

Sunday, 17 April 2011

06:00 - 09:00 pm **Welcome Reception and Registration**
Address: Congress Center Concert Hall Freiburg, Konrad-Adenauer-Platz 1, Freiburg
Champagne reception, finger food served

Monday, 18 April 2011

Congress Centre Concert Hall Freiburg

08:00 am - 5:00 pm **Registration Hours**

08:30 - 10:30 am **Oral Session 1**
Chairs: Andres Cuevas, Holger Neuhaus, Stefan Glunz

08:30 am **Opening Session**

09:00 am Invited Lecture: High-efficiency Back Contact Solar Cells
Peter Cousins (SunPower)

09:30 am Invited Lecture: Latest Development and Production Trends of Low Cost, Double-side Contacted Silicon Solar-cells with Record Efficiencies
Peter Wawer (Q-Cells)

10:00 am High Efficiency n-Type Metal-Wrap-Through Si Solar Cells for Low-Cost Industrial Production
N. Guillemin (ECN Solar Energy), B. Geerligs (ECN Solar Energy), A. Weeber (ECN Solar Energy)

10:15 am Highly Efficient All Screen-Printed Back-Contact Back-Junction Silicon Solar Cell with Aluminum-Alloyed Emitter
R. Woehl (Fraunhofer ISE), D. Biro (Fraunhofer ISE), F. Granek (Fraunhofer ISE), J. Krause (Fraunhofer ISE)

10:30 am - 11:00 am **Coffee Break**
Coffee breaks can be enjoyed in the catering areas around the conference room.

11:00 am - 12:30 pm **Oral Session 2**
Chairs: Sean Erik Foss, Oliver Anspach

11:00 am AB INITIO Study of the Diffusion Barriers for Iron and Chromium Impurities in Silicon
S.Z. Karazhanov (Institute for Energy Technology), A. Holt (Institute for Energy Technology), B.R. Olaisen (Institute for Energy Technology), M. Syre (Institute for Energy Technology)

- 11:15 am Classification of Recombination Active Defects in Multicrystalline Solar Cells Made from Upgraded Metallurgical Grade (UMG) – Silicon
D. Lausch (Fraunhofer CSP), R. Bakowskie (Q-Cells SE), C. Hagendorf (Fraunhofer CSP), B. Hencke (Fraunhofer CSP), M. Mergner (Fraunhofer CSP), K. Petter (Q-Cells SE), S. Schweizer (Fraunhofer CSP)
- 11:30 am Towards Specifications of n-Type Silicon Purified via the Metallurgical Route
T. Schutz-Kuchly (CEA-INES), O. Palais (IM2NP), V. Sanzone (CEA-INES), Y. Veschetti (CEA-INES)
- 11:45 am A Fast and Easily Implemented Method for Interstitial Oxygen Concentration Mapping Through the Activation of Thermal Donors in Silicon
J. Veirman (CEA-INES), S. Dubois (CEA-INES), N. Enjalbert (CEA-INES), J. Garandet (CEA-INES), M. Lemiti (INL)
- 12:00 pm Impact of Hydrogen Concentration on the Regeneration of Light Induced Degradation
G. Krugel (Fraunhofer ISE), J. Geilker (Fraunhofer ISE), R. Preu (Fraunhofer ISE), W. Wolke (Fraunhofer ISE)
- 12:15 pm Investigation of Degradation in Solar Cells from Different mc-Si Materials
J. Junge (University of Konstanz), G. Hahn (University of Konstanz), D. Kreßner-Kiel (TU Bergakademie Freiberg), R. Zierer (TU Bergakademie Freiberg)
- 12:30 - 02:00 pm **Lunch Break**
Lunch will be served in the catering areas around the conference room.
- 02:00 - 04:00 pm **Poster Session I**
- Mon-P01 Correlation between Different Carrier-Lifetime Measurement Methods for Si-Blocks
J. Lich (Fraunhofer CSP), M. Turek (Fraunhofer CSP)
- Mon-P02 Spatially Resolved Carrier Lifetime Calibrated via Quasi-Steady-State Photoluminescence
J. Giesecke (Fraunhofer ISE), B. Michl (Fraunhofer ISE), F. Schindler (Fraunhofer ISE), M. Schubert (Fraunhofer ISE), W. Warta (Fraunhofer ISE)
- Mon-P03 Novel Noncontact Approach to Monitoring the Field-Effect Passivation of Emitters
M. Wilson (Semilab SDI LLC), T. Boescke (Bosch Solar Energy AG), R. Kopecek (ISC Konstanz), F. Korsos (Semilab Inc.), J. Lagowski (Semilab SDI LLC), V. Mihailetchi (ISC Konstanz), K. Peter (ISC Konstanz), R. Petres (ISC Konstanz), A. Savtchouk (Semilab SDI LLC), A. Toth (Semilab Inc.)

- Mon-P04 Towards 20.5% Efficiency PERC Cells
K. Van Wichelen (IMEC), C. Allebé (IMEC), K. Baert (IMEC), E. Cornagliotti (IMEC), F. Dross (IMEC), J. Hernandez (IMEC), T. Janssens (IMEC), A. Ruocco (IMEC), A. Tiefenauer (IMEC), L. Tous (IMEC), P. Verlinden (Amrock Pty Ltd)
- Mon-P05 In-Depth Analysis of Inline Fill Factor Measurements under Industrial Measurement Conditions
T. Roth (Bosch Solar Energy AG), K. Meyer (Bosch Solar Energy AG), M. Moert (Bosch Solar Energy AG), M. Orlob (Bosch Solar Energy AG), D. Wichmann (Bosch Solar Energy AG)
- Mon-P06 Approaches to an Improved IV and QE Characterization of Bifacial Silicon Solar Cells and the Prediction of their Module Performance
C. Duran (ISC Konstanz), T. Buck (ISC Konstanz), H. Deuser (ISC Konstanz)
- Mon-P07 Modelling Silicon Characterization
A. Cuevas (Australian National University)
- Mon-P08 Development of Tunable Closed Match LED Solar Simulator with Extended Spectral Range to UV and IR
D. Kolberg (Aescusoft GmbH Automation), D.M. Spinner (Aescusoft GmbH Automation)
- Mon-P09 Influence of Slow Surface States on Effective Lifetime Measurements
J. Seiffe (Fraunhofer ISE), M. Hofmann (Fraunhofer ISE), R. Preu (Fraunhofer ISE), J. Rentsch (Fraunhofer ISE)
- Mon-P10 Electrical and Optical Comparison of Front Contact Technologies for Highly Efficient Silicon Solar Cells
T. Fellmeth (Fraunhofer ISE), D. Biro (Fraunhofer ISE), A. Born (Fraunhofer ISE), F. Clement (Fraunhofer ISE), R. Preu (Fraunhofer ISE)
- Mon-P11 Accurate Characterisation of Silicon Nitride Films in Rough Silicon Surfaces by Ellipsometry
B. Hoex (Solar Energy Research Institute of Singapore), A. Aberle (Solar Energy Research Institute of Singapore), S.C. SIAH (Solar Energy Research Institute of Singapore)
- Mon-P12 QSS- μ PCD Measurement of Lifetime in Silicon PV Wafers: Advantages and New Applications
M. Wilson (Semilab SDI LLC), R. Kopecek (ISC Konstanz), F. Korsos (Semilab Inc.), J. Lagowski (Semilab SDI LLC), V. Mihailetchi (ISC Konstanz), K. Peter (ISC Konstanz), R. Petres (ISC Konstanz), A. Savtchouk (Semilab SDI LLC), A. Toth (Semilab Inc.)
- Mon-P13 Statistical Approach to the Description of Random Pyramid Surfaces using 3D Surface Profiles
E. Wefringhaus (ISC Konstanz), C. Kesnar (ISC Konstanz), M. Löhmann (RENA GmbH)

- Mon-P14 In-depth Analysis of Front Surface Passivation Properties For n-type IBC Silicon Solar Cells Using Advanced Simulation
C. Gong (IMEC), E. Cornagliotti (IMEC), R. Mertens (IMEC), J. Poortmans (IMEC), N. Posthuma (IMEC), K. Van Wichelen (IMEC)
- Mon-P15 Determination of the Collection Diffusion Length by Electroluminescence Imaging
C. Schinke (ISFH), K. Bothe (ISFH), R. Brendel (ISFH), D. Hinken (ISFH), A. Milsted (ISFH), J. Schmidt (ISFH), C. Ulzhöfer (ISFH)
- Mon-P16 Properties of High Efficiency Silicon Heterojunction Cells and Modules
D. Bätzner (Roth&Rau Switzerland), Y. Andraut (Roth&Rau Switzerland), F. Baumgartner (ZHAW Zurich University of Applied Sciences), A. Büchel (Roth&Rau Switzerland), C. Guerin (Roth&Rau Switzerland), D. Lachenal (Roth&Rau Switzerland), P. Papet (Roth&Rau Switzerland), B. Strahm (Roth&Rau Switzerland), G. Wahli (Roth&Rau Switzerland), F. Wünsch (Roth&Rau Switzerland)
- Mon-P17 Intrinsic Effects of Double Side Collecting Silicon Solar Cells
J. Greulich (Fraunhofer ISE), D. Biro (Fraunhofer ISE), F. Clement (Fraunhofer ISE), A. Fallisch (Fraunhofer ISE), F. Fertig (Fraunhofer ISE), M. Glatthaar (Fraunhofer ISE), M. Hermle (Fraunhofer ISE), S. Rein (Fraunhofer ISE), M. Rüdiger (Fraunhofer ISE), B. Thaidigsmann (Fraunhofer ISE)
- Mon-P18 Emitter Design with Cost-Effective Implantation
P.P. Altermatt (University of Hannover), R. Chen (University of Washington), S.T. Dunham (University of Washington), J.W. Graff (Varian Semiconductor Equipment), G. Letay (Synopsys Switzerland LLC), S. Steingrube (University of Hannover), Y. Yang (Sun Yat-Sen University), C. Zechner (Synopsys Switzerland LLC)
- Mon-P19 Simulation Study of the Influence of Doping Concentration and Layer Thicknesses on a-Si:H/c-Si Heterojunction Solar Cells Efficiency
M. Baudrit (CEA INES), R. Lachaume (CEA INES), P. Ribeyron (CEA INES), P. Scheiblin (CEA INES)
- Mon-P20 Low Aspect-Ratio Nano-Hemisphere Array Surface Texturing for High Efficient Crystalline Si Film Solar Cells With Ultrathin Thickness
H. Yu (School of EEE / Nanyang Technological University), J. Li (School of EEE / Nanyang Technological University), Y. Li (School of EEE / Nanyang Technological University)
- Mon-P21 Analysis of n-type Silicon Solar Cells with Amorphous/Crystalline Silicon Heterojunction Rear Emitter
M. Bivour (Fraunhofer ISE), C. Reichel (Fraunhofer ISE), M. Rüdiger (Fraunhofer ISE)
- Mon-P22 Quantum Efficiency Analysis of Highly Doped Areas for Selective Emitter Solar Cells
U. Jäger (Fraunhofer ISE), M. Okanovic (Fraunhofer ISE), R. Preu (Fraunhofer ISE), B. Thaidigsmann (Fraunhofer ISE)
- Mon-P23 Further Analysis of Aluminium Alloying for p⁺ Emitter Formation of n-type Silicon Solar Cells
M. Rauer (Fraunhofer ISE), S. Glunz (Fraunhofer ISE), M. Hermle (Fraunhofer ISE), J. Krause (Fraunhofer ISE), C. Schmiga (Fraunhofer ISE), R. Woehl (Fraunhofer ISE)

- Mon-P24 Influence of ITO Deposition and Annealing on HIT Solar Cell Structures
D. Zhang (Delft University of Technology), A. Tavakoliyaraki (Delft University of Technology), Y. Wu (Energy Research Center of the Netherlands), M. Zeman (Delft University of Technology), R. van Swaaij (Delft University of Technology)
- Mon-P25 Analysis of Laser-Doped Phosphorus Emitters
B. Paviet-Salomon (CEA-INES), S. Gall (CEA-INES), S. Manuel (CEA-INES), R. Monna (CEA-INES), A. Slaoui (InESS (UMR 7163 CNRS-UdS))
- Mon-P26 Characterization of Height-Selective Emitters
P. Ferrada (ISC Konstanz), R. Harney (ISC Konstanz), J. Lossen (Bosch Solar Energy AG), E. Wefringhaus (ISC Konstanz), M. Weiss (Bosch Solar Energy AG)
- Mon-P27 Optimization of Doped Amorphous Silicon Layers Applied to Heterojunction Solar Cells
S. Martin de Nicolas (CEA - INES), C. Denis (CEA - INES), D. Muñoz (CEA - INES), N. Nguyen (CEA - INES), A. Ozanne (CEA - INES), P. Ribeyron (CEA - INES)
- Mon-P28 Investigation of Emitter Homogeneity on Laser Doped Emitters
S. Germershausen (Conergy SolarModule GmbH&Co KG), L. Bartholomäus (Conergy SolarModule GmbH&Co KG)
- Mon-P29 Optical Absorption Enhancement by Mechanical Twins Grown using Low Temperature Silicon Epitaxy
D. Lai (Nanyang Technological University), O. Gunawan (IBM T. J. Watson Research Center), C.S. Tan (Nanyang Technological University)
- 4:00 - 4:30 pm **Coffee Break**
Coffee breaks can be enjoyed in the catering areas around the conference room.
- 4:30 - 6:00 pm **Oral Session 3**
Chairs: Delfina Muñoz, Ron Sinton
- 04:30 pm Advanced Loss Analysis Method for Silicon Wafer Solar Cells
A. Aberle (Solar Energy Research Institute of Singapore), B. Hoex (Solar Energy Research Institute of Singapore), W. Zhang (Solar Energy Research Institute of Singapore)
- 04:45 pm Comprehensive Characterization of Advanced Cell Concepts with Sub-Micron Resolution
P. Gundel (Fraunhofer ISE), J. Bartsch (Fraunhofer ISE), M. Drießen (Fraunhofer ISE), F. Heinz (Fraunhofer ISE), U. Jäger (Fraunhofer ISE), M.C. Schubert (Fraunhofer ISE), D. Suwito (Fraunhofer ISE), W. Warta (Fraunhofer ISE)

- 05:00 pm Dissolution and Gettering of Iron during Contact Co-Firing
J. Lelièvre (Instituto de Energía Solar), I. Hoces (Instituto de Tecnología Microelectrónica), J. Hofstetter (Instituto de Energía Solar), F. Recart (Instituto de Tecnología Microelectrónica), C. del Cañizo (Instituto de Energía Solar)
- 05:15 pm Loss Analysis and Improvements of Industrially Fabricated Cz-Si Solar Cells by Means of Process and Device Simulations
S. Steingrube (University of Hannover, Institute for Solid State Physics), P.P. Altermatt (University of Hannover, Institute for Solid State Physics), R. Brendel (ISFH), R. Cen (University of Washington, Department of Electrical Engineering), T. Dullweber (ISFH), S.T. Dunham (University of Washington, Department of Electrical Engineering), H. Hannebauer (ISFH), Y. Yang (Institute for Solar Energy Systems, Sun Yat-Sen University)
- 05:30 pm Etching of a-Si:H on c-Si Absorber Monitored by in situ Photoluminescence Measurements
S.M. Greil (Helmholtz-Zentrum Berlin), K. Hartmann (Helmholtz-Zentrum Berlin), L. Korte (Helmholtz-Zentrum Berlin), N. Mingirulli (Helmholtz-Zentrum Berlin), J. Rappich (Helmholtz-Zentrum Berlin), B. Rech (Helmholtz-Zentrum Berlin), F. Rösicke (Helmholtz-Zentrum Berlin)
- 05:45 pm Modelling Carrier Recombination in Highly Phosphorus-Doped Industrial Emitters
A. Kimmerle (Fraunhofer ISE), U. Belledin (Fraunhofer ISE), D. Biro (Fraunhofer ISE), A. Wolf (Fraunhofer ISE)
- 06:00 - 08:00 pm **Sightseeing Tour and PV City Tour** (taking place the same time)
Meeting point for the tours is in front of the Congress Centre Concert Hall Freiburg.
Tour registration is possible on-site at the registration desk (subject to availability).

Tuesday, 19 April 2011

Congress Centre Concert Hall Freiburg

- 08:30 - 10:30 am **Oral Session 4**
Chairs: Barbara Terheiden, Armin Aberle, Jörg Müller
- 08:30 am Extended oral presentation: Impact of Fermi-level Dependent Defect Equilibration on V_{OC} of Amorphous/Crystalline Silicon Heterojunction Solar Cells
T. Schulze (Helmholtz-Zentrum Berlin), H. Beushausen (Helmholtz-Zentrum Berlin), L. Korte (Helmholtz-Zentrum Berlin), C. Leendertz (Helmholtz-Zentrum Berlin), N. Mingirulli (Helmholtz-Zentrum Berlin), B. Rech (Helmholtz-Zentrum Berlin)
- 09:00 am Silane Plasma Diagnostics for High-Efficiency Silicon Heterojunction Solar Cells
A. Descoeurdes (EPFL - IMT - PVLAB), C. Ballif (EPFL - IMT - PVLAB), L. Barraud (EPFL - IMT - PVLAB), R. Bartlome (EPFL - IMT - PVLAB), S. De Wolf (EPFL - IMT - PVLAB), F. Zicarelli (EPFL - IMT - PVLAB)

- 09:15 am Investigation on the Impact of Metallic Surface Contaminations on Minority Carrier Lifetime of a-Si:H Passivated Crystalline Silicon
F. Sevenig (Fraunhofer ISE), L. Breitenstein (Fraunhofer ISE), M. Hermle (Fraunhofer ISE), A. Oltersdorf (Fraunhofer ISE)
- 09:30 am Development of Interdigitated Back Contact Silicon Heterojunction (IBC SI-HJ) Solar Cells
T. Desrués (CEA-INES), S. De Vecchi (CEA-INES), D. Muñoz (CEA-INES), P. Ribeyron (CEA-INES), F. Souche (CEA-INES)
- 09:45 am High-rate Atomic Layer Deposition of Al₂O₃ for the Surface Passivation of Si Solar Cells
F. Werner (Institute for Solar Energy Research Hamelin (ISFH)), R. Brendel (ISFH), P. Poodt (TNO Science and Industry), F. Roozeboom (TNO Science and Industry), J. Schmidt (ISFH), W. Stals (SoLayTec), V. Tiba (SoLayTec), B. Veith (ISFH)
- 10:00 am Excellent Passivation by Low-Temperature Deposited SiO₂ Enabled by Al₂O₃ Thin Films
G. Dingemans (Eindhoven University of Technology), S. Bordihn (Q-CELLS), E. Kessels (Eindhoven University of Technology), M. Mandoc (Eindhoven University of Technology), R. van de Sanden (Eindhoven University of Technology)
- 10:15 am Comparison of the Thermal Stability of Single Al₂O₃ Layers and Al₂O₃/SiN-Stacks for the Surface Passivation of Silicon
B. Veith (ISFH), R. Brendel (ISFH), J. Schmidt (ISFH), F. Werner (ISFH), D. Zielke (ISFH)
- 10:30 - 11:00 am **Coffee Break**
Coffee breaks can be enjoyed in the catering areas around the conference room.
- 11:00 - 12:30 pm **Oral Session 5**
Chairs: Jörg Horzel, Gunnar Schubert
- 11:00 am Pilot Solar Cell Series with Record Efficiencies Exceeding 18 % on UMG Silicon
P. Engelhart (Q-Cells SE), B. Barkenfelt (Q-Cells SE), M. Fischer (Q-Cells SE), S. Hörnlein (Q-Cells SE), M. Kauert (Q-Cells SE), C. Klenke (Q-Cells SE), J. Müller (Q-Cells SE), K. Petter (Q-Cells SE), S. Schmidt (Q-Cells SE), A. Schulze (Q-Cells SE), R. Seguin (Q-Cells SE), F. Stenzel (Q-Cells SE), P. Wawer (Q-Cells SE)
- 11:15 am 19.2% Screen-Printed PERC Solar Cells with Local Al-Doped Back Surface Field
S. Gatz (ISFH), K. Bothe (ISFH), R. Brendel (ISFH), T. Dullweber (ISFH)
- 11:30 am Metal Pinning Through Rear Passivation Layers: Characterisation and Effects on Solar Cells
P. Saint-Cast (Fraunhofer ISE), E. Billot (Fraunhofer ISE), M. Glatthaar (Fraunhofer ISE), J. Hauschild (Fraunhofer ISE), M. Hofmann (Fraunhofer ISE), R. Preu (Fraunhofer ISE), J. Rentsch (Fraunhofer ISE), L. Weiss (Fraunhofer ISE)

- 11:45 am Distribution of Silicon in the Aluminum Matrix for Rear Passivated Solar Cells
*E. Urrejola (ISC Konstanz), J. Glatz-Reichenbach (ISC Konstanz), K. Peter (ISC Konstanz),
H. Plagwitz (Sunways AG Photovoltaic Technology), G. Schubert (Sunways AG Photovoltaic Technology)*
- 12:00 pm Recombination at Local Aluminum Alloyed Silicon Solar Cell Base Contacts by
Dynamic Infrared Lifetime Mapping
*J. Müller (ISFH), K. Bothe (ISFH), R. Brendel (ISFH), S. Gatz (ISFH), H. Plagwitz (Sunways AG),
G. Schubert (Sunways AG)*
- 12:15 pm Surface Passivation of Phosphorus- Diffused Emitters by Inline Thermal Oxidation
*S. Mack (Fraunhofer ISE), D. Biro (Fraunhofer ISE), D. Scheffler (Fraunhofer ISE), A. Wolf (Fraunhofer ISE),
C. Wufka (Fraunhofer ISE)*
- 12:30 - 02:00 pm **Lunch Break**
Lunch will be served in the catering areas around the conference room.
- 02:00 - 04:00 pm **Poster Session II**
- Tue-P01 Trace Elemental Analysis of Impurities in Crystalline Silicon Material
*S. Meyer (Fraunhofer Center for Silicon Photovoltaics), C. Hagendorf (Fraunhofer Center for Silicon
Photovoltaics), S. Richter (Fraunhofer Center for Silicon Photovoltaics)*
- Tue-P02 Sensitivity of Crystalline Silicon Solar Cells to Metal Impurities
G. Coletti (ECN Solar Energy)
- Tue-P03 Electrical Properties of Boron, Phosphorus and Gallium Co-Doped Silicon
M. Forster (INL-Insa Lyon / ApollonSolar), R. Einhaus (ApollonSolar), E. Fourmond (INL-Insa Lyon)
- Tue-P04 Effect of Thermal History on Iron Precipitation in Crystalline Silicon
A. Haarahiltunen (Aalto University), H. Savin (Aalto University), M. Yli-Koski (Aalto University)
- Tue-P05 Atmospheric Components and Dopant Carry-Over Influence During Laser Ablation
*V. Schütz (Laser Zentrum Hannover e.V.), O. Haupt (Laser Zentrum Hannover e.V.),
U. Stute (Laser Zentrum Hannover e.V.)*
- Tue-P06 Metals-Reject Efficiency of Steam Purification Membrane
J. Spiegelman (RASIRC)
- Tue-P07 Mechanical Strength of Metal Wrap Through Wafers
*S. Schoenfelder (Fraunhofer Center for Silicon Photovoltaics CSP), J. Bagdahn (Fraunhofer Center for
Silicon Photovoltaics CSP), C. Fischer (Fraunhofer Center for Silicon Photovoltaics CSP), T. Geppert
(Bosch Solar Energy AG), H. Krokoszinski (Bosch Solar Energy AG), M. Oswald (Fraunhofer Center for
Silicon Photovoltaics CSP), T. Wütherich (Bosch Solar Energy AG)*

- Tue-P08 Factors Effecting Performance of Al Pastes for Back Passivated Cells
N. Merchant (Ferro Corporation), E. Graddy (Ferro Corporation), C. Khadilkar (Ferro Corporation), A. Shaikh (Ferro Corporation), P. van Eijk (Ferro Corporation)
- Tue-P09 Long Term Stability of Solar Modules Made from Compensated SOG-Si or UMG-Si Solar Cells
K. Petter (Q-Cells SE), E. Enebakk (Elkem Solar AS), Y. Ludwig (Q-Cells SE), S. Malik (Q-Cells SE), M. Mette (Q-Cells SE), J.O. Odden (Elkem Solar AS), S. Rupp (Q-Cells SE), M. Sedlacek (Q-Cells SE), M. Strobel (Q-Cells SE), R. Tronstad (Elkem Solar AS), P. Wawer (Q-Cells SE)
- Tue-P10 Growth and Characterization of Multicrystalline Silicon
R. Bairava Ganesh (Moserbaer Photovoltaic Limited), E.J. Overlid (SINTEF Materials & Chemistry), G. Rajeswaran (Moserbaer Photovoltaic Limited), B. Rynningen (SINTEF Materials & Chemistry), I. Saha (Moserbaer Photovoltaic Limited), M. Syversten (SINTEF Materials & Chemistry), H. Tathgar (UMOEL SOLAR AS)
- Tue-P11 Non-Destructive Testing of Crystalline Silicon Photovoltaic Back-Contact Modules
D. Veldman (ECN Solar Energy), B. Brockholz (ECN Solar Energy), P.C. de Jong (ECN Solar Energy)
- Tue-P12 PV Module Durability Testing under High Voltage Biased Damp Heat Conditions
Z. Xiong (Solar Energy Research Institute of Singapore (SERIS)), A. Aberle (Solar Energy Research Institute of Singapore (SERIS)), T. Walsh (Solar Energy Research Institute of Singapore (SERIS))
- Tue-P13 Evaluation of the Poweroutput of a New Encapsulation-Free Module Concept for Crystalline Silicon Cells
I. Haedrich (Fraunhofer ISE), T. Neff (Bystronic Lenhardt GmbH), H. Wirth (Fraunhofer ISE)
- Tue-P14 Large Area PERC Solar Cells with Efficiency Exceeding 19% in Pilot Series Designed for Conventional Module Assembling
A. Mohr (Q-Cells SE), S. Diez (Q-Cells SE), B. Hintze (Q-Cells SE), R. Hoyer (Q-Cells SE), J.Y. Lee (Q-Cells SE), J. Müller (Q-Cells SE), M. Scherff (Q-Cells SE), S. Schmidt (Q-Cells SE), R. Seguin (Q-Cells SE), A. Stekolnikov (Q-Cells SE), S. Tardon (Q-Cells SE), S. Wanka (Q-Cells SE), P. Wawer (Q-Cells SE), J. Wendt (Q-Cells SE)
- Tue-P15 Study on Long Term Reliability of Photo-Voltaic Modules and Analysis of Power Degradation using Accelerated Aging Tests and Electroluminescence Technique
R. Khatri (Moser Baer Photovoltaic Ltd.), S. Agarwal (Moser Baer Photovoltaic Ltd.), I. Saha (Moser Baer Photovoltaic Ltd.), S. Singh (Moser Baer Photovoltaic Ltd.)
- Tue-P16 Novel Concept for Efficient Current Collection and Interconnection of PV Cells
B. Sadlik (Day4 energy), R. Grischke (Day4 energy), L. Rubin (Day4 energy)
- Tue-P17 Metallographic Preparation of Solar Cell Samples
P. Schmitt (Fraunhofer ISE), D. Maier (Fraunhofer ISE), M. Tranitz (Fraunhofer ISE), P. Voos (Buehler GmbH), H. Wirth (Fraunhofer ISE)

- Tue-P18 Eco-Friendly Minimodules Made of n-Type Aluminum Rear Emitter Solar Cells
A. Halm (ISC Konstanz), N. Fukushima (Hitachi Chemical), R. Kopecek (ISC Konstanz), M. Löscher (ISC Konstanz), K. Peter (ISC Konstanz), L. Popescu (ISC Konstanz), J. Theobald (ISC Konstanz), M.A. Vázquez (Isofoton S.A.)
- Tue-P19 Physical Properties of Industrial 19 % Rear Side Passivated Al-LBSFR- Solar Cells
A. Münzer (Centrotherm Photovoltaics AG), J. Schöne (Centrotherm Photovoltaics AG)
- Tue-P20 Results on n-Type IBC Solar Cells using Industrial Optimized Techniques in the Fabrication Processing
G. Galbiati (ISC-Konstanz), R. Roescu (ISC-Konstanz), A. Halm (ISC-Konstanz), L. Joseph (ISC-Konstanz), R. Kopecek (ISC-Konstanz)
- Tue-P21 19.5% Efficient n-Type Si Solar Cells Made in Pilot Production
T. Burgers (ECN Solar Energy), P. Barton (ECN Solar Energy), A. Carr (ECN Solar Energy), L. Gaofei (Yingli Solar), B. Geerligs (ECN Solar Energy), A. Haijiao (Yingli Solar), X. Jingfeng (Yingli Solar), P. Venema (Tempress Systems BV), A. Vlooswijk (Tempress Systems BV), S. Weipeng (Yingli Solar), H. Zhiyan (Yingli Solar)
- Tue-P22 High Efficiency Bifacial Solar Cell Developed on Monocrystalline Si and Transferred to Multicrystalline Si
N. Auriac (INES CEA), R. Cabal (INES CEA), B. Grange (INES CEA), D. Heslinga (INES CEA), A. Maris-Froelich (INES CEA), J. Stendera (INES CEA), Y. Veschetti (INES CEA)
- Tue-P23 Updates on Some Technologies for C-Si Based Solar Cells Manufacturing
K.W. Huang (Gintech Energy Corporation), K.S. Chang (Gintech Energy Corporation), T.S. Chen (Gintech Energy Corporation), Y.K. Chiou (Gintech Energy Corporation), M.C. Kuo (Gintech Energy Corporation), H.M. Lin (Gintech Energy Corporation), C.T. Tsai (Gintech Energy Corporation), C.C. Wang (Gintech Energy Corporation), C.S. Wu (Gintech Energy Corporation)
- Tue-P24 Fabrication of n-Type Silicon Solar Cell with Aluminum Doped p⁺ Rear Emitter
Y.D. Kim (Korea University), H. Kim (Korea University), S. Kim (Korea University), S. Park (Korea University), H. Park (Korea University), J. Song (Korea University), S.J. Tark (Korea University)
- Tue-P25 Cost Model for Lima Device
M.A. Vazquez (ISOFOTON, S. A.), J.P. Connolly (Nanophotonics Technology Center), O. Cubero (Nanophotonics Technology Center), G. Daly (Nanophotonics Technology Center), A. Halm (ISC Konstanz), R. Kopecek (ISC Konstanz), V.D. Mihailetchi (ISC Konstanz), E. Perez (Nanophotonics Technology Center), G. Pucker (Fondazione Bruno Kessler), G. Sanchez (Nanophotonics Technology Center)
- Tue-P26 Investigations of Thick-Film-Paste Rheology for Dispensing Applications
M. Pospischil (Fraunhofer ISE), G. Birkle (Laboratory for MEMS-Applications), D. Biro (Fraunhofer ISE), F. Clement (Fraunhofer ISE), A. Henning (W.C. Heraeus GmbH), P. Koltay (Laboratory for MEMS-Applications), C. Mohr (W.C. Heraeus GmbH), M. Neidert (W.C. Heraeus GmbH), J. Specht (Fraunhofer ISE), R. Zengerle (Laboratory for MEMS-Applications), K. Zengerle (Fraunhofer ISE)
- Tue-P27 Quantitative Comparison of Simulated and Experimental Silver Crystal Formation at the Interface of Silver Thick Film Contacts on n-type Silicon
S. Kontermann (Fraunhofer Heinrich Hertz Institute), R. Preu (Fraunhofer ISE), A. Ruf (Fraunhofer ISE)

- Tue-P28 Influence of Thickness Deviation on Crystalline Silicon Solar Cell Performance
M. Reuter (Institut für Physikalische Elektronik, Universität Stuttgart), K. Carstens (Institut für Physikalische Elektronik, Universität Stuttgart), J. Cichoszewski (Institut für Physikalische Elektronik, Universität Stuttgart), P. Gedeon (Institut für Physikalische Elektronik, Universität Stuttgart), J.H. Werner (Institut für Physikalische Elektronik, Universität Stuttgart)
- Tue-P29 Laser Ablation of Silicodioxide on Silicon with Pico- and Femtosecond Laser Ablation
T. Rublack (MLU Halle-Wittenberg), G. Seifert (MLU Halle-Wittenberg)
- Tue-P30 Characterization and Module Integration of Full Electroplated Contacts on Silicon Solar Cells
Norbert Bay (RENA GmbH), Gisela Cimiotti (RENA GmbH), John Burschik (RENA GmbH), Nelli Fritz (RENA GmbH), Ole Lühn (RENA GmbH), Markus Sieber (RENA GmbH), Daniel Kray (RENA GmbH), Holger Kühnlein (RENA GmbH), Hartmut Nussbaumer (RENA GmbH)
- 04:00 - 4:30 pm **Coffee Break**
Coffee breaks can be enjoyed in the catering areas around the conference room.
- 04:30 - 6:00 pm **Oral Session 6**
Chairs: Ilkay Cesar, Axel Metz
- 04:30 pm Towards Industrial n-Type PERT Solar Cells: Rear Passivation and Metallization Schemes
A. Richter (Fraunhofer ISE), J. Benick (Fraunhofer ISE), S.W. Glunz (Fraunhofer ISE), M. Hermle (Fraunhofer ISE), M. Hörteis (Fraunhofer ISE), A. Kalio (Fraunhofer ISE), J. Seiffe (Fraunhofer ISE)
- 04:45 pm Influence of the Front Surface Passivation Quality on Large Area n-Type Silicon Solar Cells with Al-Alloyed Rear Emitter
F. Book (University of Konstanz), G. Hahn (University of Konstanz), H. Plagwitz (Sunways AG), G. Schubert (Sunways AG), T. Wiedenmann (University of Konstanz)
- 05:00 pm Improving Screen Printed Metallization for Large Area Industrial Solar Cells Based on n-Type Material
A. Edler (ISC-Konstanz), T. Aichele (Bosch Solar Energy AG), T. Bösccke (Bosch Solar Energy AG), R. Harney (ISC-Konstanz), R. Hellriegel (Bosch Solar Energy AG), R. Kopecek (ISC-Konstanz), H. Krokoszinski (Bosch Solar Energy AG), J. Lossen (Bosch Solar Energy AG), K. Meyer (Bosch Solar Energy AG), V. Mihailetschi (ISC-Konstanz), D. Stichtenoth (Bosch Solar Energy AG)
- 05:15 pm Simplified Structure for Metal Wrap Through Solar Cells with Passivated Rear Surface
B. Thaidigsmann (Fraunhofer ISE), D. Biro (Fraunhofer ISE), F. Clement (Fraunhofer ISE), R. Preu (Fraunhofer ISE), A. Wolf (Fraunhofer ISE)
- 05:30 pm Long-Term Stability Analysis of an Al/Ni:V/Ag Metallization for Silicon Solar Cells
V. Jung (ISFH), M. Köntges (ISFH)

05:45 pm Outdoor Monitoring of the Energy Yield and Electrical Parameters of Standard Polysilicon-Based and New UMG-Si PV Modules
E. Sánchez Hernández (University of Salamanca), J. Bullon Camarasa (Silicio FerroSolar-Grupo Ferroatlántica), T. Carballo (DC Wafers), J. García (Pevafersa, SA), I. Guerrero (DC Wafers), J. Gutiérrez (Pevafersa, SA), J. Izard Gómez-Rodulfo (Grupo Unisolar), J. Manuel Miguez (Silicio FerroSolar-Grupo Ferroatlántica), R. Ordás Badia (Silicio FerroSolar-Grupo Ferroatlántica), V. Parra García (DC Wafers), J. Torreblanca González (University of Salamanca)

07:45 pm **Conference Dinner**
Address: BWW-Halle, Neunlindenstrasse 35, Freiburg
06:50 - 07:30 pm: Bus transfer to the conference dinner. Buses leave every 20 minutes in front of the Congress Centre Concert Hall Freiburg.
Please wear your badges!
11:30 pm - 01:00 am: Bus transfer to Congress Center Concert Hall. Buses leave every 30 minutes.

Wednesday, 20 April 2011 Congress Centre Concert Hall Freiburg

08:30 am - 10:30 am **Oral Session 7**
Chairs: Peter Cousins, Nils-Peter Harder, Ralf Preu

08:30 am Extended oral presentation: High Quality Ion Implanted Boron Emitters in an Interdigitated Back Contact Solar Cell with 20% Efficiency
N. Bateman (Varian Semiconductor Equipment Associates), J. Benick (Fraunhofer ISE), S. Glunz (Fraunhofer ISE), J. Graff (Varian Semiconductor Equipment Associates), M. Hermle (Fraunhofer ISE)

09:00 am High-Efficiency Silicon Heterojunction Solar Cells: From Physics to Production Lines
C. Ballif (EPFL - IMT - PVLAB), Y. Andraut (Roth & Rau Switzerland), L. Barraud (EPFL - IMT - PVLAB), R. Bartlome (EPFL - IMT - PVLAB), D. Bätzner (Roth & Rau Switzerland), P. Bôle (EPFL - IMT - PVLAB), A. Büchel (Roth & Rau Switzerland), S. De Wolf (EPFL - IMT - PVLAB), B. Demaure- (EPFL - IMT - PVLAB), A. Descoedres (EPFL - IMT - PVLAB), C. Guérin (Roth & Rau Switzerland), N. Holm (Roth & Rau Switzerland), Z. Holman (EPFL - IMT - PVLAB), D. Lachenal (Roth & Rau Switzerland), P. Papet (Roth & Rau Switzerland), J. Seif (EPFL - IMT - PVLAB), B. Strahm (Roth & Rau Switzerland), M. Tesfai (Roth & Rau Switzerland), G. Wahli (Roth & Rau Switzerland), F. Wuensch (Roth & Rau Switzerland), F. Zicarelli (EPFL - IMT - PVLAB)

09:15 am Efficiency Improvement by Deeper Emitter with Lower Sheet Resistance
Y. Komatsu (ECN Solar Energy), M. Koorn (ECN Solar Energy), A. Stassen (ECN Solar Energy), P. Venema (Tempress Systems BV), A. Vlooswijk (Tempress Systems BV)

09:30 am Phosphorus Out-Diffusion in Liquid Silicon
S. Eisele (Institut für Physikalische Elektronik / Universität Stuttgart), J. Köhler (Institut für Physikalische Elektronik / Universität Stuttgart)

- 09:45 am Formation of Highly Aluminum-Doped p-Type Silicon Regions by In-Line High-Rate Evaporation
C. Mader (ISFH), R. Bock (ISFH), R. Brendel (ISFH), J. Schmidt (ISFH)
- 10:00 am Accurate Modeling of Aluminum-Doped Silicon
M. Rüdiger (Fraunhofer ISE), S.W. Glunz (Fraunhofer ISE), M. Hermle (Fraunhofer ISE), M. Rauer (Fraunhofer ISE), C. Schmiga (Fraunhofer ISE)
- 10:15 am Influence of the Dopant on the Contact Formation to p⁽⁺⁾-Type Silicon
S. Riegel (University of Konstanz), G. Hahn (University of Konstanz), F. Mutter (University of Konstanz), B. Terheiden (University of Konstanz)
- 10:30 am - 11:00 am **Coffee Break**
Coffee breaks can be enjoyed in the catering areas around the conference room.
- 11:00 am - 12:30 pm **Oral Session 8**
Chairs: Jan Lossen, Michael Reuter
- 11:00 am Current Transport in Thick Film Ag Metallization: Direct Contacts at Silicon Pyramid Tips?
E. Cabrera (ISC Konstanz), J. Arumughan (ISC Konstanz), J. Glatz-Reichenbach (ISC Konstanz), R. Kopecek (ISC Konstanz), S. Olibet (ISC Konstanz), D. Reinke (Sunways AG), G. Schubert (Sunways AG)
- 11:15 am Advanced Metallization of Rear Surface Passivated Metal Wrap Through Silicon Solar Cells
E. Lohmueller (Fraunhofer ISE), J. Bartsch (Fraunhofer ISE), D. Biro (Fraunhofer ISE), F. Clement (Fraunhofer ISE), C. Harmel (Fraunhofer ISE), M. Hoerteis (Fraunhofer ISE), J. Specht (Fraunhofer ISE), B. Thaidigsmann (Fraunhofer ISE), A. Wolf (Fraunhofer ISE)
- 11:30 am Low Temperature Laser Metallization for Silicon Solar Cells
T. Röder (Institut für Physikalische Elektronik / Universität Stuttgart), E. Hoffmann (Institut für Physikalische Elektronik / Universität Stuttgart), B. Konrad (Institut für Physikalische Elektronik / Universität Stuttgart), J. Köhler (Institut für Physikalische Elektronik / Universität Stuttgart)
- 11:45 am Economical Evaluation of Two-Step Metallization Processes for Silicon Solar Cells
M. Kamp (Fraunhofer ISE), J. Bartsch (Fraunhofer ISE), S. Glunz (Fraunhofer ISE), M. Hörteis (Fraunhofer ISE), S. Nold (Fraunhofer ISE)
- 12:00 pm The Origin of Background Plating
S. Braun (Universität Konstanz), G. Hahn (Universität Konstanz), B. Raabe (Universität Konstanz), A. Zuschlag (Universität Konstanz)
- 12:15 pm Metallization of n-Type Silicon Solar Cells using Fine Line Printing Techniques
A. Kalio (Fraunhofer ISE), M. Hörteis (Fraunhofer ISE), A. Richter (Fraunhofer ISE)

- 12:30 - 02:00 pm **Lunch Break**
Lunch will be served in the catering areas around the conference room.
- 02:00 - 04:00 pm **Poster Session III**
- Wed-P01 Layer Selective Laser Ablation for Local Contacts to Thin Emitters
F. Haase (ISFH), K. Bothe (ISFH), R. Brendel (ISFH), E. Garralaga (ISFH)
- Wed-P03 Front-Side Metalization by Means of Flexographic Printing
M. Frey (Fraunhofer ISE), D. Biro (Fraunhofer ISE), F. Clement (Fraunhofer ISE), S. Dilfer (IDD TU Darmstadt), D. Erath (Fraunhofer ISE)
- Wed-P04 Role of TCO Contacts in Amorphous/Crystalline Silicon Heterojunction Solar Cells
M. Tucci (ENEA), G. Boncompagni (ENEA), D. Caputo (University Sapienza), S. De Iulius (ENEA), M. Izzi (ENEA), L. Serenelli (ENEA), G. de Cesare (University Sapienza)
- Wed-P05 Finite Element Simulation of Laser Diffusion in Silicon
G. Poulain (Institut des Nanotechnologies de Lyon INL-UMR5270), D. Blanc-Pelissier (Institut des Nanotechnologies de Lyon INL-UMR5270), A. Kaminski (Institut des Nanotechnologies de Lyon INL-UMR5270), M. Lemiti (Institut des Nanotechnologies de Lyon INL-UMR5270), Y. Pellegrin (SEMCO Eng.), B. Semmache (SEMCO Eng.)
- Wed-P06 Mechanism of Aluminum BSF Formation and their Defects
S. Park (Korea University), C. Choi (Korea University), Y.D. Kim (Korea University), J. Song (Korea University), S.J. Tark (Korea University)
- Wed-P07 Investigation of Ablation Mechanisms for Selective Laserablation of Dielectrics
G. Heinrich (Cis Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH), R. Boehme (Roth & Rau AG), M. Bähr (Cis Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH), K. Stolberg (Jenoptik Laser, Optik, Systeme GmbH), T. Wütherich (Bosch Solar Energy AG)
- Wed-P08 Efficiency Gain in c-Si Cells Through Selective Emitter and Double Printing
D. Tonini (Applied Materials Italia), C. Bottosso (Applied Materials Italia), G. Cellere (Applied Materials Italia), V. Furin (Applied Materials Italia), M. Galiazzo (Applied Materials Italia), P. Kumar (Applied Materials Italia), D. Tanner (Applied Materials Italia), A. Voltan (Applied Materials Italia)
- Wed-P09 Screen Printable Silver Paste for Silicon Solar Cells with High Sheet Resistance Emitters
Y. Yang (Ferro Corporation), D. Gnizak (Ferro Corporation), E. Graddy (Ferro Corporation), U. Kumar (Ferro Corporation), S. Seyedmohammadi (Ferro Corporation), A. Shaikh (Ferro Corporation)
- Wed-P10 Recent Advances in Laser Processing of Crystalline Solar Cells
M. Schulz-Ruhtenberg (Fraunhofer Institute for Laser Technology), T. Baier (Manz Automation AG), J. Das (IMEC), J.L. Hernández (IMEC), S. Krantz (Solland Solar Cells BV), D. Trusheim (Fraunhofer Institute for Laser Technology), J. Wieduwilt (TRUMPF Laser- und Systemtechnik GmbH)

- Wed-P11 BASF's CyptoSol™ Inks Designed for the LTP Technology – The Unique Contact Free Metallization Approach for Fine Line Printing on c-Si Solar Cells
F. Kleine-Jäger (BASF SE)
- Wed-P12 Reducing Silver Consumption from Silicon Solar Cells
J. Moyer (Heraeus), E. Kurtz (Heraeus), T. Pham (Heraeus)
- Wed-P13 Direct Write Metallization
M. van Hest (National Renewable Energy Laboratory), C. Curtis (National Renewable Energy Laboratory), D. Ginley (National Renewable Energy Laboratory), S. Habas (National Renewable Energy Laboratory), A. Miedaner (National Renewable Energy Laboratory), H. Platt (National Renewable Energy Laboratory)
- Wed-P14 Improving Front Contacts of n-type Cells
J. Silva (INL INSA-Lyon), M. Gauthier (Photowatt), A. Kaminski (CMNE IMEP-LAHC Grenoble), M. Lemiti (INL INSA-Lyon), B. Semmache (Semco Engineering)
- Wed-P15 +0.6% Efficiency Gain by Novel Texture for String Ribbon Solar Cells
J. Cichoszewski (Institute of Physical Electronics / University of Stuttgart), M. Reuter (Institute of Physical Electronics / University of Stuttgart)
- Wed-P16 Influence of Layer Thickness on Electrical Properties of PECVD Aluminum Oxide
P. Saint-Cast (Fraunhofer ISE), E. Billot (Fraunhofer ISE), M. Hofmann (Fraunhofer ISE), P. Olwal (Fraunhofer ISE), R. Preu (Fraunhofer ISE), J. Rentsch (Fraunhofer ISE), C. Schetter (Fraunhofer ISE), D. Trogus (Fraunhofer ISE)
- Wed-P17 Nanoimprint Lithography for Honeycomb Texturing of Multicrystalline Silicon
H. Hauser (Fraunhofer ISE), B. Bläsi (Fraunhofer ISE), M. Hermle (Fraunhofer ISE), V. Kübler (Fraunhofer ISE), B. Michl (Fraunhofer ISE), C. Müller (Imtek), S. Schwarzkopf (Fraunhofer ISE)
- Wed-P18 High Surface Passivation Quality and Thermal Stability of ALD Al₂O₃ on Wet Chemically Grown Ultra-Thin SiO₂ on Silicon
S. Bordihn (Q-Cells SE), G. Dingemans (Technische Universiteit Eindhoven), P. Engelhart (Q-Cells SE), W.M.M. Kessels (Technische Universiteit Eindhoven), G. Kesser (Q-Cells SE), D. Köhn (Q-Cells SE), M.M. Mandoc (Technische Universiteit Eindhoven), V. Mertens (Q-Cells SE)
- Wed-P19 Passivation of Si Wafers by ALD-Al₂O₃ Films with Different Surface Conditioning
T. Lüder (University of Konstanz), G. Hahn (University of Konstanz), T. Hanke (University of Konstanz), B. Terheiden (University of Konstanz)
- Wed-P20 Introduction of an Aluminium Oxide Passivating Layer for the Fabrication of Industrial n-type Solar Cell
P. Brand (CEA INES), D. Pierreux (ASM), V. Sanzone (CEA INES), Y. Veschetti (CEA INES)
- Wed-P21 Low Surface Recombination Velocity using Amorphous Silicon on Industrial-Type Cleaned Surfaces
S. Gloger (University of Konstanz), N. Brinkmann (University of Konstanz), B. Terheiden (University of Konstanz)

- Wed-P22 Effect of Local Al-BSF Quality and Contact Pitch on SiN_x and Al₂O₃ Rear Passivated Solar Cells
I. Cesar (ECN), A. Mewe (ECN), A. Weeber (ECN)
- Wed-P23 Silicon Surface Passivation by Al₂O₃: Effect of ALD Reactants
P. Repo (Aalto University), S. Li (Beneq Oy), H. Savin (Aalto University), J. Skarp (Beneq Oy), H. Talvitie (Aalto University)
- Wed-P24 Highly Textured MC-Silicon, Obtained by a Dry Etching Multi- SPEP Process
M. Tucci (ENEA), L. Cecchetto (ENEA), S. De Luliis (ENEA), M. Izzi (ENEA), E. Salza (ENEA), L. Serenelli (ENEA)
- Wed-P25 Using Design of Experiments Approach to Optimise Custom Emitter Clean Process used in PV Manufacturing
I. Saha (Moser Baer Photovoltaic Ltd.), N. Jain (Moser Baer Photovoltaic Ltd.), S. Kumar (Moser Baer Photovoltaic Ltd.)
- 03:30 - 04:00 pm **Coffee Break**
Coffee breaks can be enjoyed in the catering areas around the conference room.
- 04:00 - 06:00 pm **Oral Session 9**
Chairs: Erik Sauar, Kristian Peter
- 04:00 pm New Measurement Method for the Investigation of Space Charge Region Recombination Losses Induced by the Metallization of Silicon Solar Cells
R. Hoenig (Fraunhofer ISE), D. Biro (Fraunhofer ISE), F. Clement (Fraunhofer ISE), M. Glatthaar (Fraunhofer ISE), J. Greulich (Fraunhofer ISE), J. Wilde (Institut fuer Mikrosystemtechnik (IMTEK))
- 04:15 pm Laser Doping using Phosphorus-Doped Silicon Nitrides
B. Paviet-Salomon (CEA/INES), S. Gall (CEA/INES), S. Manuel (CEA/INES), R. Monna (CEA/INES), A. Slaoui (InESS (UMR 7163 CNRS-UdS))
- 04:30 pm High Efficiency Selective Emitter Cells using Patterned Ion Implantation
C. Dube (Varian Semiconductor Associates), D. Buzby (Heraeus Materials Technology LLC), A. Gupta (Varian Semiconductor Associates), R. Low (Varian Semiconductor Associates), J. Mullin (Varian Semiconductor Associates), W. Skinner (Varian Semiconductor Associates), R. Tavares (Heraeus Materials Technology LLC), B. Tsefreakas (Varian Semiconductor Associates), W. Zhang (Heraeus Materials Technology LLC)
- 04:45 pm Photon Management Structures Originated by Interference Lithography
B. Bläsi (Fraunhofer ISE), H. Hauser (Fraunhofer ISE), O. Höhn (Fraunhofer ISE), V. Kübler (Fraunhofer ISE), M. Peters (Fraunhofer ISE), A.J. Wolf (Fraunhofer ISE)

- 05:00 pm Crack Growth in Silicon and Influence on Reliability of Crystalline Silicon Solar Cells and Modules
J. Bagdahn (Fraunhofer CSP), S. Dietrich (Fraunhofer CSP), M. Ebert (Fraunhofer CSP), M. Oswald (Fraunhofer CSP), M. Pander (Fraunhofer CSP), M. Sander (Fraunhofer CSP), S. Schönfelder (Fraunhofer CSP)
- 05:15 pm Poly Less, Ingot Less, Kerf Less Production of < 50 Micron Thick Silicon Wafers, Solar Cells and Modules
K.V. Ravi (Crystal Solar, Inc.), A. Asthana (Crystal Solar, Inc.), V. Gopal (Crystal Solar, Inc.), K. Moyers (Crystal Solar, Inc.), T.S. Ravi (Crystal Solar, Inc.), V. Siva (Crystal Solar, Inc.)
- 05:30 - 06:00 pm **Closing Session**

General Information

Registration

Each participant must register in person at the registration desk to collect a conference bag and name badge before attending any sessions. Please make sure to wear your badge for admission to all sessions and social events. Participants who have lost their badges must report to the registration desk to get a new identification. Registration times are on Sunday, 17th April from 06:00 - 09:00 pm and during the conference hours.

Certificate of Attendance

The certificate of attendance for regular delegates and students will only be available on-site at the registration desk and cannot be issued after the conference.

Poster

The poster area is inside the conference room. Please mount your poster before start of the first poster session or during the first break. Do not remove your poster until the end of the conference. Please remove your poster after the conference before you leave. Remaining posters will be discarded.

Speaker Information

All presentations must be handed in at the Media Upload Desk preferably one day before your presentation. You will not be able to display your presentation directly from your laptop computer or memory stick. Our technical support team will welcome you at the Media Upload Desk during all days of the conference from 7:30 am. Please meet your chairs and co-chairs inside the conference room at least 10 minutes prior to the beginning of your oral session and get familiar with the technical equipment.

Conference Proceedings

The final papers will be published in Energy Procedia, an open-access online platform of Elsevier. After the conference you will receive more information about downloading the final papers by email. For publication in the proceedings, all authors of accepted abstracts should have uploaded their scientific paper to the conference website as a pdf-document before 13th April, at the latest! If you missed this date please go to the Media Upload Desk. Our staff there will help you manage the upload even after the deadline.

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