Program
16th Sede Boqer Symposium
on Solar Electricity Production
February 14 – 16, 2010

Sponsored by:

Ben-Gurion University of the Negev.
Jacob Blaustein Center for Scientific Cooperation.
Israel Ministry of National Infrastructures
Newport - New Technology
Ralco Energy Ltd.
SolarEdge Technologies
Zenithsolar Ltd.
Program

Sunday, February 14, 2010

9:00 – Arrival at the Evens Auditorium, Midreshet Ben-Gurion, Registration & Reception

10:30

10:30-11:00 Opening Greetings
(Chair: Prof. David Faiman, BGU Blaustein Institutes, Sede Boqer)

Prof. Moti Herskowitz
Vice-President and Dean for R&D, Ben-Gurion University of the Negev

Prof. Avigad Vonshak
Director, BGU Blaustein Institutes for Desert Research

Dr. Avraham Arbib
Israel Ministry of National Infrastructures

Dr. Avraham Cohen
Israel Ministry of Science

Mr. Eran Doron
Ramat Negev Regional Council

11:00-12:30 Session 1: Systems I
(Chair: Dr. Avraham Arbib, Israel Ministry of National Infrastructures)

1. A Novel Power Block for CSP Systems
Gur Mittelman
ASP Ltd., Be’er Tuviyya, Israel

2. Full Landscape of Aplanatic Optics for Solar Concentration near the Thermodynamic Limit
Natalia Ostroumov, Jeffrey M. Gordon and Daniel Feuermann
Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion

3. Novel Solar Concentrators from Third-Generation Non-Imaging Optics
Alex Goldstein and Jeffrey M. Gordon
Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion

4. Use of Storage to Enhance Grid-Matching of Photovoltaics
A. A. Solomon, David Faiman and Giora Meron
1Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion; 2Dept. Israel Electric Corp, Haifa

12:30-13:30 Lunch – Dining room, High School for Environmental Studies

13:30-15:00 Session 2: Devices I
(Chair: Prof. Yossi Appelbaum, Tel Aviv University)

1. Absorption Enhancement in Thin Silicon Substrate Using Embedded Metallic Nanoshells
Oren Guilatt, Boris Apter, Isak David, Pavel Fay, and Uzi Efron
1Dept. of Electro-Optical Engineering, Ben-Gurion University, 84105 Beer Sheva; 2Dept.

For updates: http://cmsprod.bgu.ac.il/Eng/conferences/solar/
2. Auger Recombination as the Ultimate Performance-Limiting Mechanism in Concentrator Solar Cells
   **Alexis O. Vossier** and **Jeffrey M. Gordon**
   Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion

3. An Outdoor Method for Quantifying the Spectral Behavior of PV Panels
   **Lior Levy** and **David Faiman**
   Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion

4. Inverter Degradation during 5 years of use in 6 Grid-Connected PV Systems at Sede Boqer
   **Shlomo Gore**, **David Faiman**, and **Herzl Aharoni**
   1Dept. of Electrical Engineering, Ben-Gurion University, 84105 Beer Sheva; 2 Blaustein Institutes for Desert Research, BGU 84990 Midreshet Ben-Gurion.

15:00-15:30 Coffee break

15:30-16:30 Session 3: Invited Keynote Lecture and Discussion
   (Chair: Prof. Aharon Roy, Ben-Gurion University)
   **ISFOC: The Spanish Test Center for Concentrator Photovoltaic Systems**
   - Latest Results
   **Francisca Rubio Berenguel**
   ISFOC S.A.

16:30-17:00 Coffee Break

17:00-18:30 Session 4: Systems II
   (Chair: Prof. Avraham Kribus, Tel Aviv University)
   1. First Results from the MST CPV system at Arad
      **Dov Raviv** and **Roy Rosenstreich**
      MST Ltd., 76701 Rehovot
      **First Results from the Zenithsolar CPV system at Kvutzat Yavneh**
      **Haim Hayat**
      Zenithsolar Ltd., 82000 Kiryat Gat
   2. Grid Matching PV Systems without Storage
      **A. A. Solomon**, **David Faiman**, and **Giora Meiron**
      1Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion; 2 Israel Electric Corp, Haifa
      **Dotan Babai**, **Daniel Feuermann** and **Jeffrey M. Gordon**
      Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion
   4. Solar Photovoltaic Based Hybrid Power Plants with High Clean Energy Output and Grid-Backing Capability
      **Aharon Roy**
      Dept. of Chemical Engineering, Ben-Gurion University, 84105 Beer Sheva

18:30-19:00 Free time, Room assignments

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19:00-20:00 Dinner – Lobby of Institute Guest House
20:30-22:00  Concert – Evens Auditorium

**On Shepherds and Romance**

Sivan Rotem, soprano; Orit Orbach, clarinet; Evgeni Lisogursky, piano

Wolfgang Amadeus Mozart (1756-1791): *Parto, Parto!*
(from the opera *La Clemenza di Tito*) - for voice, clarinet & piano

Konradin Kreutzer (1780-1849): *Das Mühlrad*
- for voice, clarinet & piano

Franz Lachner (1803-1890): 2 songs
- for voice, clarinet & piano

Felix Mendelssohn (1809-1847): *Auf Flügeln des Gesanges*
- for voice & piano

Robert Schumann (1810-1856): *Seit ich ihn gesehen*
- for voice & piano

Louis Spohr (1784-1859): 6 German Songs
- for voice, clarinet & piano

Intermission

Felix Mendelssohn (1809-1847): Sonata in Bb Major
- for clarinet & piano

Giacomo Meyerbeer (1791-1864): *Hirtenlied*
- for voice, clarinet & piano

Franz Schubert (1797-1828) *Das Hirt auf dem Felsen*
- for voice, clarinet & piano

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Monday, February 15, 2010
9:00-10:30  Session 5: Devices II
(Chair: Prof. Enrique Gruenbaum, Tel Aviv University)
1.  *Fundamentally New Aspects of Tunnel Diode Transitions in Multi-Junction Photovoltaics*
   **Avi Braun**¹, Baruch Hirsch¹, Eugene A. Katz¹, Jeffrey M. Gordon¹, Wolfgang Guter² and
   Andreas W. Bett²
   ¹Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben-Gurion;
   ²Fraunhofer-Institut für Solare Energiesystem, 79110 Freiburg, Germany
2.  *CPV Modules based on Monolithic Vertical Multijunction Cells*
   **Gideon Segev**¹, Avraham Kribus¹, R. Pozner¹, Rona Sarfaty² and Yosef Rosenwaks¹
   ¹Faculty of Engineering, Tel Aviv University, 69978 Tel Aviv; ²Electrical and Electronics
   Dept., Ort Braude College, 21982 Karmiel
3.  *Effect of Design and Fabrication Technology on Efficiency of Bifacial Si Solar Cells at Low
    Irradiances*
   **Ygal Eisenberg**, Lev Kreinin, Ninel Bordin, Jacob Broder and Naftali Eisenberg
   Jerusalem College of Technology, 91160 Jerusalem
4.  *SolarEdge – Field Results of Energy Maximizing Distributed DC Topology*
   **Meir Adest**
   SolarEdge Technologies, 45240 Hod Hasharon

10:30-11:00  Coffee Break

11:00-12:30  Session 6: Systems III
Chair: Prof. Daniel Feuermann, Ben Gurion University
1.  *BrightSource Solar Mirror Accelerated Life Test Methodology*
   **Roi Yecheskel**
   BrightSource Israel, 91405 Jerusalem
2.  *Solar Radiation Maps of the Negev*
   **David Faiman**¹ and Daniel Blumberg²
   ¹Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben-Gurion;
   ²Dept. of Geography, Ben-Gurion University, 84105 Beer Sheva
3.  *Grid-Matching of wind and PV/wind Hybrids*
   **A. A. Solomon**¹, David Faiman¹ and Giora Meron²
   ¹Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion;
   ²Israel Electric Corp, Haifa
4.  *Contamination of Solar Collectors by Dust: Effects, Related to Wet Deposition*
   **Sergey Biryukov** and Leonid Yarmolinsky
   Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben-Gurion

12:30-13:30  Lunch – Dining room, High School for Environmental Studies

13:30-15:00  Session 7: Devices III
(Chair: Prof. Moshe Levy, Weizmann Institute of Science)
1.  *Polyselenophenes: A Novel Type of Conducting Polymers with Potential for Applications in
    Organic Solar Cells*
   **Michael Bendikov**
   Dept. of Organic Chemistry, Weizmann Institute of Science, 76100 Rehovot

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2. *Waveguide Enhanced Light Harvesting in Thin Film Photovoltaics*  
**Shlomit Greenwald**, Sven Rühle and Arie Zaban  
Dept. of Chemistry, Bar-Ilan University, 52900 Ramat Gan

**Eugene A. Katz**¹, Thomas Tromholt², Baruch Hirsch¹, Alexis Vossier¹ and Frederik C. Krebs². ¹Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben-Gurion, ²Riso National Laboratory for Sustainable Energy, Technical University of Denmark

4. *Development of Large Area, Glass-based PV Dye Cells and Modules*  
**Jonathan Goldstein**, Ilya Yakupov and Barry Breen  
3GSolar Ltd.

15:00-15:30 Coffee break

15:30-16:30 Session 8: Invited Keynote Lecture and Discussion  
(Chair: Prof. Herzl Aharoni, Ben Gurion University)  
*Thin Film Photovoltaics: On Reaching Adolescence*  
**Timothy J. Coutts**  
EPIR Technologies and National Renewable Energy Laboratory (NREL)

16:30-17:00 Coffee Break

17:00-18:30 Session 9: Energy Saving, Fuel Production, Etc.  
(Chair: Prof. David Faiman, Ben Gurion University)  
1. *Ultrahigh Bioproductivity from Algae*  
**Jeffrey M. Gordon**¹ and Juergen E.W. Polle²  
¹ Jacob Blaustein Institutes for Desert Research, BGU, 84990, Midreshet Ben-Gurion; ² Dept. of Biology, Brooklyn College of the City University of New York, NY, USA

2. *Solar Chemistry: Beyond direct electricity production*  
**Hanna H. Klein**  
EZKlein

3. *The Dynamics of Solar Water Heating Adoption: Comparing Amman and Ramallah*  
**Yaakov Garb**, Sawsan Esse and Evyatar Erell  
Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben-Gurion

4. *Energy Saving vs. Flat-Panel PV*  
**David Faiman**  
Jacob Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben Gurion

Closing Remarks – David Faiman

18:30-19:30 Festive Dinner – Lobby of Institute Guest House

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Tuesday, February 16, 2010

IEA-PVPS Task 8 – An Open Workshop

VLS-PV: Very Large Scale Photovoltaic Power Plants

(Chair: Prof. David Faiman, BGU – Blaustein Institutes)

9:00-9:25 VLS-PV Projects – Success Factors
Edwin Cunow
PV Consultant, Germany

9:25-9:50 Projecting VLS-PV Power Generation Costs
Claus Beneking
Aixcell Solar Technology GmbH, Germany

9:50-10:20 Coffee Break

10:20-10:45 Keynote Lecture
Molecular Photovoltaics and Mesoscopic Solar Cells
Michael Grätzel
Ecole Polytechique Fédérale de Lausanne, Switzerland

10:45-11:10 VLS-PV and Grid Penetration
A. A. Solomon
Blaustein Institutes for Desert Research, BGU, 84990 Midreshet Ben-Gurion

11:10-11:35 Socio-Economic Opportunities with VLS-PV
Peter v. d. Vleuten
Free Energy International, Eindhoven, the Netherlands

11:35-12:00 Solar-Driven Desalination – an Overview
Joachim Kochikowski
Fraunhofer Institute for Solar Energy Systems, ISE, Germany

12:00-12:30 Open Discussion

12:30-13:30 Lunch

13:30 Transportation to Eilat-Eilot Renewable Energies Conference
For more on this conference: http://eilatenergy.org/site
For updates: http://cmsprod.bgu.ac.il/Eng/conferences/solar/
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