

PHOTON's 5<sup>th</sup>

# Photovoltaic Technology Show 2010

February 2 – 4, 2010, San Francisco

USA

**Photon**  
EXPO

Sponsored by



PHOTON's 2<sup>nd</sup>  
**PV Thin Film Conference**

February 2, 2010, San Francisco



PHOTON's 2<sup>nd</sup>  
**PV Start-up Conference**

February 3, 2010, San Francisco



PHOTON's 3<sup>rd</sup>  
**Solar Electric Utility Conference**

February 4, 2010, San Francisco

[www.photon-expo.com](http://www.photon-expo.com)

## PROGRAM

9:00 - 9:05

*CONFERENCE OPENING*

*Chairperson:*

- **Michael Schmela**,  
PHOTON International, Germany

Invited speakers

9:05 - 9:30

*KEYNOTE*

- **Zhengrong Shi**, Suntech Power, China  
»Good reasons for the world-leading c-Si  
module maker's thin-film investment«

9:30 - 10:00

*COSTS, PRICES & INVESTMENTS –  
SURVIVING THE HARD TIMES*

- **Ryan Boas**, PHOTON Consulting, USA  
»Cost & price outlook«
- **Steve O'Rourke**, Deutsche Bank, USA  
»Levelized cost of electricity –  
thin film vs. c-Si«

10:00 - 10:45

*PERFORMANCE: TALES FROM LAB  
AND FIELD*

- **Christian Hinsch**, Juwi, Germany  
»Performance of thin-film power plants«
- **Willi Vaaßen**, TÜV, USA  
»Testing TF modules for certification«

10:45 - 11:15

Coffee-Break

11:15 - 13:00

*TECHNOLOGY: CHOOSING THE RIGHT  
EQUIPMENT TO SCALE BIG AT LOW COST*

- **Chris Eberspacher**, Applied Materials,  
USA
- **Hans Ebinger**, Oerlikon, Switzerland
- **Ruurd Boomsma**, Energosolar, Hungary
- **Michael Liehr**, Leybold Optics, Germany

13:00 - 14:00

Lunch

14:00 - 15:30

*THIN-FILM COMPANIES HEADING  
FOR TERAWATT-HOUR MODULE  
MANUFACTURING I*

- **Paul Wormser**, Sharp, Japan  
»Micromorph«
- **Sicco Westra**, SunFilm, Germany  
»Micromorph«
- **Yurika Hanaki**, Sanyo Eneos, Japan  
»Micromorph«
- **Rick Wan**, ENN, China  
»A-Si/micromorph«
- **Liyong Yang**, Chint Solar (Astronergy), China  
»A-Si/micromorph«
- **Howard Chu**, Trony, China  
»A-Si«

15:30 - 15:50

Coffee-Break

15:50 - 17:30

*THIN-FILM COMPANIES HEADING  
FOR TERAWATT-HOUR MODULE  
MANUFACTURING II*

- **Lynn Sha**, QS, China  
»A-Si«
- **DuPont Apollo**, USA  
»A-Si«
- **Satoru Kuriyagawa**, Showa Shell, Japan  
»CIGS«
- **Florian Holzapfel**, Q-Cells, Germany  
»CIGS & CdTe«
- **Chris Gronet**, Solyndra, USA  
»CIGS«
- **Tom Tiller**, Abound, USA  
»CdTe«

17:30 - 18:30

*EXECUTIVE PANEL:*

»Thin film's role in the big solar  
power generation game«

## IMPRESSIONS 2008



Ronald Frommann / photon-pictures.com (3)

▲ Who's the next First Solar?: Several module manufacturers, including Kaneka, Nanosolar, Q-Cells, United Solar, Inventux and Solyndra, presented their thin-film technologies at PHOTON's 1<sup>st</sup> PV Thin Film Conference.



▲► Hard facts: In his keynote speech, Lars Podlowski, CTO of Solon AG, challenged the thin-film community with his technical cost comparison in favor of crystalline products.

## PROGRAM

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*CONFERENCE OPENING*

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- **Michael Schmela**,  
PHOTON International, Germany

**Invited speakers**

9:05 - 9:30

*KEYNOTE*

9:30 - 10:15

*FUNDAMENTALS*

- **Joe Muscat**, Ernst & Young, USA  
»Overview of VC flow into the PV sector«
- **Martha Symko-Davies**, NREL, USA  
»Start-up funding in the US«
- **N.N.**, American Patent Office, USA  
»Patent distribution in PV technologies«

10:15 - 10:45

*VC*

- **Guido Agostinelli**, Good Energies,  
Switzerland
- **Bill Joy**, David Wells Kleiner Perkins, USA

10:45 - 11:00

*PANEL – FUNDAMENTALS & VC*

11:00 - 11:30

Coffee-Break

11:30 - 12:15

*C-SI WAFERS, CELL AND MODULES*

- **Jennifer Woolwich**, PV Recycling, USA  
»Solar module recycling«
- **Mehrdad Moslehi**, Solexel, USA  
»Lift-off cell from Si wafer substrates«
- **David O'Connor**, Spectrawatt, USA  
»From traditional c-Si to up-converter cells«

12:15 - 12:45

*CONCENTRATING PHOTOVOLTAICS (CPV)*

- **David Schultz**, Banyan Energy, USA  
»Low CPV«
- **Bob Conner**, Semprius, USA  
»High CPV«

12:45 - 13:00

*PANEL – C-SI & CPV*

13:00 - 14:00

Lunch

14:00 - 14:45

*THIN FILMS*

- **Michael Bartolomeusz**, AQT, USA  
»AQTek, USA«
- **John Palmer**, Vanguard, USA  
»CdS modules«
- **Alan Majid**, Nliten, USA  
»Substrates for TF«

14:45 - 15:30

*BALANCE OF SYSTEMS (BOS)*

- **Ravi Naiknaware Azuray**, USA  
»DC-DC«
- **Paul Engle Enecsys**, UK  
»Microinverters«
- **Ron van Dell**, SolarBridge, USA  
»Microinverters«

15:30 - 15:45

*PANEL – THIN FILMS & BOS*

15:45 - 16:15

Coffee-Break

16:15 - 17:30

*THIRD GENERATION TECHNOLOGIES*

- **Mike Clary**, Solasta, USA  
»A-Si/carbon nanotubes on glass substrates«
- **Tony Defries**, Matter, USA  
»Plasmonics-based solar cells«
- **Lawrence A. Kaufman**, Lightwave, USA  
»Plasmonics-based solar cells«
- **Andreas Rückemann**, Heliatek, Germany  
»Organic cells«
- **David Bushnell**, QuantaSol, UK  
»Quantum dot cells«

17:30 - 18:30

*EXECUTIVE PANEL:*

*»Mastering start-up challenges in times of cheap silicon«*

- **Sunil Gupta**, Morgan Stanley, Singapore
- **Christopher Moran**, Applied Ventures, USA
- **Florian Holzapfel**, Q-Cells, Germany

PHOTON's 2<sup>nd</sup>  
**PV Start-up Conference**

February 3, 2010, San Francisco

## IMPRESSIONS 2008



Ronald Frommann / photon-pictures.com (3)



▲ Silicon Valley, US-based SiGen came out of stealth mode at our conference, presenting its revolutionary technology to cut kerfless wafers.

▲ Israel-based Xjet introduced its high speed ink-jet technology to print electrical contacts on solar cells at our last conference. The first commercial machine was shipped in late 2009.

▶ Trendy newcomer: SolarEdge introduced its power optimizer technology at PHOTON's 2008 event.

## PHOTON's 5<sup>th</sup> Photovoltaic Technology Show 2010 USA

February 2 - 4, 2010, San Francisco

### TRADE FAIR

I would like to sign up for  
**PHOTON's 5<sup>th</sup> Photovoltaic Technology Show 2010 USA**  
and purchase one ticket for \$29.

We would like to exhibit at the fair from February 2 - 4, 2010.  
Please send us a quote for ..... ft<sup>2</sup> raw space. Raw space can  
be obtained for \$3,060 per 100 ft<sup>2</sup> (plus cost for package booth  
if requested). Space used to display machines will receive a  
50-percent discount.

### CONFERENCES

I would like to sign up for  
**PHOTON's 2<sup>nd</sup> PV Thin Film Conference.** (February 2, 2010).  
Tickets cost \$840 (\$740 for PHOTON International subscribers).

I would like to sign up for  
**PHOTON's 2<sup>nd</sup> PV Start-up Conference.** (February 3, 2010).  
Tickets cost \$840 (\$740 for PHOTON International subscribers).

I would like to sign up for  
**PHOTON's 3<sup>rd</sup> Solar Electric Utility Conference.** (February 4, 2010).  
Tickets cost \$840 (\$740 for PHOTON International subscribers).

The total price to attend all three conferences is only \$2,270  
(or \$1,970 for PHOTON International subscribers) instead of  
\$2,520 (excl. conference dinner).

Conference participants can visit the exhibition free of charge.

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## PROGRAM

9:00 - 9:05

### *CONFERENCE OPENING*

#### *Chairperson:s*

- **Garrett Hering**,  
PHOTON International, Germany
- **Sanjay Shrestha**, Lazard Capital, USA
- **Christy Herig**, Solar Electric Power  
Association (SEPA), USA

#### *Invited speakers*

9:05 - 9:30

### *KEYNOTE*

9:30 - 10:30

### *FUNDAMENTALS*

- **Michael Rogol**,  
PHOTON Consulting, USA  
»Solar growing quickly: Implications  
for electric power supply«
- **Peter Lorenz**, Quanta Renewable  
Energy Services, USA
- **Ryan Pletka**, Black & Veatch, USA

10:30 - 11:00

Coffee-Break

11:00 - 12:30

### *UTILITY ACTIVITIES OF PV COMPANIES*

- **N.N.**, First Solar, USA  
»Thin films for low-cost large-scale  
solar power«
- **Steven Chan**, Suntech, China  
»Global utility-scale PV in the US,  
Europe and China«
- **Howard Wenger**, SunPower, USA  
»Highest solar system efficiencies«
- **Reyad Fezzani**, BP Solar, USA  
»Focus on downstream projects«
- **Carlos Domenech**, MEMC, USA  
»From silicon to solar installations«

12:30 - 13:30

Lunch

13:30 - 15:00

### *PV ACTIVITIES OF UTILITIES & PROJECT DEVELOPERS I*

- **Dave Rubin**, PG&E, California, USA
- **Mark Nelson**, SCE, California, USA
- **N.N.**, Xcel Energy, Colorado, USA
- **Eric Silagy**, FPL, Florida, USA
- **Al Matos**, PSE&G, New Jersey, USA

15:00 - 16:45

### *PV ACTIVITIES OF UTILITIES & PROJECT DEVELOPERS II*

- **Mike Webster**, LADWP, California, USA
- **Tom Doyle**, NRG Energy, New Jersey, USA
- **Micheal Allman**, Sempra Generation,  
California, USA
- **Larry Greene**, Acciona, Spain
- **Sheldon Kimber**, Recurrent Energy,  
California, USA

16:45 - 17:00

Coffee-Break

17:00 - 18:30

### *TECHNICAL & ECONOMIC CHALLENGES*

- **Kenneth Westrick**, 3Tier  
»Forecasting solar irradiation«
- **Tsurayuki Okamoto**, NGK, Japan  
»Cost-effective storage for PV systems«
- **Jürgen Krehnke**, SMA America, USA  
»Connecting & monitoring PV power  
plants the right way«
- **Hugh Wynne**, Bernstein Research, USA  
»Financing traditional electric power  
plants vs. solar«
- **Mike Milligan**, NREL, USA  
»Solar in US energy generation«
- **Paul Douglas**, CPUC, USA  
»Regulatory requirements to enable fast  
and sustainable growth of solar«

18:30 - 19:00

### *EXECUTIVE PANEL*

PHOTON's 3<sup>rd</sup>  
**Solar Electric Utility Conference**

February 4, 2010, San Francisco

## IMPRESSIONS 2008



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▶▶ Solar goes utility-scale: Q-Cells was one of several PV companies to provide details about their business strategies for the solar power plant segment at our last conference.

▶ Utility goes solar: California, US-based electricity company Pacific Gas & Electricity Co. (PG&E) is moving toward distribution and utility-scale solar.

▲ The regulator's view: The California Public Utilities Commission (CPUC) is facing massive amounts of solar power being connected to the electric grid in the biggest US solar market.

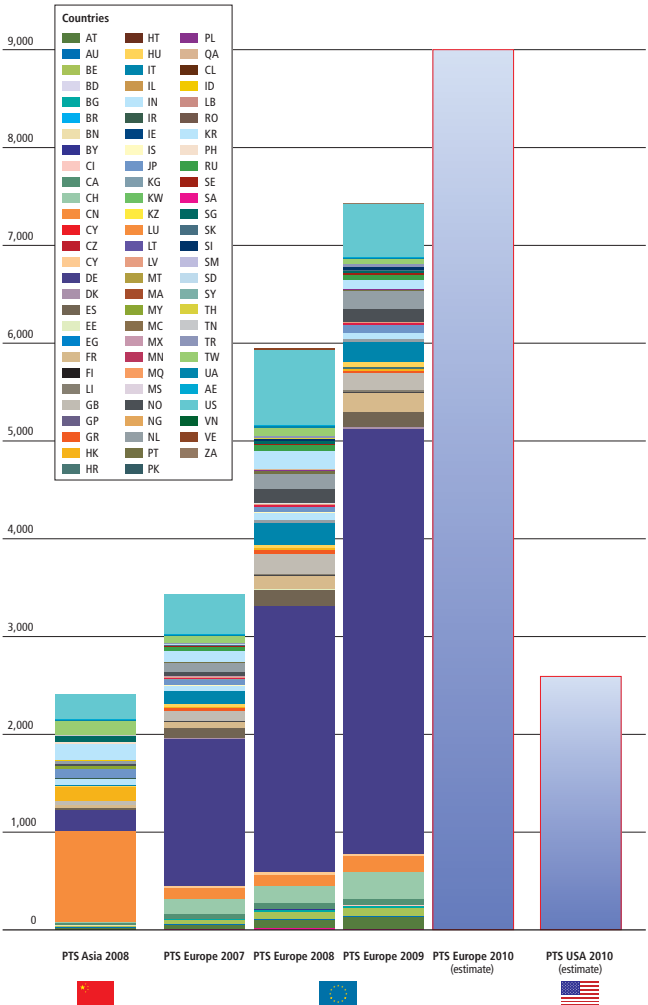
## LIST OF EXHIBITORS

of PHOTON's 5<sup>th</sup> Photovoltaic Technology Show 2010 USA

Last updated: 01/04/2010



**PTS VISITORS PER COUNTRY**



PHOTON's 5<sup>th</sup>

# Photovoltaic Technology Show 2010 USA

February 2 – 4, 2010, San Francisco



The Moscone Center  
Administrative Office 747  
Howard Street, 5<sup>th</sup> Flr.  
San Francisco, CA 94103

## REDUCED PACKAGE PRICE

The total price to attend all three conferences is only \$2,270 (or \$1,970 for PHOTON International subscribers) instead of \$2,520 (incl. conference party). Conference participants can visit the exhibition free of charge.

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PHOTON's 2<sup>nd</sup> PV Start-up Conference • February 3, 2010 (conference party)

PHOTON's 3<sup>rd</sup> Solar Electric Utility Conference • February 4, 2010

Please register at: [www.photon-expo.com](http://www.photon-expo.com)