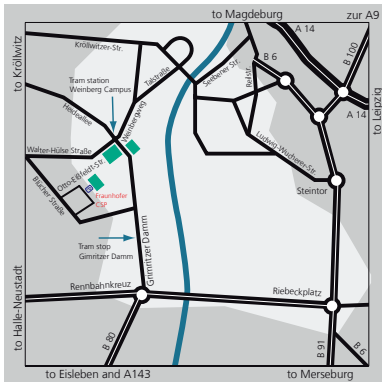


Fraunhofer Center
for Silicon Photovoltaics CSP
Otto-Eißfeldt-Str. 12
06120 Halle (Saale)

FRAUNHOFER CENTER
FOR SILICON PHOTOVOLTAICS CSP



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.

By Train

From main station Halle (Saale) take tram number 4 or 5 direction »Kröllwitz« and leave at stop »Weinberg Campus«. 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.

Attendance Fee

Category	One Day Attendance ¹⁾	Two Day Attendance ²⁾	Three Day Attendance ³⁾
Standard Fee	150 Euro*	225 / 250 Euro*	350 Euro*
Student Rate	50 Euro*	99 Euro*	150 Euro*

1) including full-day lecture program, catering and one evening event

2) including one half-day and one full-day lecture program, catering and one / two evening event(s)

3) including full lecture program, catering and two evening events

*19% VAT included

Registration

Please register online via: www.pv-days.com/en/registration.

Final registration deadline: October 15th.

After registration you will receive an invoice by mail.

Idea and Industrial Market

Your company is facing technological challenges and you are looking for partners with whom to take them up? Your company is innovation driven and you are interested in being part of research projects? **Join our industrial market** and present your ideas to the PV Days community!

www.pv-days.com/en/industrial-market.html

Contact for Participants and Companies

contact@pv-days.com

MORE INFORMATION ON

www.pv-days.com



SPECIAL 2019
IDEA & INDUSTRIAL MARKET

DATA ENABLING
TERAWATT
PHOTOVOLTAICS

PV DAYS HALLE

October 22-24, 2019

OCTOBER 22

13:00 Registration

14:00 Keynote Session

- **Data Enabling Terawatt Photovoltaics**
Ralph Gottschalg | Fraunhofer CSP
- **Digitalization of PV Systems**
Ingmar Kruse | SunSniffer GmbH & Co KG
- **Building the Foundation for a Terawatt World: Why a Global Database Matters and What It Takes to Create One**
Laurie Burnham | Sandia National Laboratories
- **PV Standards - The Building Blocks of Reliability and Quality Assurance**
Tony Sample | European Commission Joint Research Centre

15:20 Coffee Break

16:00 Operational Data and Field Performance

- **Energy Yield Performance of Monofacial and Bifacial PV Modules: Field Experiences, Challenges and Possibilities**
Johanna Nathaly Bonilla Castro | TÜV Rheinland
- **Bifacial PV Modules in a Built Environment: Energy Yield Modelling and Field Performance Testing**
Patrizio Manganiello | Interuniversity Microelectronics Centre IMEC
- **Experiences from the Field: Development and Recovery of PID in Coastal Environments**
Eckhard Fleiß | Ingenieurbüro Fleiß
- **Performance Analysis and Machine Learning Models for PV Energy Yield Prediction**
George Georghiou | FOSS Research Center for Sustainable Energy
- **Yield Evaluation of PV Systems Utilizing Machine Learning Methods**
David Daßler | Fraunhofer CSP

17:40 Lab Tours

19:30 Networking Dinner

OCTOBER 23

8:00 Registration

9:00 Metrology and Quality Assurance I

- **Recent Developments in Industrial Solar Cell IV Testing**
Maurice Lion | Botest Systems GmbH
- **Modern Controlling and System Monitoring**
Frank Tannhäuser | AIS Automation Dresden GmbH
- **CeMoDaS® – A Manufacturing Supervision System Combining Inline- and End-of-Line-Inspection with AI-Technologies**
Martin Hiersemann | HIERSEMANN Prozessautomation GmbH
- **Data Mining for Process Optimization**
Felix Neduck | Fraunhofer CSP

10:20 Coffee Break

11:00 Metrology and Quality Assurance II

- **Portable LED Flasher for Quality Assurance of Solar Parks**
Bernhard Mitchell | Wavelabs Solar Metrology Systems GmbH
- **Module Quality Assurance in Production**
Klaus Bücher | Optosolar GmbH
- **Quality Assurance of Module Encapsulation in High Volume PV Module Manufacturing**
Christian Camus | Laytec AG
- **Junction Box Analysis under Operation and In-Line by Magnetic Field Imaging**
Kai Kaufmann | DENKweit GmbH

12:20 Lunch Break

13:30 Data Requirements for Successful Grid Integration of PV

- **Flexible Solar – Grid Integration and Ancillary Services**
Stefan Degener | First Solar GmbH
- **EPC Chances: Digitalization, Quality and Diversity**
Robert van Treeck | BELECTRIC Solar & Battery GmbH
- **Photovoltaic Power Plants for Direct Selling Green Power to Consumers**
Stephan Riedel | Naturstrom AG

14:30 Coffee Break

15:00 Panel Discussion:
What are the Data Requirements Enabling Terawatt Photovoltaics?

16:30 Idea & Industrial Market

18:00 Get Together

OCTOBER 24

8:00 Registration

9:00 Obstacles in Technical PV Due Dilligence

- **Evaluating PV Module and System Data for Failure Analysis**
Claudia Buerhop-Lutz | Helmholtz-Institut Erlangen-Nürnberg
- **Data Requirements and Material Verification in Factory Inspections**
Paul Grunow | Photovoltaik-Institut Berlin
- **Quality Standards in PV - Where is the Big Gap?**
Michael Köhl | Fraunhofer ISE
- **On Site Inspection of Utility-Scale PV Power Plants: What Makes Sense and What Does Not**
Ricardo Ruether | Universidade Federal de Santa Catarina

10:20 Coffee Break

11:00 Material Verification and Process Control

- **LECO - A Novel Laser-Technology Enabling Higher Efficiency and Production Yield**
Eve Krassowski | Cell Engineering GmbH
- **Understanding How Polymeric Materials Impact PV Modules Durability: A Key for Terawatt Photovoltaics**
François Rummens | Renolit Belgium NV
- **Electrically Conductive Adhesives (ECA's) as a Lead-free, Alternative Connection Technology for Crystalline Solar Cells**
Jörg Scheurer | Polytec PT GmbH

12:20 Lunch Break

13:30 Bonus: Half Cells – Full Performance (MechSi Closing Colloquium)

- **Project MechSi at a Glance** | Jens Schneider | Fraunhofer IMWS
- **Sawing Experiments** | Ringo Köpge | Fraunhofer CSP
- **Process Simulation** | Kjell Bühler | Fraunhofer IMWS
- **Handling of Half Cells** | Matthias Pander | Fraunhofer CSP

14:30 End of Workshop

For more information, program updates and registration please visit our website www.pv-days.com