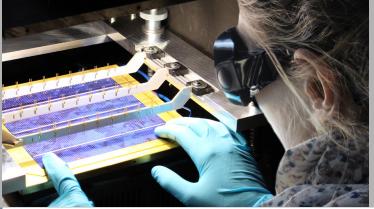


FRAUNHOFER CENTER
FOR SILICON PHOTOVOLTAICS CSP





# 10 YEARS FRAUNHOFER CSP

Along with this year's PV Days workshop event Fraunhofer Center for Silicon Photovoltaics CSP is celebrating its 10<sup>th</sup> anniversary. Since its foundation in March 2007, the institute has been successfully established as one of the most important partners for the photovoltaic industry and introduced know-how from Germany into numerous national and international research and development projects.

We cordially invite you to the festive anniversary celebration on October 25 with guests from research, business and politics, including the Prime Minister of Saxony Anhalt, Dr. Reiner Haseloff. A panel discussion on the topic »300 W & > 30 Years & <30 ct / W: the Future of PV and Energy Systems in Europe« as well as the symbolic groundbreaking ceremony for the construction of the CSP's own PV system will be the highlights of the ceremony.

At a subsequent get-together, we would like to end the event with you in a relaxed atmosphere.

#### **Attendance Fee**

Category	One Day Attendance	Two Day Attendance
Standard Fee	150,- Euro*	250,- Euro*
Student Rate	99,- Euro*	200,- Euro*

<sup>\*19%</sup> VAT included

# Registration

Please register online via: www.pv-days.com/en/registration. Final registration deadline: October 15<sup>th</sup>.

After registration you will receive an invoice by mail.

# **Networking Dinner**

We would like to invite you to dinner and free drinks (except for cocktails and liquors). Doors open from 19:00.

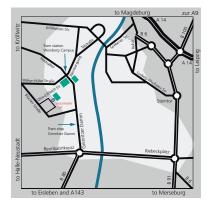
#### Location:

Krug zum grünen Kranze Talstraße 37 06120 Halle (Saale)

#### Contact

contact@pv-days.com





#### Directions

# By Car

(A9, A14) leave A9 at exit »Halle« and A14 at exit »Halle-

Peißen«, follow the signs to »Zentrum« and »Halle-Neustadt/Eisleben (Riebeckplatz)«, leave the street at exit »Gimritzer Damm« and follow the signs to »Magdeburg/Klinikum Kröllwitz Universität (Weinbergweg)« until next crossing. There, turn left onto »Blücherstraße« and follow the route for approx. 600 m. Finally, turn right onto »Otto-Eißfeldt-Straße«. Fraunhofer CSP is on the right-hand side.

#### Bv Train

From main station Halle (Saale) take tram number 5 to »Kröllwitz« and leave at station »Weinbergcampus« (20 min). Go on walking on »Walter-Hülse-Straße«, turn left onto »Heinrich-Damerow-Straße«, keep left until you can see the institute straight ahead (7 min).

# By Plane

Take a train (11 min) to the main station Halle (Saale) or a taxi (50 min) to Halle from airport Halle/Leipzig.

MORE INFORMATION ON www.pv-days.com

# PV DAYS 2017 and 10 YEARS FRAUNHOFER CSP | OCTOBER 24-25 | HALLE (SAALE) | PROGRAM SESSIONS AND PANEL DISCUSSION

#### **OCTOBER 24**

9:00-10:20 Lecture Room CSP

#### BIPV – Escaping the Niche

- Energy Performance of Buildings Directive Opportunities for BIPV
   Dr. Sybil Steuwer | Buildings Performance Institute Europe
- BIPV Alliance | Sebastian Lange | Alliance BIPV
- Solar Active Architecture Advanced BIPV Design
   Dr.-Ing. Martin Zeumer | ee concept GmbH
- tbd | Prof. Dr. Jens Schneider | Fraunhofer CSP

#### Coffee Break

11:00-12:20 Lecture Room CSP

#### VIPV - Electromobility and PV

- PV Systems for Electric Cars | Arjo van der Ham | Lightyear B.V.
- New Paths for the Mobility of Tomorrow. Vision and Realization of the Research Project Adaptive City Mobility
   Dr. Jessica Le Bris | Green City Projekt GmbH
- Potential of PV on Trucks: A Field StudyDr. Ulrich Eitner | Fraunhofer ISE
- Light Weight Solar Modules for Mobile Applications
   Dominik Götz | Fraunhofer CSP

#### Lunch Break

13:30-14:50 Lecture Room CSP

## Performance Evaluation and Modeling of Modules and Systems

- Advanced Energy Yield Simulations for Various Cell Technologies in a Desert Climate | Prof. Imre Horvath | IMEC Belgium
- Analysis of Voltage Signatures of Modules in Operation Enables
   Advanced Error Detection | Ingmar Kruse | SunSniffer GmbH
- Innovative Modeling and Performance Evaluation of Bifacial Solar Modules | Stephanie Malik | Fraunhofer CSP
- Ensuring Accurate Energy Yield Prediction: Outdoor Testing and Performance Modeling at Hanwha Q CELLS
   Dr. Max Köntopp | Hanwha Q Cells GmbH

#### Coffee Break

15:30-16:50 Lecture Room CSP

#### Systems: Decentral, Hybrid, Coupled

- International Market Potential for Renewable Energy Hybrid Projects
   Paul Freunscht | GOPA Intec GmbH
- Optimized Operation of PV-Diesel Hybrid Systems: How Much Storage Is Useful? | Prof. Antonio Notholt | University of Reutlingen
- Case Study of a PV-Diesel Hybrid Installation
   Dieter Miener | IBC Solar AG
- tbd | N.N. | Solarwatt GmbH

19:00 Networking Dinner Krug zum grünen Kranze

#### **OCTOBER 24**

9:00-10:20 Lecture Room IMWS

#### Regeneration & Passivation of LID of Silicon Solar Cells

- Evaluating the Extend of Light-induced Degradation and Regeneration by Electrical Induced Charge Carriers | Enno Malguth | Laytec AG
- Electrical Regeneration of Silicon Solar Cell for Mass Production Marcus Gläser | Fraunhofer CSP
- Light-induced Regeneration for Mass Production System Design and Actual Results of Inline Belt Furnaces | Dr. Thomas Pernau | Centrotherm AG
- Reliability of mc PERC Solar Cells Under Temperature and Illumination
   Changes | Matthias Müller | Freiberg University of Technology

#### Coffee Break

11:00-12:20 Lecture Room IMWS

#### PID Diagnostics

- PIDcheck | Dr. Kay Dornich | Freiberg Instruments GmbH
- PID Field Experiences | Wolfgang Nasse | Suncycle GmbH
- Relationship Between PID and Bill of Material | Dr. Alessandro Virtuani École Polytechnique Fédérale de Lausanne
- Origin of PID-s | Dr. Otwin Breitenstein | Max Planck Institute for Microstructure Physics

#### Lunch Break

13:30-14:50 Lecture Room IMWS

# Metrology and Quality Control in PV Production

- Manufacturing Execution System in a High Performance Pilot Cell Production | Marcel Leonhardt | Meyer Burger Germany AG
- Challenges for Inline Optical Inspection in PV High Performance at High Speed and Low Cost | Dr. Christopher Berge | GP Solar GmbH
- Cell EL Inspection: Challenges and Benefits
   Ralph Schmidt | pi4\_robotics GmbH
- Avoiding Errors in Fill-factor Measurements
   Dr. Sascha Esefelder | WAVELABS Solar Metrology Systems GmbH

#### Coffee Break

15:30-16:50 Lecture Room IMWS

# Mechanical Behavior of Cells and Half Cells in Cell/Module Production (Status Workshop MechSi)

- Mechanical Defects and Strength of Solar Cells Stephan Schönfelder | Fraunhofer CSP
- Strength of Solar Cells and Damage of Cutting Processes
   Felix Kaule | Fraunhofer CSP
- Strength and Mechanical Behavior of Half Cells with the Module Rico Meier | Fraunhofer CSP
- Crack Path Deviations in Thermal Laser Separation Experiment and Simulation | Kai Kaufmann | Anhalt University of Applied Sciences

# 19:00 Networking Dinner

Krug zum grünen Kranze

#### **OCTOBER 25**

9:00-10:20 Lecture Room CSP

#### Sustainability

- Recycling of c-Si PV Module from the Perspective of Glass Recycling Benedikt Heitmann | Reiling GmbH
- Recycling of Thin Film ModulesDr. Wolfram Palitzsch | Loser Chemie GmbH
- Recycling of PV Modules Which is the Most Promising Approach?
   Dr. Andreas Obst | Fraunhofer CSP

### **Coffee Break**

11:00-12:20 Lecture Room CSP

# High Performance Cells and Modules - > 300W, >30a, <0,3€/Wp

- High Efficient Cells and Modules Made In Germany
   Dr. Alexander Kasic | aleo Solar GmbH
- Five Years of Mass Production Experience with Q.antum Cells Bernhard Klöter | Hanwha Q Cells GmbH
- Module Optimization by Using SmartCalc.CTM
   Dr. Ulrich Eitner | Fraunhofer ISE
- Advances in Solar Glass | Pradeep Kumar Kheruka | Borosil Glass Works Ltd.

#### Lunch Break

13:30-14:15 Marquee

#### Panel Discussion:

> 300 W & > 30 years & < 30 ct / W:

#### The Future of PV and Energy Systems in Europe

- Prof. Dr. Jörg Bagdahn | President Anhalt University of Applied Sciences
- Prof. Dr. Stefan Glunz | Head of Department Solar Cells Development and Characterization, Fraunhofer ISE
- N.N. | EU Commission, General Directory Energy
- Dr. Karl Heinz Küsters | Interim Manager Fraunhofer CSP
- Dr. Jörg Müller | Head of Development Hanwha Q Cells GmbH
- Dr. Thomas Zettler | CEO Laytec AG

14:30 Marquee

# Fraunhofer CSP 10 Years Anniversary Ceremony

- Official Greetings
- Groundbreaking of Fraunhofer CSP's PV System
- Get-Together with Guests and Staff

#### **OCTOBER 25**

9:00-10:20 Lecture Room IMWS

### Desert Modules: Performance, Reliability and Lifetime

- Climate-specific Weathering Tests for Service Life Estimation of PV Modules | Dr. Michael Köhl | Fraunhofer ISE
- Safety Properties of Laminated Glasses
   Dr. Steffen Bornemann | Folienwerk Wolfen GmbH
- Derivation of Adjusted Tests for Solar Modules in Extreme Climates | Ulli Zeller | Fraunhofer CSP
- tbd | Badr Ikken | IRESEN

#### Coffee Break

11:00-12:20 Lecture Room IMWS

# Soiling / Cleaning of Glas Coating

- Important Factors Affecting PV Soiling
   Ben Figgis | Qatar Environment & Energy Research Institute
   QEERI
- Microstructural Investigations of Soiling Processes in Desert Locations | Klemens Ilse | Fraunhofer CSP
- Instrumentation and Validation of Solid Aerosol Testing Technologies | Dustin Konzack | TOPAS GmbH
- DSM Antisoiling Coating Development
   Nicoletta Voicu | DSM Advanced Surfaces N.V.

#### Lunch Break

For final program and registration please visit our website www.pv-days.com