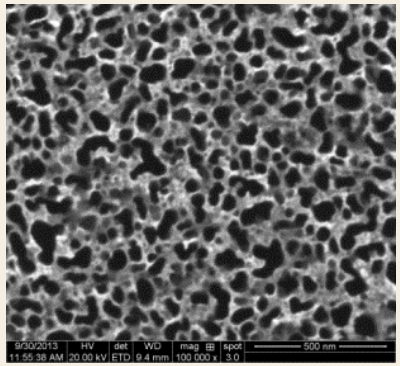
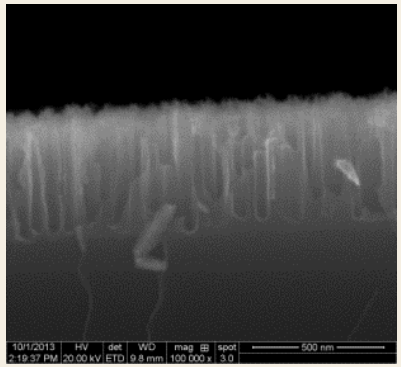
Black Silicon

- Reflection
  - Silicon is very reflective → wastes light
  - Industry currently uses a costly process to reduce reflection
    - Texturing of the surface (chemical waste) plus…
    - PECVD silicon nitride (vacuum process, dangerous chemicals)
- Black Silicon advantages:
  - Simple chemical treatment → Low cost
  - Silver nanoparticles drill holes into the silicon surface
  - Reflectance below 1% achievable
  - Process times in minutes
- Near-Term Objectives
  - Refine black silicon process (and demonstrate)
  - Establish cost advantage

Silver nanoparticles creating Black Silicon







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Simplification of solar cell manufacturing process

Standard Process

Damage etch + Texture → Emitter Diffusion → PSG Remove → Anti-Reflection → Contact & Fire




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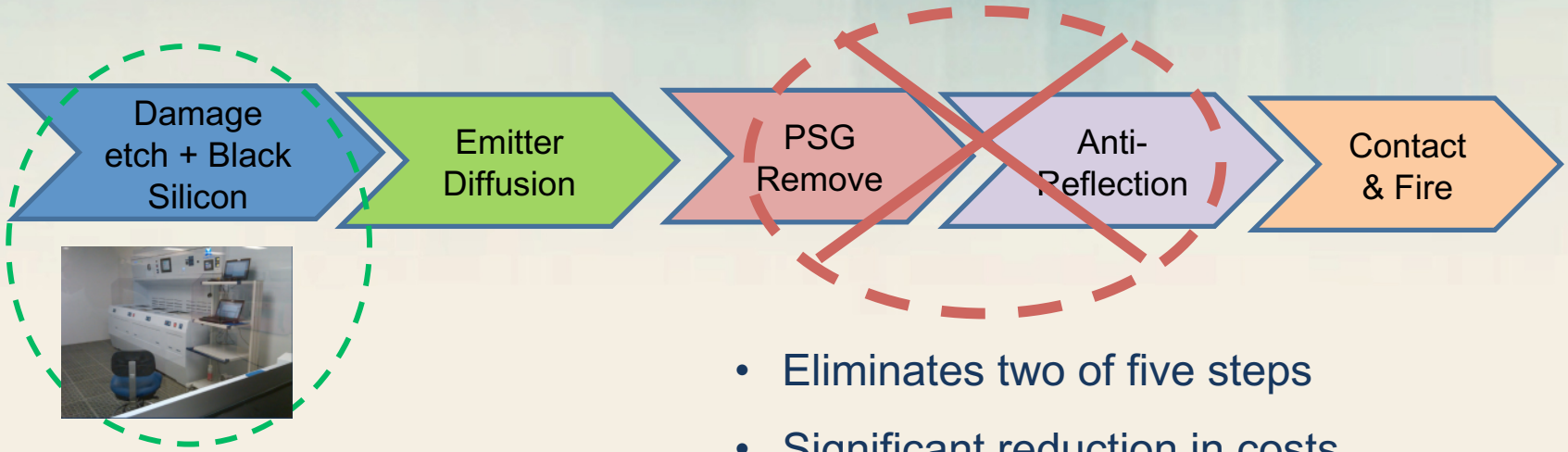
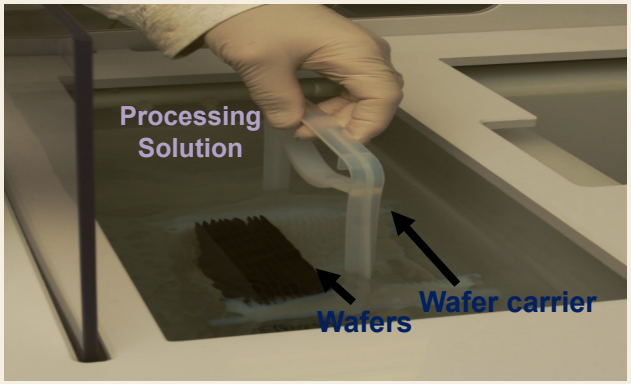
Black Silicon Process



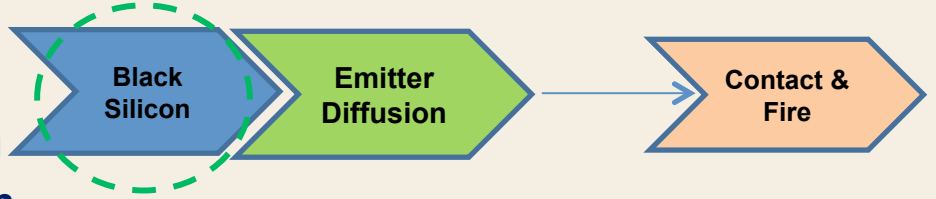
- Eliminates two of five steps
- Significant reduction in costs
- Eliminates need for silane (highly toxic gas) and one of two high-temperature furnaces

Wafers in a processing bath



Wet Processing

Cleaning
Etching
Conditioning
Black Silicon



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- Black Silicon: Cost Reduction
- Laser-Processed Back Contact Cells
- Quantum-Dot Solar Cells

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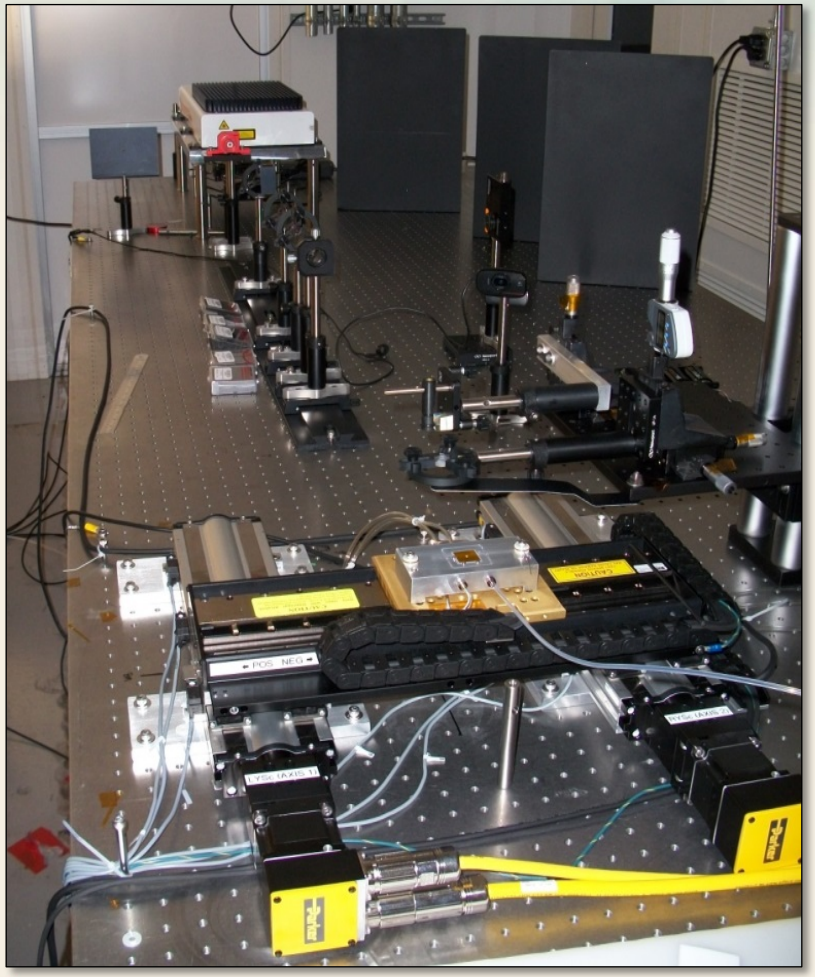
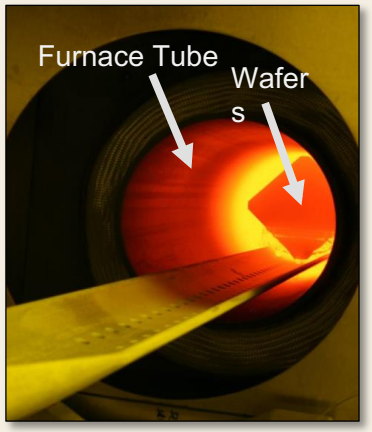
Natcore Laser System

Laser backside contacts: A powerful approach that will dramatically reduce costs and improve power output

- Emits pulses of very intense light
- Each pulse melts a microscopic portion of silicon
  - A very fast doping process!
- Custom system – very versatile



The Laser Eliminates this High Temperature Furnace



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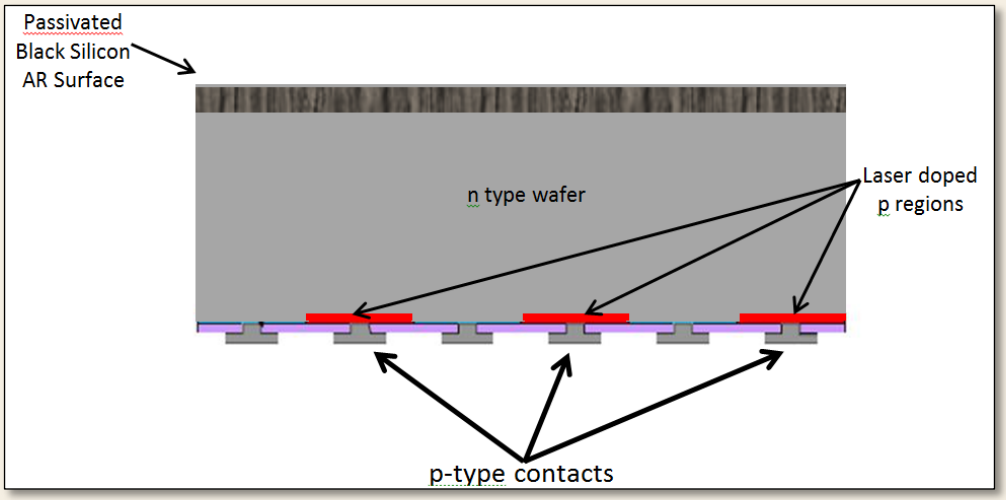
Laser-Processed Back-Side Contact Solar Cell

- Natcore's laser processing technology will allow solar cell processing to take place completely at low temperatures.
- It will increase power output by over 20% (projected to increase efficiencies to 21% or more).
- It will cut the cost of producing this high-efficiency cells to approximately the same cost as common, lower-efficiency commercial solar cells.
- In a market where solar cell manufacturers are fighting tooth-and-nail for advantages of just 1% in costs or efficiencies, Natcore's technology will be the game changer they must adopt.



Schematic of n-type all-back-contact solar cell with passivated black silicon top surface antireflection control.

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HIT-Structure Solar Cells by Laser Processing

- Natcore's laser approach can work on several different solar cell technologies
  - **–What is the right platform?**
- Fact: Efficiency is more than ever the key driver
- "HIT"-structure cells:
  - "Heterojunction with Intrinsic Thin layer"
  - Viewed as the future of ultra-high-efficiency solar cells
  - Uses thin amorphous silicon layers to passivate the cell
- Holds the current world record efficiency: 25.6%
  - This is a proven back-contact structure
  - But…it requires extensive, expensive processing steps

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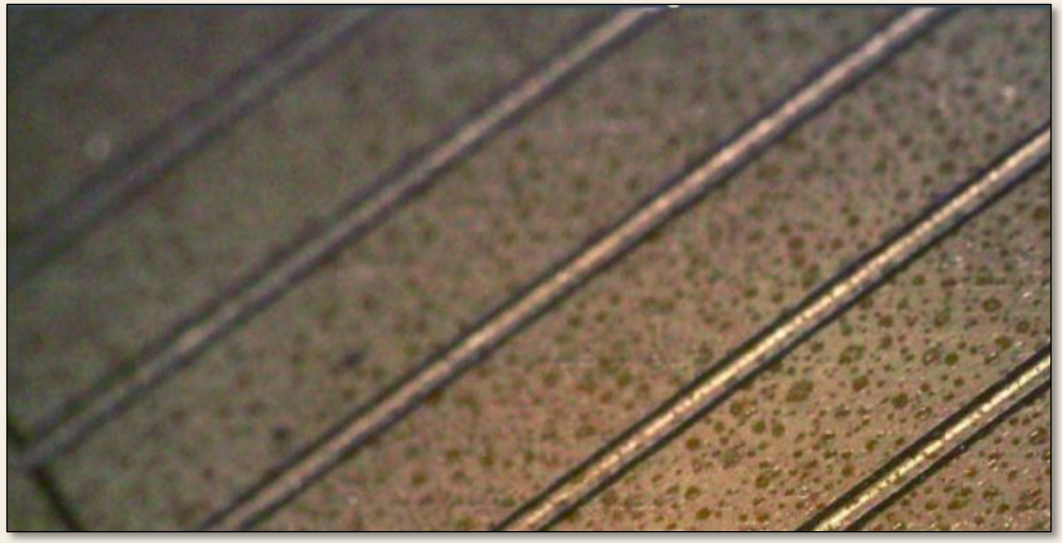
HIT-Structure Solar Cells by Laser Processing

- Natcore recently began work applying our laser process to HIT-structure cells
- Laser processing streamlines fabrication:
  - Costs expected to be near those of current conventional cells
  - Pathway for even further reductions in cost
  - While allowing efficiencies well over 21% (targeting 25%+ efficiencies)
- Initial results show it is a good approach



Back-side contacts on a Natcore HIT cell

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Summary

- HIT-structure cells hold the record – 25.6% efficiency.
- Proven cell structure — but high costs make them currently impractical.
- Natcore's laser-processing reduces the cost to make those cells — making them the same or cheaper than today's common commercial cells.

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Recent Breakthroughs with Lasers:

- **Natcore Makes First Laser-Processed, All-Low-Temperature Solar Cell** *(October 20, 2014)*
- **Natcore Makes First Back-Contact Solar Cell Using Laser Processing** *(January 27, 2015)*
- **Natcore Technology Makes Laser-Processed HIT-Structure Solar Cell** *(March 16, 2015)*

Natcore's laser system: The infrared laser beam appears as a white spot to the camera.

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Near-Term Goals:

- Achieve efficiencies in low teens for laser-processed back-contact solar cell
  - Natcore's advisors estimate this will show sufficient maturity of the technology for industry to seek collaboration with Natcore
- Establish agreement with equipment manufacturer for collaboration to advance laser-processing technology
- Combine back contact, laser-processing with black silicon application
- Apply laser-processing technology to ultra-high-efficiency "HIT" structure solar cells
  - HIT cells have achieved world-record efficiencies of 25.6%, but use a cumbersome manufacturing process which Natcore's process could greatly simplify

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- Black Silicon: Cost Reduction
- Laser-Processed Back Contact Cells
- Quantum-Dot Solar Cells

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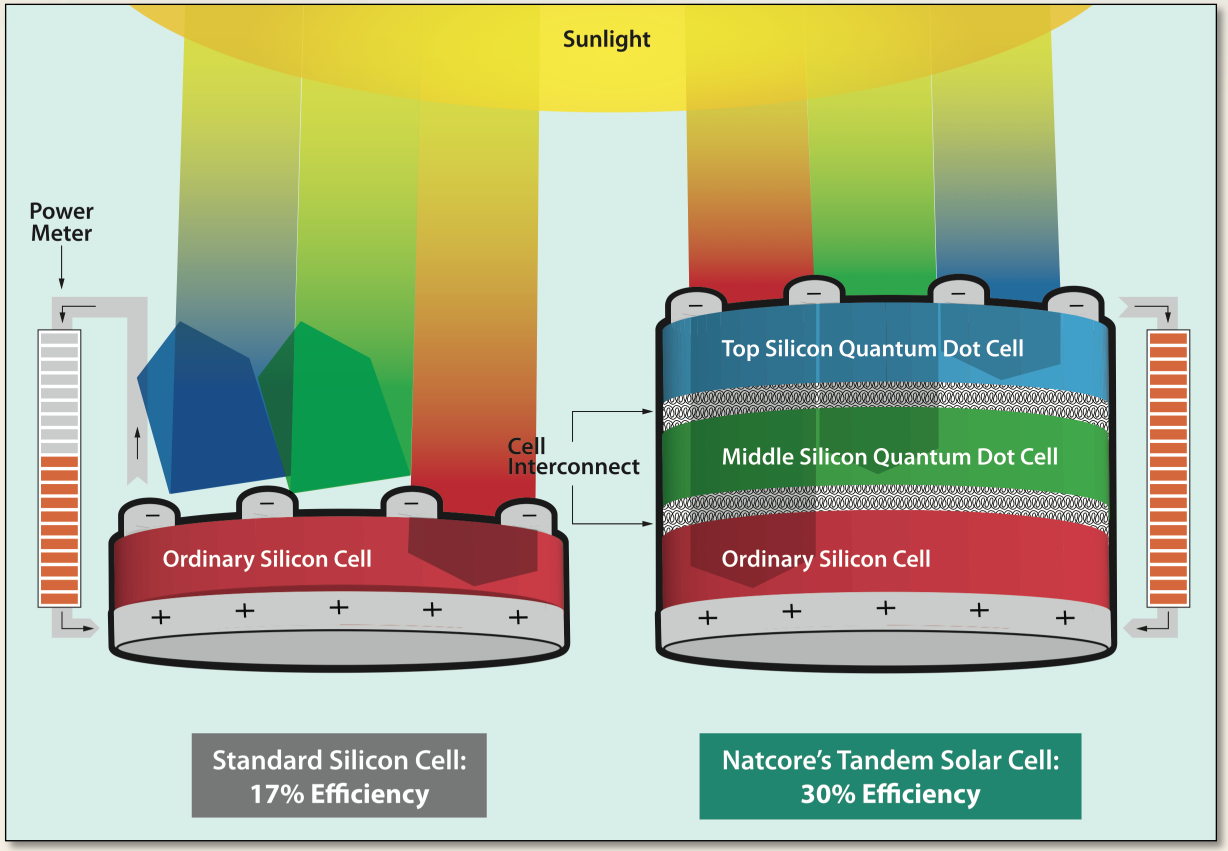
Why Quantum-Dot Solar Cells?

Using silicon and/or germanium quantum dots, "tandem" or "multi-junction" solar cells could achieve efficiencies of up to 35%, or nearly double the power output of today's commercial solar cells.



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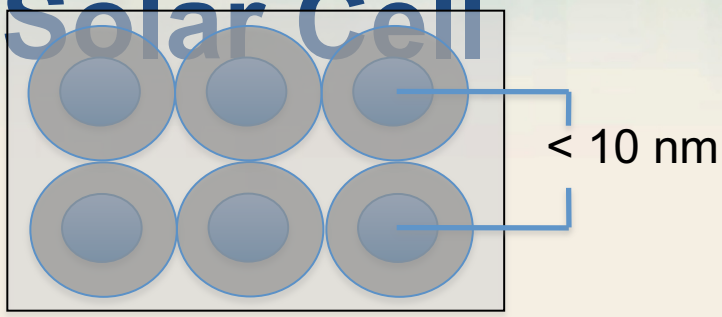
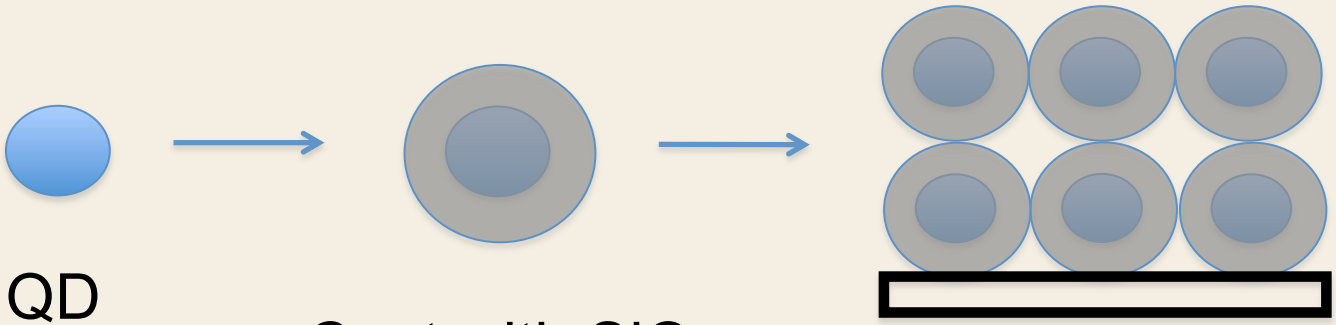
Natcore's Approach To A QD Solar Cell





QD
< 4 nm

Coat with SiO_2 < 5 nm

3D array on quartz

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Recent Breakthrough with Quantum Dot Solar Cells:

- Natcore Makes First Germanium Quantum Dot-Based Solar Cell *(February 17, 2015)*

Next Goals:

- Characterize coated quantum dots as "n-type"
- Create true tandem quantum-dot solar cell
- Create ultra-high-efficiency (approx. 34%), multi-junction solar cells that will change global energy paradigm

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Anticipated Sources of Revenue

- License agreements
- Royalties
- Machine sales
- Chemical sales

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Media

ABC Television, "World News with Diane Sawyer"

Fox News Network, "Fox and Friends"

ABC News.com

DesignNews

Montalbano, Elizabeth. **"Artificial Retina Is Solar Powered"** (9/26/13)

PVTECH

"Natcore Technology appoints prominent Italian solar scientist to head new advisory board" (1/18/13)

pv magazine

Miller, Amanda H. "Natcore developing selective emitter for solar cells" (4/14/13)

Solar Power World

Bushong, Steven. **"NREL Expands Natcore License To Develop Black Silicon Cells"** (8/2/12)

White House Invitation

The New York Times International Herald Tribune

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Media

- ABC Television, “World News with Diane Sawyer”
- Fox News Network, “Fox and Friends”
- ABC News.com

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Media

The New York Times
International Herald Tribune

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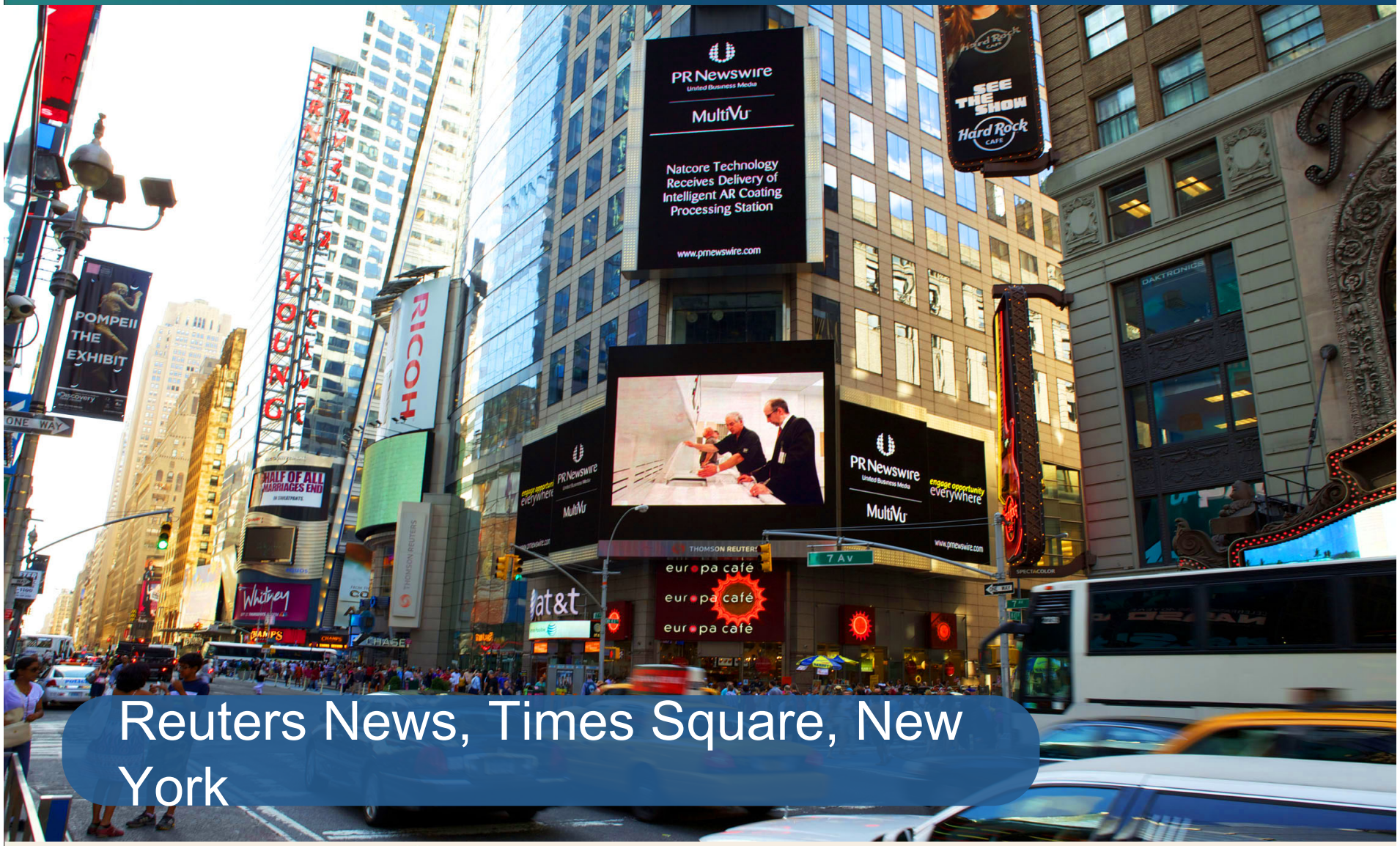
Media



Reuters News, Times Square, New York

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Trade Journals

Montalbano, Elizabeth. **"Artificial Retina Is Solar Powered"** (9/26/13)

"Natcore Technology appoints prominent Italian solar scientist to head new advisory board" (1/18/13)

Miller, Amanda H. **"Natcore developing selective emitter for solar cells"** (4/14/13)

Bushong, Steven. **"NREL Expands Natcore License To Develop "Black Silicon" Cells"** (8/2/12)

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Best-of-Breed

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Best-of-Breed

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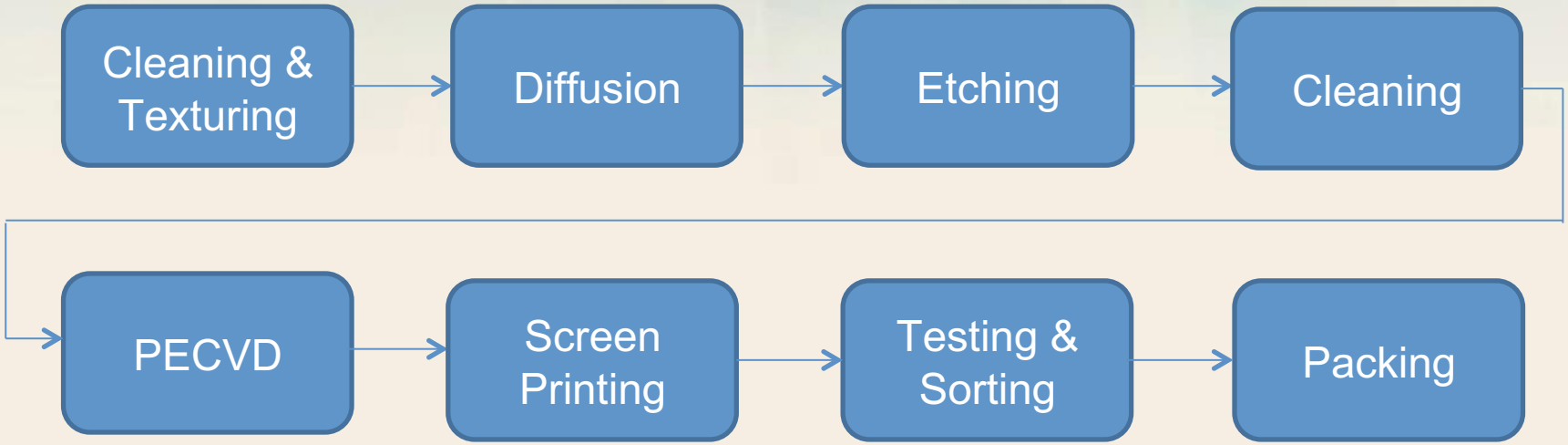
Solar Cell Production Line



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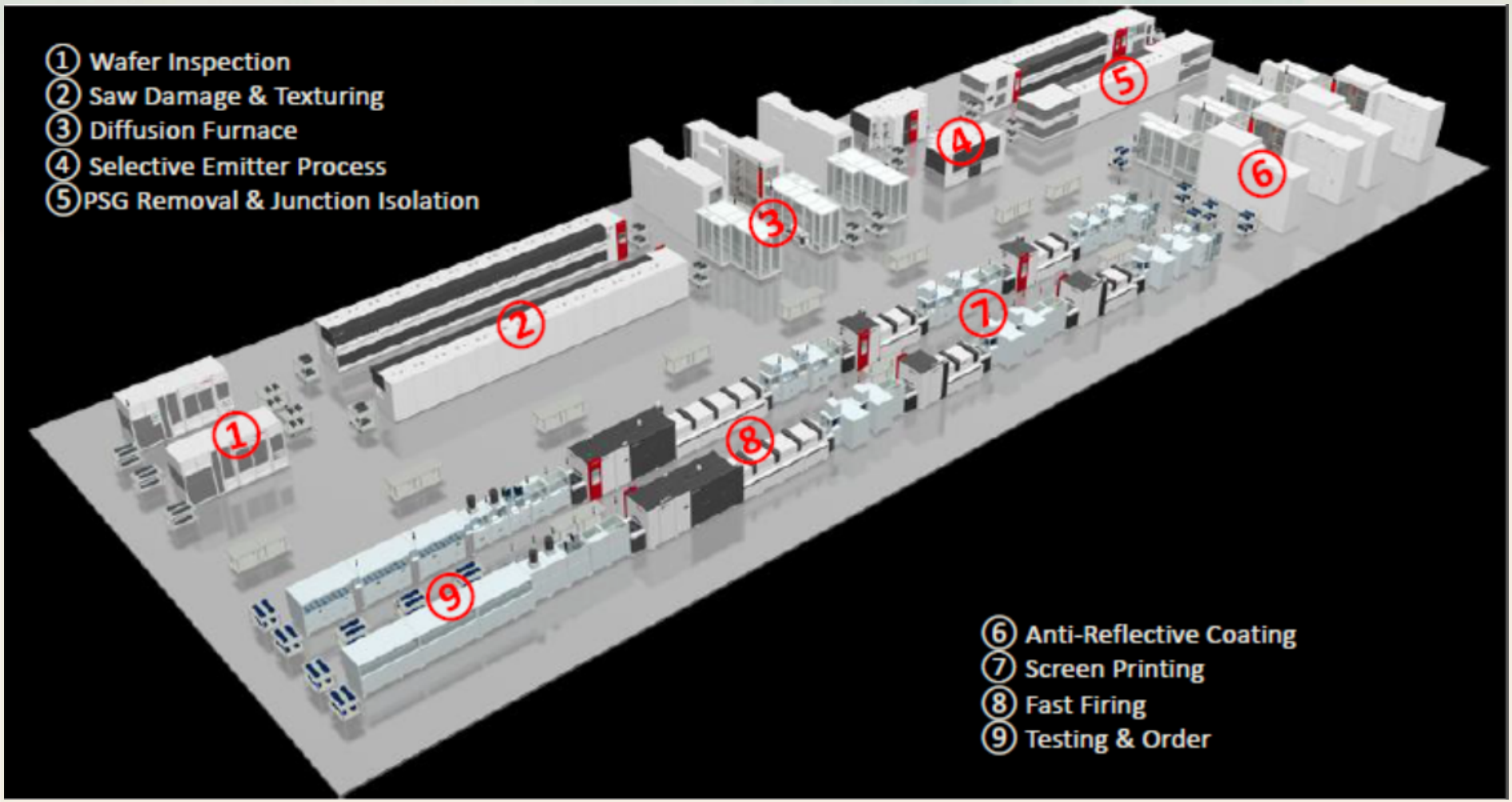
Best-of-Breed



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Introduction to Solar Cell Line

Cleaning & Texturing Machine

Main parameter:

Throughput: 2,500pcs/hr (polysilicon)

4,000/hr(monosilicon)

Main features:

(i) Unique mono-poly silicon compatible design, quickly meets customer's requirements;

(ii) Separated acid and alkaline, avoiding second pollution;

(iii) Fully-automatic control, avoiding misoperation.

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Introduction to Solar Cell Line

Four-Stack Diffusion/ Oxydation

Main parameter:

(i) Load: 400pcs/stack

(ii) Temperature stability of a single point

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Introduction to Solar Cell Line

Automated Four-Stack PECVD

Main parameter:

(i) Throughput: 125 x 125 x 252pcs/ stack; 156 x 156 x 216pcs/stack

(ii)Film evenness: one piece

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Introduction to Solar Cell Line

PSG Removal Machine

Graphite Boating Cleaning Machine

Quartz Tube Cleaning Machine

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Introduction to Solar Cell Line

Automated Screen Printer

Main parameter:

(i) Produce specification: 125 mm, 156 mm square piece

(ii) Produce speed: 800 - 1,000pcs/ hr

Main features:

(i) Automatic loading;

(ii) Precise silicon piece location system, improving yield.

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Introduction to Solar Cell Line

Sintering Furnace

Main parameter:

(i) Meshbelt width: 250mm

(ii) Working temperature: (Max) 950 ℃

(iii) Heating zone section: 9 sections

(iv) Heating mode: IR lamps

Main features:

(i) IR beam wave heating source;

(ii) Structurally isolated heating zone

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Introduction to Solar Cell Line

Automated Testing & Sorting System

Main parameter:

(i) Efficiency: no less than 1,200pcs/ hr

(ii) Basic sorting grades: 32 grades

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Projects Bidding:

Saudi Arabia

South Africa

Australia

Philippines (2)

Costa Rica

India

Poland

Dominican Republic

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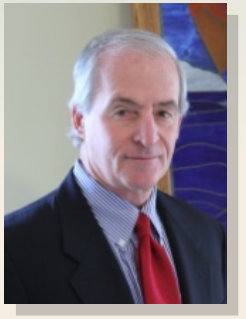
Our management team features a unique blend of business and scientific experience and expertise.

Management

- **Charles “Chuck” Provini, President and CEO**
  - President of Ladenburg Thalmann Asset Management
  - Director of Ladenburg Thalmann, Inc.
  - President of Rodman & Renshaw’s Advisory Services
  - President of LaSalle Street Corporation



- **Brien F. Lundin, Chairman and Director**
  - Co-Founder of Natcore
  - President and CEO of Jefferson Financial, Inc.
  - New Orleans Investment Conference

- **John Calhoun, Director**
  - Co-Founder of Natcore
  - Managing Director of Fort Hill Resources, LLC
  - Director and organizer of FNBC Bank
  - Managing Director of Shadows Bend Court and Oak Grove Senior Living
  - Managing Director of LEAP Entertainment

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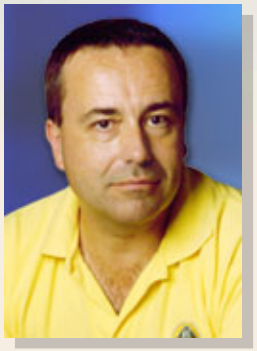
Science

- **Professor Andrew R. Barron**



  - Co-Founder & Chief Science Advisor
  - The Charles W Duncan, Jr. – Welch Endowed Chair of Chemistry
  - Professor of Materials Science at Rice University
  - Published author of over 350 peer-reviewed scientific papers
  - Faculty member for the Smalley Institute for Nanotechnology
  - Co-Founder Gallia, Inc.

- **Dr. Dennis J. Flood**

  - Chief Technology Officer & Co-Founder of Natcore
  - Chief of the Photovoltaic and Space Environments Branch at the NASA Glenn Research Center
  - Chair of the Institute of Electrical and Electronics Engineers (IEEE) Photovoltaic Devices Technical Committee
  - Serves on the International Advisory Committees of the European, the U.S. and Japan/Asia
  - Serves on the organizing committees for World Photovoltaic Conference

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Science

- **Dr. David H. Levy**

  - Director of Research & Technology
  - Ph.D. in Chemical Engineering, with minor in Electrical Engineering, from MIT
  - BSE in Chemical Engineering from the University of Pennsylvania.
  - Invented the atmospheric Spatial Atomic Layer Deposition process (SALD), which is being intensively studied for many applications including the passivation of solar cells
  - 20 years of industrial R&D experience with vapor/vacuum coating, nanoparticle synthesis and dispersions, liquid coating, circuits and electronic devices at Eastman Kodak Company
  - Holds 64 patents
  - Invited presenter at meetings of the Materials Research Society and the American Vacuum Society

Science

- **Dr. Som N. Dahal**

  - Senior Research Scientist
  - Ph.D. in Electrical Engineering from Arizona State University
  - Masters in Physics from Tribhuvan University, Nepal
  - Published more than 15 papers on emerging PV technologies
  - Worked on Photovoltaic R&D start ups past four years
  - Presented on IEEE Photovoltaic Specialists conferences and Material Research Society meetings
  - Was part of the team (Solar Power Lab at ASU) that established one of the best R&D facilities for photovoltaic research in the nation

Advisor

- **Dr. Daniele Margadonna**

  - Doctorate in Radiochemistry, University of Rome, Laurea degree in Physical Chemistry
  - National Secretary of the Italian Crystal Growth Association
  - Managing Director of E.T.AE, sas, a consulting company focused on photovoltaic technologies for companies in Italy, Sweden, Norway, Africa and India
  - Consultancy specializing in silicon wafer production, PV module production, silicon feedstock, solar cell production, manufacturing solar cells and PV modules, thin wafer production
  - MXGroup SpA CTO, focusing on crystalline silicon technology
  - Received Philip Morris Prize for Scientific and Technological Innovation
  - Author and co-author 40+ scientific publications
  - Holds 6 patents in the PV sector

Advisor

- **Dr. David E. Carlson**

  - Ph.D. in Physics from Rutgers University, B.S. degree in Physics from Rensselaer Polytechnic Institute
  - U.S.Army Nuclear Effects Laboratory, R&D Physicist
  - RCA Laboratories, Photovoltaic Device Research, Group Head
  - Invented the amorphous silicon solar cell
  - Solorex Corporation Vice President, Chief Technologist, General Manager, Deputy General Manager and Director of Research Thin Film Division
  - BP Solar Chief Scientist for Future Technology programs and Intellectual Property System
  - Received the Morris N. Liebmann Award (IEEE) for crucial contributions to the use of amorphous silicon in low-cost, high performance photovoltaic solar cells
  - Awarded the Walton Clark Medal by the Franklin Institute for innovations in the use of hydrogenated amorphous silicon for solar energy conversion
  - Received the William R. Cherry Award for advancement of photovoltaic science and technology
  - Received the Karl W. Boer Medal from the International Solar Energy Society and the University of Delaware for outstanding contributions to the field of solar energy
  - IEEE Fellow and a member of American Physical Society, the American Vacuum Society and Sigma Xi
  - Holds 26 patents, 8 pending, published 150+ technical papers, listed in Who's Who in America

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Advisor

- **Dr. Gavin Conibeer**

  - Ph.D. in Zinc Diffusion in Gallium Antimonide for tandem photovoltaic cells, CASE award, Engineering Materials, University of Southampton, UK.
  - MSc in Polymer Science and Processing Technology, London School of Polymer Technology, UK.
  - Professor in the School of Photovoltaics and Renewable Energy Engineering at New South Wales in Sydney, Australia.
  - Deputy Director of the University's Photovoltaics Centre of Excellence.
  - Postdoctoral Fellow, University of Oxford, Dept. of Condensed Matter Physics
  - Research Fellow (Project Leader), UNSW Centre for Third Generation Photovoltaics
  - Co-chairs many Photovoltaics Specialists, Advanced Photovoltaics and Nanostructured Conferences.
  - Managing Editor, Progress in Photovoltaics, IF 7.1
  - Internationally acclaimed for his research on third generation solar cells, including quantum dot solar cells and tandem quantum dot solar cells.
  - 50 journal publications on silicon quantum dot solar cells (110 publications overall).
  - Holds 2 patents, 1 pending.

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If you own the technology,
you will own the industry

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Natcore Owns the Technology

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Share Structure

(updated 2/28/2015)

Shares Outstanding:	49,213,564
Warrants Outstanding:	12,847,286
Options Outstanding:	4,182,000
Shares Outstanding Fully Diluted:	66,242,850

CONTACT US

www.natcoresolar.com

info@natcoresolar.com

877-700-NATCORE (877-700-6282)
or 732-576-8800

NATCORE TRADING SYMBOLS

TSX Venture Exchange :	***NXT***
OTC/Pink Sheets :	***NTCXF***
Frankfurt Stock Exchange :	***8NT***

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Summary

- HIT-structure cells hold the record – 25.6% efficiency.
- Proven cell structure — but high costs make them currently impractical.
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