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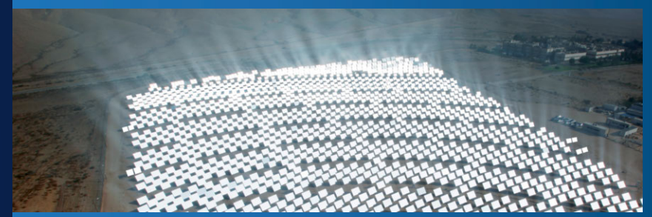
2013 SolarPACES

Concentrating Solar Power
and Chemical Energy Systems

PROGRAM



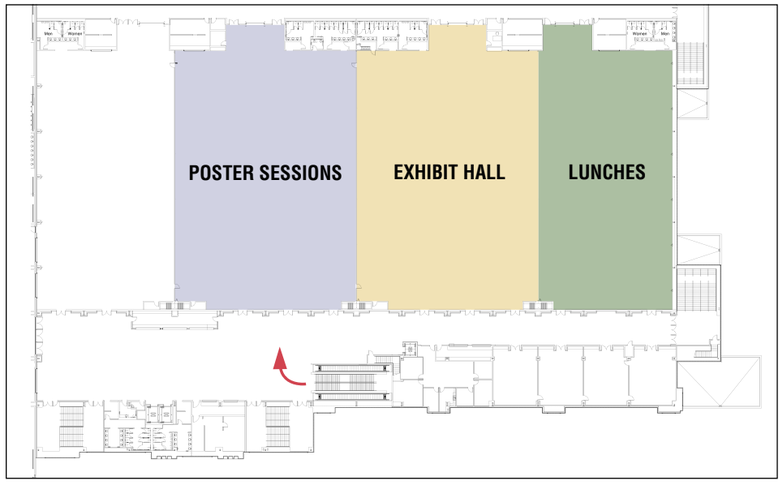
September 17 – 20, 2013
Las Vegas, USA

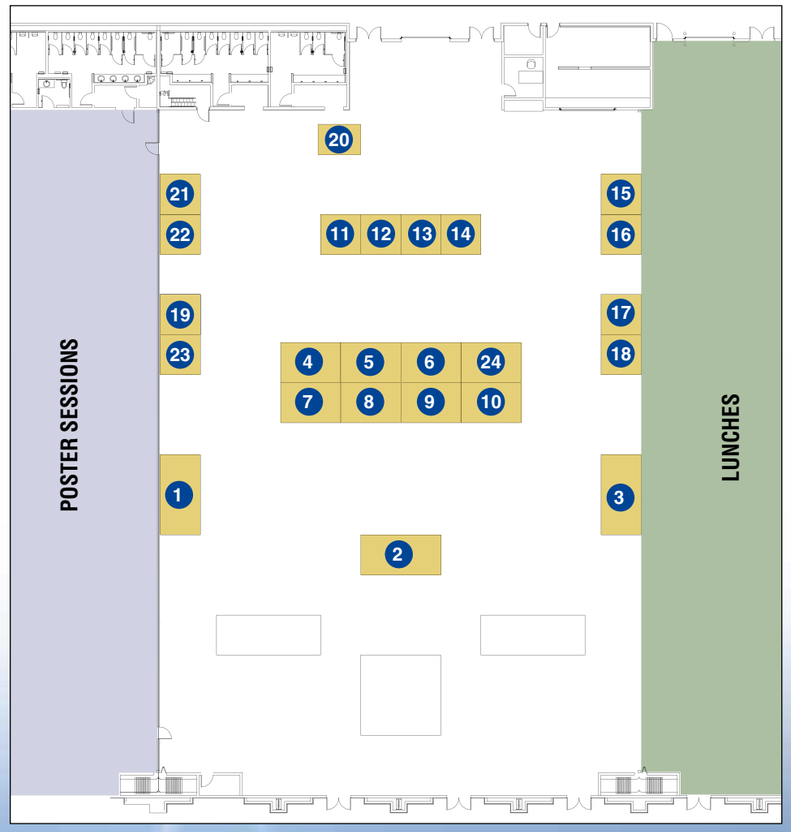
www.solarpaces2013.solarpaces.org

Exhibition Plan

Pavilion

Up the escalator from ballroom





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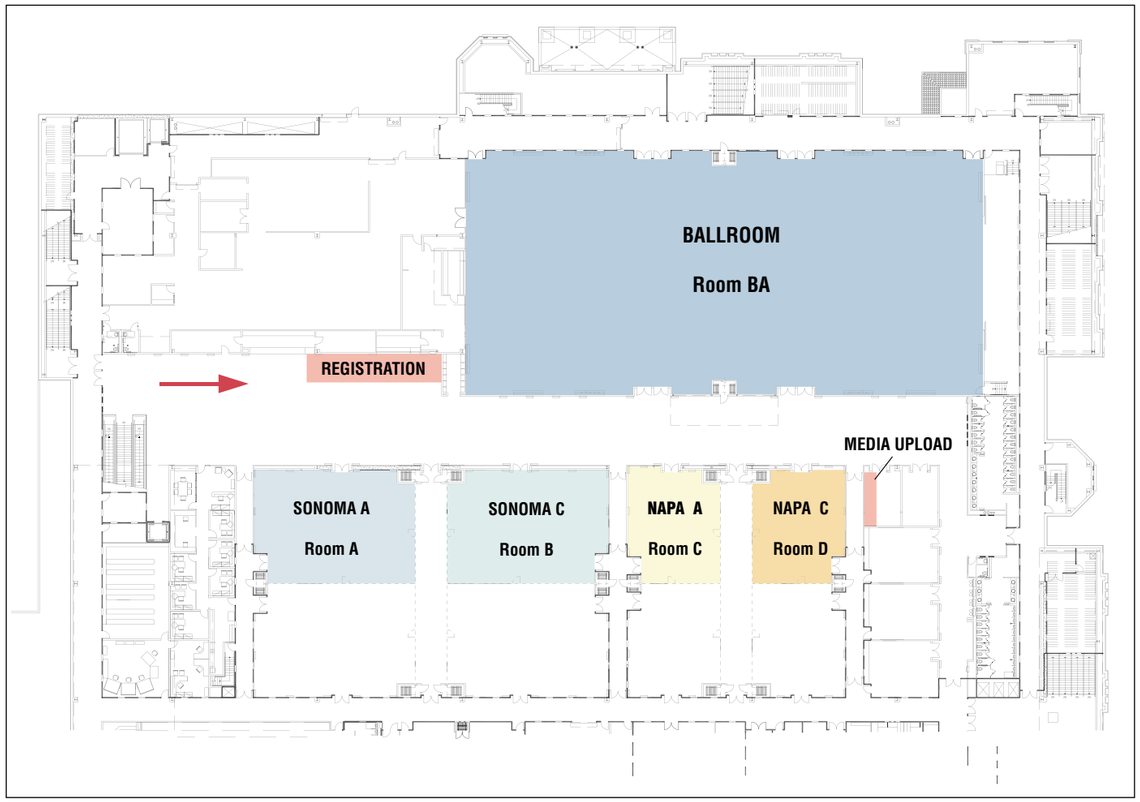
Exhibitors

20. Surface Optics Corporation
21. Hubei Salnner Vacuum Science and Technology Co. Ltd.
22. FLEXIM GmbH
23. SFERA
24. Stellenbosch Consortium & GeoModel Solar s.r.o.

Floor Plan

South Point Conference Center



Pavilion (see page 2)

Poster Sessions, Exhibit Hall, Networking Breaks, Lunches

Room Designation

Room BA	BALLROOM	Plenary Sessions, Conference Banquet and Awards Ceremony
Room A	SONOMA A	Oral Sessions
Room B	SONOMA C	Oral Sessions
Room C	NAPA A	Oral Sessions
Room D	NAPA C	Oral Sessions

Content

To get the latest version of the scientific program on your cell phone please scan the QR-code or enter the URL.
http://cms.solarpaces2013.solarpaces.org/mobile

United States Senate

WASHINGTON, DC 20510–7012

September 17, 2013

Dear Friends:

I am pleased to welcome you to Las Vegas for the SolarPACES 2013 conference. Southern Nevada's abundance of clear sunny days makes it one of the best locations for solar energy in the world, and an ideal location for SolarPACES attendees to collaborate on leading industry advances.

This conference provides a forum to share research developments about concentrating solar power (CSP) and chemical energy systems. CSP technology is helping our country break our dependence on fossil fuels which contribute to climate change. Over the last decade, several important federal and state policies and incentives have helped Nevada and our nation start to realize its enormous clean energy potential.

We must continue to build on our successes in coordinating between all levels of government and the private sector and continue improving the siting, development and financing for clean energy projects. As you know, the American Recovery and Reinvestment Act funded research, incentives, and loan guarantee programs which increased the deployment of concentrating solar power systems. Since that time, several projects have progressed from the drawing board to permitting and construction, while creating thousands of jobs in Nevada and throughout the United States.

The Crescent Dunes Solar Project in Tonopah benefitted from the Department of Energy loan guarantee program, and once completed will generate 110 MW of electricity – enough to power almost 75,000 homes. I hope you take advantage of the opportunities to tour Crescent Dunes and the Ivanpah Solar Electric Generating System south of Las Vegas.

I am steadfast in my commitment to growing Nevada's clean energy future. I wish you a productive conference.

Sincerely,

Harry Reid

United States Senator

Welcome

Dear Colleague,

It is my pleasure to welcome you to the SolarPACES 2013 International Conference. This year's theme is "**Towards Cost-competitive CSP**," and the event highlights the latest advances in research, development and deployment at the forefront of concentrating solar power (CSP) technologies across the globe, with a focus on reducing costs while increasing performance.

The conference program features plenary sessions, keynote talks and technical sessions pertaining to CSP technologies, policy and markets, and commercial projects. Plenary sessions include presentations and panel discussions that offer broad perspectives on: quantifying the value of CSP and thermal energy storage, presented through grid integration analysis as well as from the vantage of the utility industry and the energy commission; global CSP initiatives in research, development and deployment; and a conference thematic plenary on cost reduction opportunities in CSP, discussed by an industry panel. Complementing the plenary sessions are technical keynote talks on solar thermochemistry, CSP systems, and high-efficiency, dry cooled power cycles based on supercritical carbon dioxide as the working fluid. Technical oral and poster sessions, organized into topical areas, offer opportunities for deep dives into specific research and development advances from around the world. SolarPACES 2013 also presents, for the first time, an open access edited proceedings volume of peer-reviewed full-length articles to be published online by Elsevier's *Energy Procedia*.

Several large-scale commercial CSP plants are poised to be commissioned in the United States beginning in 2013, that will collectively more than triple the current capacity. As a culminating event of SolarPACES 2013, attendees will have a unique opportunity to witness a part of this growth through tours of BrightSource Energy's Ivanpah Solar Electric Generating Station, a 377 megawatt (MW) direct steam power tower plant, which will be the largest solar power system in the world upon completion, and SolarReserve's Crescent Dunes Solar Energy Project, a 110 MW power tower plant utilizing advanced molten salt technology with 10 hours of integrated thermal storage.

Your participation greatly enhances the success of SolarPACES 2013 and I invite you to have engaging discussions with the attendees – be it for networking, seeding collaborative ventures or providing technical feedback. I thank the conference organizers and the scientific committee for enabling the foremost international CSP forum of 2013.

With best wishes,

Ranga Pitchumani

Chair, SolarPACES 2013 International Conference

Director, Concentrating Solar Power
SunShot Initiative, U.S. Department of Energy, Washington DC
John R. Jones III Professor of Mechanical Engineering
Virginia Tech, Blacksburg, Virginia

Greetings

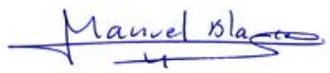
Dear Participants,

SolarPACES, as the Implementing Agreement of the International Energy Agency (IEA) for Solar Power and Chemical Energy Systems, brings together scientists, engineers and administrators from countries and corporations that are pushing the state of the art of thermal solar conversion and part of its mission is to share information about the technical advances in the field. Another important part of its mission is to alert communities, governments and the general public of those advances, of the potential for further improvement, and of the dangers for all of us if this most reasonable of all technologies to convert the most widely distributed and abundant energy resource is not given the priority on which our shared future is likely to depend on the medium term.

The SolarPACES International Conference is one of the most important instruments that SolarPACES has to serve the purposes just mentioned. Because of the quality of its technical sessions and key note speakers, the scope and relevance of the scientific advances being presented and discussed, and the large and diverse number of participants, this conference is without doubt the most important event of the year in the concentrating solar thermal and solar chemistry domains. And you, dear participants, are without doubt the most important factor in guaranteeing the conference's success. It is your interest and engagement in the different topics being discussed at the conference, and your pro-active participation in all conference events, which year after year, makes this conference a very unique and rewarding experience.

As always, we would be proud if you would share our SolarPACES vision that concentrating solar technologies contribute significantly to the delivery of clean, sustainable energy worldwide.

Enjoy the conference!



Manuel J. Blanco, Ph.D., Dr.Ing.

Chair of the SolarPACES Executive Committee.

Dear SolarPACES Participants,

Although around 1 GW of Solar Thermal Electric plants have been connected to the grid since the last SolarPACES Conference, you might have the feeling that our industry is moving too slowly in comparison to PV and Wind. And this is true: Our projects take much longer to be implemented and the current pipeline is very small.

The program in Spain is coming to an end with 2,3 GW and the plants under construction in the USA will soon reach 1,3 GW. In addition several new plants have recently been completed in the UAE and India, while still other large plants are under construction in India, South Africa and Morocco. With project announcements in Saudi Arabia and "expectations" in Chile, China, other MENA countries and Australia, the solar thermal electric outlook is complete.

Given this scenario the Industry and Technology Centers must make an extraordinary effort to follow the learning curve and to reduce the generation cost of these plants below the threshold of 10 c€/kWh before 2020.

Nevertheless I am completely convinced that the other two arguments – besides cost – "Dispatchability" and "Local Content" will contribute to the decisions of policy makers along the Sunbelt countries in favour of Solar Thermal Electric plants. Countries that need to double the firm power installed capacity in the next years must perform a detailed comparison between importing PV panels with the necessary investment in backup combined cycles and constructing STE power plants by their own means to a high extend. Then the decision will become clear automatically.

Big locomotives – USA and, why not, Spain for delivering electricity to central European countries – must keep going for the sake of the technology development. Emerging countries will soon follow, and their industry will take the largest share in their own country.

SolarPACES is playing the role, for many years, of valuable information exchange among all the value chain agents of the sector from around the world. This is surely going to be the case again in Las Vegas.

I wish you a very fruitful conference and an enjoyable stay in our – not silicon but – solar valley, a location so different from our last two "historical" gatherings in Marrakech and Granada.

Dr. Luis Crespo

President of ESTELA

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Conference Topics

- Advanced Manufacturing for CSP
- Commercial and Demonstration Projects
- CSP Systems
- General Topics in CSP
- Grid Integration
- Heat Transfer Fluids
- Measurements and Control
- Policy and Markets
- Power Cycles
- Reliability and Service Life Prediction
- Solar Collectors
- Solar Fuels
- Solar Resource Assessment
- Thermal Receivers
- Thermal/Thermochemical Energy Storage
- Water Desalination and Detoxification

Instructions for Presentations

Oral Presentation

Presentation time and schedule:

- Oral presentations are 20 minutes including about five minutes of discussion time. Please make sure to strictly keep this time limit.

  The time slots for presentations are explicitly mentioned in the conference program.

Presentation upload at the conference:

- All oral presentations must be handed in at the Media Upload Desk at the conference prior to the talk.
- Please hand in and check your presentation well in advance and preferably one hour before your presentation.
- You will not be able to display your presentation directly from your laptop computer or memory stick. All presentations must be uploaded to the conference system in advance.
- Please meet your session chair inside the conference room at least 10 minutes prior to the beginning of your oral session and get familiar with the technical equipment.

Other important things you should pay attention to:

- Please make sure that your presentation and memory stick do not contain computer viruses of any kind. If you hand in an infected memory stick, your presentation will not be loaded and you risk losing the opportunity to present your paper.
- Data protection: Your presentation will be published online in the internal part of the website as PDF only if you have signed the publication agreement. For any questions please refer to the registration desk.

Poster Presentation

Poster layout

- Your poster can be upright/portrait style with a maximum size of:
  US format: width: max. 36 inches, height: max. 56 inches
  or DIN A0 format: width: max. 33 inches (84 cm), height: max. 47 inches (119 cm)

Poster mounting

- Please mount your poster on Tuesday morning, September 17, 2013.
- Please do not remove your poster until the end of the conference. The posters are an important part of the scientific program and should be displayed throughout the conference.
- The poster area is located in the Pavilion (refer to the floor plan on page 2).
- Please remove your poster on Friday, September 20, 2013 before 1:00 pm. Posters not removed by 1:00 pm will be discarded.

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Scientific Program

08:00 am - 10:00 am — Opening Plenary

ROOM: BALLROOM

08:00 am	Ranga Pitchumani – *Chair, SolarPACES 2013; Director, Concentrating Solar Power, SunShot Initiative, U.S. Department of Energy*
08:10 am	Daniel Arvizu – *Director, National Renewable Energy Laboratory*
08:45 am	Jill Hruby – *Vice President of the Energy, Non-Proliferation, and High-consequence Security Division, Sandia National Laboratories*
09:20 am	Luis Crespo – *President, ESTELA*
09:35 am	Manuel Blanco – *Chair, SolarPACES Executive Committee; Solar Thermal Group Leader and Director of the Australian Solar Thermal Research Initiative, CSIRO*
09:50 am	Ranga Pitchumani – *Chair, SolarPACES 2013; Director, Concentrating Solar Power, SunShot Initiative, U.S. Department of Energy*

10:00 am - 10:30 am **Networking Break**

10:30 am - 12:10 pm — Solar Collectors

ROOM: SONOMA A

Chair: Andru Prescod, U.S. Department of Energy

10:30 am	Evaluation of Advanced Heliostat Reflective Facets on Cost and Performance *Julius Yellowhair, Sandia National Laboratories*
10:50 am	Numerical Calculation of Wind Loads over Solar Collectors *Monica Mier-Torrecilla, Abengoa Research SL*
11:10 am	Wind Patterns over a Heliostat Field *Jeremy Sment, Sandia National Laboratories*
11:30 am	Commercial Readiness of eSolar Next Generation Heliostat *Plazi Ricklin, eSolar*
11:50 am	Life Cycle Cost Optimised Heliostat Size For Power Towers *Philipp Schramek, Solar Tower Technologies AG*

10:30 am - 12:10 pm — Solar Fuels

ROOM: SONOMA C

Chair: Tatsuya Kodama, Niigata University

10:30 am	Development of a Molten Salt Reactor for Solar Gasification of Biomass *Brandon Hathaway, University of Minnesota*
10:50 am	Numerical Model for the Chemical Reduction of a Metal Oxide Packed Bed Driven by Concentrated Solar Radiation *Manuel Romero, IMDEA ENERGY*
11:10 am	Advancing Oxide Materials for Thermochemical Production of Solar Fuels *James Miller, Sandia National Laboratories*

TUESDAY

11:30 am	Status of the Solar Sulfur Ammonia Thermochemical Hydrogen Production System for Splitting Water *Robin Taylor, Science Applications Intl Corp*
11:50 am	Nonstoichiometric Perovskite Oxides for Solar Thermochemical H_2 and CO Production *Anthony McDaniel, Sandia National Labs*

10:30 am - 12:10 pm — Thermal Receivers

ROOM: NAPA A

Chair: Eduardo Zarza, CIEMAT-PSA

10:30 am	Linear Fresnel Collector Receiver: Heat Losses and Temperatures *Anna Heimsath, Fraunhofer ISE*
10:50 am	SCHOTT's 4th Generation Receiver – Getting Ready for Higher Operation Temperatures *Tim Gnädig, SCHOTT Solar CSP GmbH*
11:10 am	A Method for Measuring the Optical Efficiency of Evacuated Receivers *Charles Kutscher, NREL*
11:30 am	Laser Induced Release of Encapsulated Noble Gas in SCHOTT Receiver *Oliver Sohr, SCHOTT Solar CSP GmbH*
11:50 am	Effects of Geometry and Material Properties on the Residual Stress of Glass-to-metal Seals in Solar Receiver Tube *Dongqiang Lei, Institute of Electrical Engineering,Chinese Academy of Sciences*

10:30 am - 12:10 pm — CSP Systems

ROOM: NAPA C

Chair: Cedric Philibert, International Energy Agency

10:30 am	On the CFD&HT of the Flow around a Parabolic Trough Solar Collector under Real Working Conditions *Ahmed Amine Hachicha, CTTC/UPC*
10:50 am	Dynamic Simulation of the Operation of a Molten Salt Parabolic Trough Plant, Comprising Draining Procedures *Massimo Falchetta, ENEA*
11:10 am	New Optical Designs for Large Parabolic Troughs *Diogo Canavarro, University of Évora*
11:30 am	Performance of Enclosed Trough OTSG for Enhanced Oil Recovery *Ben Bierman, GlassPoint Solar Inc.*
11:50 am	Scenarios for a South African Peaking CSP System in the Short Term *Cebo Silinga, Stellenbosch University*

12:10 pm - 01:30 pm **Lunch**

TUESDAY

01:30 pm - 02:15 pm — Technical Keynote 1

ROOM: BALLROOM

Chair: Ellen Stechel, Arizona State University

Thermochemical Solar Fuel Production

Christian Sattler - Head, Solar Chemical Engineering Department, German Aerospace Center

02:30 pm - 03:30 pm — Thermal/Thermochemical Energy Storage

ROOM: SONOMA A

Chair: Yogi Goswami, University of South Florida

02:30 pm	Development of an Active PCM Storage Concept Using an Intermediate Fluid Layer *Wolf-Dieter Steinmann, DLR*
02:50 pm	PCM Storage with Integrated Active Heat Pipe *Abraham Kribus, Tel Aviv University*
03:10 pm	Using Encapsulated Phase Change Salts for Baseload Concentrated Solar Power Plant *Anoop Mathur, Terrafore Inc.*

02:30 pm - 03:50 pm — Heat Transfer Fluids

ROOM: SONOMA C

Chair: Joseph Stekli, U.S. Department of Energy

02:30 pm	A New Heat Transfer Fluid for Concentrating Solar Systems: Particle Flow in Tubes *Gilles Flamant, PROMES-CNRS*
02:50 pm	Liquid Metals as Efficient Coolants for High-intensity Point-focus Receivers: Implications to the Design and Performance of Next-generation CSP Systems *Julio Pacio, Karlsruhe Institute of Technology*
03:10 pm	Study on Solid Particles as a Thermal Medium *Clayton Nguyen, Georgia Tech*
03:30 pm	Off-eutectic Binary Salt Finite Volume Method *Elliott Baché, Abengoa Research*

02:30 pm - 03:30 pm — Thermal Receivers

ROOM: NAPA A

Chair: Massimo Falchetta, ENEA

02:30 pm	Towards a Commercial Parabolic Trough CSP System Using Air as Heat Transfer Fluid *Philipp Good, ETH Zurich*
02:50 pm	A Novel CSP Receiver Based on Airlight Energy Technology – Optimization of the Thermal Insulation System by Means of CFD Analysis *Simone A. Zavattoni, SUPSI*
03:10 pm	Modeling and Analysis of Stress in High Temperature Molten Salt Trough Receivers *Nolan Viljoen, SkyFuel Inc.*

02:30 pm - 03:30 pm — CSP Systems

ROOM: NAPA C

Chair: Craig Turchi, National Renewable Energy Laboratory

02:30 pm	Assessment of Direct Steam Generation Technologies for Solar Thermal Augmented Steam Cycle Applications *Cara Libby, EPRI*
02:50 pm	Dynamic Simulations of Fresnel Solar Power Plants *Sylvain Rodat, CEA-INES*
03:10 pm	Levelized Cost of Process Heat for Linear Fresnel Concentrated Solar Systems *Roberto Gabbrielli, University of Pisa*

03:30 pm - 04:15 pm — Networking Break

TUESDAY

04:15 pm - 06:15 pm — Thermal/Thermochemical Energy Storage

ROOM: SONOMA A

Chair: Judith Gomez, National Renewable Energy Laboratory

04:15 pm	Thermochemical Energy Storage in kW-scale Based on $CaO/Ca(OH)_2$ *Marc Linder, DLR*
04:35 pm	Thermochemical Cycle of a Mixed Metal Oxide for Augmentation of Thermal Energy Storage in Solid Particles *Brian Ehrhart, University of Colorado*
04:55 pm	Thermochemical Solar Energy Storage via Redox Oxides: Materials and Reactor/Heat Exchanger Concepts *Stefania Tescari, DLR*
05:15 pm	Simulation and Testing of a Latent Heat Thermal Energy Storage Unit with Metallic Phase Change Materials *Johannes Kotzé, Stellenbosch University*
05:35 pm	Adsorption Study of Silica Gel Particle for Improvement in Design of Adsorption Beds Used in Solar Driven Cooling Units *Pramod Kumar, Indian Institute of Science*
05:55 pm	System Analysis and Testloop Design for the CellFlux Storage Concept *Wolf-Dieter Steinmann, DLR*

04:15 pm - 06:15 pm — Solar Fuels

ROOM: SONOMA C

Chair: Anton Meier, Paul Scherrer Institute

04:15 pm	A Combinatorial Optimization Problem to Control a Solar Reactor *Raquel Diaz Franco, PSA-CIEMAT*
04:35 pm	Carbonate Molten-Salt Absorber/Reformer: Heating and Steam Reforming Performances of Reactor Tubes *Nobuyuki Gokon, Niigata University*
04:55 pm	Solar Demonstration of Thermochemical Two-step Water Splitting Cycle Using CeO_2/MPSZ Ceramic Foam Devices by 45kW_{th} KIER Solar Furnace *Cho Hyun Seok, Niigata University*
05:15 pm	Thermochemical Two-step Water Splitting Cycle Using CeO_2 and Ni-ferrite Coated Ceramic Foam Devices by Concentrated Xe-light Radiation *Nobuyuki Gokon, Niigata University*
05:35 pm	Thermochemical CO_2 and CO_2/H_2O Splitting over $NiFe_2O_4$ for Solar Fuels Synthesis *George Karagiannakis, APTL/CPERI/CERTH*
05:55 pm	Solar Carboreduction of Alumina under Vacuum *Irina Vishnevetsky, Weizmann Institute of Science*

04:15 pm - 06:15 pm — Thermal Receivers

ROOM: NAPA A

Chair: Reiner Buck, German Aerospace Center

04:15 pm	Assessment of the Overall Efficiency of Gas Turbine-driven CSP Plants Using Volumetric Receivers *Pablo Fernández del Campo, San Diego State University*
04:35 pm	Thermal Performance of a Quartz Tube Solid Particle Air Receiver *Fengwu Bai, Institute of Electrical Engineering, Chinese Academy of Sciences*
04:55 pm	Parametric Study of Volumetric Absorber Performance *Abraham Kribus, Tel Aviv University*
05:15 pm	Optimization of Solar Tower Hybrid Pressurized Air Receiver Using CFD and Mathematical Optimization *Ken Craig, University of Pretoria*
05:35 pm	Design and Test of a 600kW_t Receiver for Solar Air Turbine Systems *Alex Burton, CSIRO*
05:55 pm	A Pressurized Air Receiver for Solar-driven Gas Turbines *Peter Pozivil, ETH Zürich*

04:15 pm - 06:15 pm — CSP Systems

ROOM: NAPA C

Chair: Mark Lausten, U.S. Department of Energy

04:15 pm	Dynamic Simulation of a 1MWe Concentrated Solar Power Tower Plant System with Dymola® *JinBai Zhang, Electricity of France (EDF)*
04:35 pm	Towards Holistic Power Tower System Optimization *Gerhard Weinrebe, sbp sonne GmbH*
04:55 pm	Assessment of Improved Molten Salt Solar Tower Plants *Csaba Singer, Institute of Solar Research*
05:15 pm	Guidelines for CSP Yield Analysis – Optical Losses of Line Focusing Systems; Definitions, Sensitivity Analysis and Modeling Approaches *Markus Eck, DLR*
05:35 pm	Probabilistic Analysis of Power Tower Systems to Achieve SunShot Goals *Clifford Ho, Sandia National Laboratories*
05:55 pm	Towards Cost-competitive Solar Towers – Energy Cost Reductions Based on Decoupled Solar Combined Cycles (DSCC) *Javier García-Barberena, CENER*

TUESDAY

6:15 pm - 7:30 pm Poster Session 1

The poster numbers are based on the topics:

A	Advanced Manufacturing for CSP
B	Commercial and Demonstration Projects
C	CSP Systems
D	General Topics in CSP
E	Grid Integration
F	Heat Transfer Fluids
G	Measurements and Control

A-01 Economic Analysis of Vacuum Transmission Tube for Conveying Working Medium of CSP
Mingjun Bai, Hubei Salnner Vacuum Science and Technology Co. Ltd

A-02 Advanced Lead Free High Protective Coatings for Solar Mirrors
Jochem Effing, VALSPAR Industries GmbH

B-01 MAINBOT – Mobile Robots for Inspection and Maintenance in Extensive Industrial Plants
Loreto Susperregi, IK4-Tekniker

B-02 Utility-scale Power Tower Solar Systems: Performance Acceptance Test Guidelines
David Kearney, Kearney & Associates

B-03 Status and First Results of the DUKE Project – Component Qualification of New Receivers and Collectors
Jan Fabian Feldhoff, DLR

B-04 City of Medicine Hat Concentrating Solar Thermal Demonstration Project, Alberta, Canada
Kenneth MacKenzie, Medicine Hat Electric Generation

B-06 District Cooling Using Central Tower Power Plant
Carolina Marugán-Cruz, Carlos III University

C-01 Micromix Combustor for High Temperature CSP Air Brayton Cycle Systems
Klaus Brun, Southwest Research Institute

C-02 CSP Plant Thermal-hydraulic Simulation
Valeria Russo, ENEA

C-03 PSA Vertical Axis Solar Furnace SF5
Jose Rodriguez, CIEMAT-PSA

C-04 Performance Enhancement of a Solar Trough Power Plant by Integrating Tower Collectors
Wei Han, IET, CAS

C-05 A High-temperature, High Efficiency Solar Thermoelectric Generator Prototype
Philip Parilla, NREL

C-06 CSP and PV Solar Tracker Optimization Tool
Hristo Zlatanov, Heliomasters

C-07 Eskom's Solar 1 Project Experience
Viren Heera, Eskom

C-08 Evaluation of Heliostat Field Global Tracking Error Distributions by Monte Carlo Simulations
Camilo A. Arancibia Bulnes, IER-UNAM

C-09 SoFiA – A Novel Simulation Environment for Central Receiver Systems
Christian Gertig, GL Garrad Hassan

C-10 Innovations on Direct Steam Generation in Linear Fresnel Collectors
Javier Muñoz Antón, GIT-UPM

C-11 Comparison of Linear and Point Focus Collectors in Solar Power Plants
Giampaolo Manzolini, Politecnico di Milano

C-12 The Air Circulation of the Solar Power Generation with a Volumetric Air Receiver
Taejun Kim, Daesung Energy

C-13 Design and Testing of a Novel Air-cooled Condenser for Concentrated Solar Power Plants
James Moore, Stokes Research Institute

C-14 Benchmarking of the Optical and Thermal Yield of Novel Central Receiver Design
Philipp Schramek, Solar Tower Technologies AG

C-15 The Influence of the Steam-side Characteristics of a Modular Air-cooled Condenser on CSP Plant Performance
Alan O'Donovan, Stokes Institute

C-16 Mechatronic Platform with 12m² Solar Thermal Concentrator for Rural Power Generation in Africa
Gerro Prinsloo, Stellenbosch University

C-17 Organic Rankine Cycle Power Generation in Small Scale CSP Plants
Diego Maria Albrigo, Turboden Srl

D-01 Sourcing Alternative Waters to Meet Water Demand at Utility-scale Solar Facilities in the Southwest United States
David Murphy, Argonne National Laboratory

D-02 A Novel Approach to Reduce Ray Tracing Simulation Times by Predicting Number of Rays
Sebastian-James Bode, Stellenbosch University

D-03 CHASER: Specific Software for Automatic Characterization of Parabolic-trough Reflectors from Point Cloud Data
Amaia Mutuberria, CENER

D-04 Performance Testing as a Means of Industrial Normalization of Renewable Energy Sources
Shawn Goedeke, McHale Performance

D-05 3D Thermo-structural Analysis of an Absorber Tube of a Parabolic Trough Collector and Effect on Optical Efficiency
Mahmood Yaghoubi, Shiraz University,

D-06 Advances in CSP Simulation Technology in the System Advisor Model
Aron Dobos, NREL

D-07 Development of a Levelised Cost Model for Different CSP Technologies
Nic Allen, E.ON New Build and Technology

D-08 Merit Figures for the Optical Design of CSP Plants
Daniela Fontani, CNR - INO

E-01 The Value of CSP with Thermal Energy Storage in Providing Grid Stability
Jonathan Forrester, BrightSource Energy Inc.

E-02 The Role of the Irradiation Forecasting in the Operation of Solar Plants
Euro Giovanni Cogliani, ENEA

F-01 Experimental Study on Flow and Heat Transfer Characteristics in Stirling Engine Heat Exchangers
Conghui Chen, Zhejiang University

F-02 Liquid Metal Corrosion Testing of Structural Materials
David Frazer, Berkeley

F-03 Impurity Influence in Physico-Chemical and Corrosion Properties of Chilean Solar Nitrates
Angel Gabriel Fernandez Diaz-Carralero, Universidad de Chile (SERC-Chile)

F-04 Characterization of Thermal Fluids for Application in Solar Concentration Plants
Elisabetta Maria Veca, ENEA

G-01 Determination of Tracking Errors with Respect to the Geometrical Errors Based on Optimization Algorithm
Zhifeng Wang, IEECAS

G-02 Dynamic Drift Compensation for Heliostats
Camilo A. Arancibia Bulnes, IER-UNAM

G-03 Carbon Impact Optimization as PLC Control Strategy in Solar Power System Automation
Gerro Prinsloo, Stellenbosch University

G-04 Design and Validation of a Low-cost High-flux Solar Simulator Using Fresnel Lens Concentrators
Wujun Wang, Royal Institute of Technology

G-05 Fast, Compact and Precise Mirror Facet Measurement Based on Autocollimation Principle
Aitor Olarra, IK4-TEKNIKER

G-06 Upgrading of ENEA Solar Mirror Qualification Set-up
Massimo Falchetta, ENEA

G-07 Using Evolutionary Algorithm to Develop a Feed Forward Control for CSP Plant Using Mid and Long Term Storages
Dominik Schlipf, enolcon GmbH

07:30 pm - 09:00 pm Welcome Reception

WEDNESDAY

08:00 am - 10:00 am — Plenary: Value of CSP

ROOM: BALLROOM

08:00 am — Paul Denholm – *Senior Energy Analyst, National Renewable Energy Laboratory*

08:30 am — Cédric Philibert – *Energy and Climate Change Analyst, International Energy Agency*

09:00 am — David Hochschild – *Commissioner, California Energy Commission*

09:15 am — Panel Discussion

Udi Helman – *Senior Advisor, BrightSource Energy, Inc.*

David Hochschild – *Commissioner, California Energy Commission*

Bobby Hollis – *Executive, Renewable Energy, NV Energy*

Elaine Sison-Lebrilla – *Renewable Energy Program Manager, Sacramento Municipal Utility District*

10:00 am - 10:30 am — Networking Break

10:30 am - 12:10 pm — Thermal/Thermochemical Energy Storage

ROOM: SONOMA A – Chair: Manuel Collares-Pereira, Universidade de Évora

10:30 am — A Regenerative Heat Storage System for Central Receiver Technology Working with Atmospheric Air
Antonio Avila-Marin, CIEMAT-PSA

10:50 am — Study of Thermocline Tank Performance in Dynamic Processes and Stand-by Periods with an Analytical Function
Rocío Bayón, CIEMAT-PSA

11:10 am — Experimental Study of Heat Loss from a Thermal Energy Storage System for Use with a High-Temperature Falling Particle Receiver System
Abdelrahman El-Leathy, King Saud University

11:30 am — Experimental Investigation into a Packed Bed Thermal Storage Solution for Solar Gas Turbine Systems
Peter Klein, CSIR

11:50 am — Development of Solid Particle Thermal Energy Storage for Concentrating Solar Power Plants Using Fluidized-bed Technology
Zhiwen Ma, NREL

10:30 am - 12:10 pm — Solar Collectors

ROOM: SONOMA C – Chair: Daniel Chen, 3M Company

10:30 am — Dynamic Performance Evaluation of the HelioTrough® Collector Demonstration Loop – Towards a New Benchmark in Parabolic Trough Qualification
Dr. Eckhard Lüpfert, DLR

10:50 am — Development of an Advanced Large-aperture Parabolic Trough Collector
Patrick Marcotte, Abengoa Solar LLC

11:10 am — A Novel Approach to Parabolic Trough Optimization
Nathan Schuknecht, SkyFuel

11:30 am — Blue Sky Cooling for Parabolic Trough Plants
Evert du Marchie van Voorthuysen, SOLAq BV

11:50 am — Parabolic Trough Surface Form Mapping Using Photogrammetry and its Validation with a Large Coordinate Measuring Machine
Peter King, Cranfield University

10:30 am - 12:10 pm — Policy and Markets

ROOM: NAPA A

Chair: Piero de Bonis, European Commission

10:30 am — Potential Assessment in Mexico for Solar Process Heat Applications in Food and Textile Industries
Carlos Ramos, Instituto de Investigaciones Eléchicas

10:50 am — Assessment of the Impact of Financial and Fiscal Incentives for the Development of Utility-scale Solar Energy Projects in Northern Chile
Jorge Servert del Río, Solar Technology Advisors

11:10 am — CSP's Role in a Diversified Energy Portfolio
Joseph Desmond, BrightSource Energy Inc.

11:30 am — National Incentive Programs for CSP - Lessons Learned
Inaki Perez, Mott MacDonald Group Limited

11:50 am — Optimized Integration of Renewable Energy Technologies into Existing Power Plant Portfolios
Tobias Fichter, DLR

10:30 am - 12:10 pm — CSP Systems

ROOM: NAPA C

Chair: Nathan Siegel, Bucknell University

10:30 am — Dual-pressure Air Receiver Cycle for Direct Storage Charging
Lukas Heller, Stellenbosch University

10:50 am — Advanced Thermal Energy Storage System with Novel Molten Salt
Matthieu Jonemann, Halotechnics Inc.

11:10 am — eSolar's Modular, Scalable Molten Salt Power Tower Reference Plant Design
Craig Tyner, eSolar Inc.

11:30 am — Transient Simulation of a Solar-hybrid Tower Power Plant with Open Volumetric Receiver at the Location Barstow
Christoph Rau, Solar-Institut Jülich

11:50 am — Theoretical and Experimental Investigations Regarding Open Volumetric Receivers of CRS
Timm Achenbach, Solar-Institut Jülich

12:10 pm - 01:30 pm — Lunch

WEDNESDAY

01:30 pm - 02:15 pm — Technical Keynote 2

ROOM: BALLROOM

Chair: Robert Pitz-Paal, German Aerospace Center

Solar-Thermal Power Generation - A Reality Check

Jacob Karni - Professor and Director of the Center for Energy Research, Weizmann Institute of Science

02:30 pm - 03:30 pm — Thermal/Thermochemical Energy Storage

ROOM: SONOMA A

Chair: Justin Raade, Halotechnics

02:30 pm — Coil Wound Heat Exchangers for Molten Salt Applications
Markus Weikl, Bertrams Heatec AG

02:50 pm — Foundation and Internal Temperature Measurements of an Experimental Molten Salt Storage Tank
Margarita M. Rodríguez-García, PSA-Ciemat

03:10 pm — Corrosion of Iron Stainless Steels in Molten Nitrate Salt
Alan Kruizenga, Sandia National Laboratories

02:30 pm - 03:30 pm — Solar Collectors

ROOM: SONOMA C

Chair: Yoel Gilon, BrightSource Industries Israel, Ltd.

02:30 pm — Study of Different Cleaning Methods for Solar Reflectors Used in CSP Plants
Aránzazu Fernández-García, CIEMAT-Plataforma Solar de Almería

02:50 pm — Issues with Beam-Down Concepts
Lorin Vant-Hull, University of Houston

03:10 pm — Cross Linear Solar Concentration System for CSP and CPV
Yutaka Tamaura, Tokyo Institute of Technology

02:30 pm - 03:30 pm — Thermal Receivers

ROOM: NAPA A

Chair: Alan Weimer, University of Colorado

02:30 pm — CFD Analysis of a Receiving Cavity Suitable for a Novel CSP Parabolic Trough Receiver
Simone A. Zavattoni, SUPSI

02:50 pm — Lab-scale Experimentation and CFD Modeling of a Small Particle Heat Exchange Receiver
Lee Frederickson, San Diego State University

03:10 pm — CFD Analysis of the Effects of Turbulence Models on the Computed Heat Loss in the Solar Two Power Tower
Roberto Zanino, Politecnico di Torino

02:30 pm - 03:30 pm — CSP Systems

ROOM: NAPA C

Chair: Craig Tyner, eSolar, Inc.

02:30 pm — Numerical Simulation of Wind Loads and Wind Induced Dynamic Response of Heliostats
Chuncheng Zang, Institute of Electrical Engineering, Chinese Academy of Sciences

02:50 pm — On Using a Gradient-based Method for Heliostat Field Optimisation
Shanley Lutchman, Stellenbosch University

03:10 pm — Measurements of Mirror Soiling at a Candidate CSP Site
Lufuno Vhengani, CSIR

03:30 pm - 04:15 pm — Networking Break

PROGRAM OVERVIEW

Tuesday
September 17, 2013

	Room A	Room B	Room C	Room D
8:00 am	Opening Plenary (ROOM: BALLROOM)			
10:00 am	Networking Break			
10:30 am	Solar Collectors	Solar Fuels	Thermal Receivers	CSP Systems
11:40 am				
12:10 pm	Lunch			
1:30 pm	Technical Keynote 1: (ROOM: BALLROOM)			
2:15 pm				
2:30 pm	Thermal/ Thermochemical Energy Storage	Heat Transfer Fluids	Thermal Receivers	CSP Systems
3:30 pm	Networking Break			
4:15 pm	Thermal/ Thermochemical Energy Storage	Solar Fuels	Thermal Receivers	CSP Systems
6:15 pm	Poster Session 1			
7:30 pm	Welcome Reception			
9:00 pm				
10:30 pm				

Wednesday
September 18, 2013

	Room A	Room B	Room C	Room D
8:00 am	Plenary: Value of CSP (ROOM: BALLROOM)			
10:00 am	Networking Break			
10:30 am	Thermal/ Thermochemical Energy Storage	Solar Collectors	Policy and Markets	CSP Systems
11:40 am				
12:10 pm	Lunch			
1:30 pm	Technical Keynote 2: (ROOM: BALLROOM)			
2:15 pm				
2:30 pm	Thermal/ Thermochemical Energy Storage	Solar Collectors	Thermal Receivers	CSP Systems
3:30 pm	Networking Break			
4:15 pm	Thermal/ Thermochemical Energy Storage	Solar Collectors	Thermal Receivers	General Topics in CSP
6:15 pm	Poster Session 2			
7:30 pm	Conference Banquet and Awards Ceremony			
9:00 pm				
10:30 pm				

Thursday
September 19, 2013

	Room A	Room B	Room C	Room D
8:00 am	Plenary: Global CSP Initiatives (ROOM: BALLROOM)			
10:00 am	Networking Break			
10:30 am	Solar Resource Assessment	Measurements and Control	Commercial and Demonstration Projects	Power Cycles
11:40 am				
12:10 pm	Lunch			
1:30 pm	Technical Keynote 3: (ROOM: BALLROOM)			
2:15 pm				
2:30 pm	Solar Resource Assessment	Measurements and Control	Thermal Receivers	Power Cycles
3:30 pm	Networking Break			
4:15 pm	Solar Resource Assessment	Measurements and Control	Thermal Receivers	Reliability and Service Life Prediction
6:15 pm	Poster Session 3			

Shuttle buses to Downtown Las Vegas

(from 7:30 pm until 12 midnight, drop-off and pick-up at the Paris Hotel)

Friday
September 20, 2013

	Room A	Room B	Room C	Room D
8:00 am	Plenary: Cost Reduction Challenges and Approaches in CSP (ROOM: BALLROOM)			
10:00 am	Networking Break			
10:30 am	Thermal/ Thermochemical Energy Storage	Measurements and Control	CSP Systems	Reliability and Service Life Prediction
11:40 am	Closing Plenary (Room: Ballroom)			
12:10 pm	Lunch			

For information on Technical Tours see page 40

Room Designation

Room A	SONOMA A
Room B	SONOMA C
Room C	NAPA A
Room D	NAPA C

see Floor Plan on page 47

WEDNESDAY

04:15 pm - 06:15 pm — Thermal/Thermochemical Energy Storage

ROOM: SONOMA A

Chair: Robert Wegeng, Pacific Northwest National Laboratory

04:15 pm	Process Simulation for Solar Steam and Dry Reforming *Sven Kluczka, Solar-Institut Jülich*
04:35 pm	Applications of the sandTES System for Various Types of Solar Thermal Power Plants *Karl Schwaiger, TU Vienna*
04:55 pm	Physical Properties of Solid Particle Thermal Energy Storage Media for Concentrating Solar Power Applications *Nathan Siegel, Bucknell University*
05:15 pm	Numerical Study of a Structured Thermocline Storage Tank Using Vitrified Waste as Filler Materials *Fabrice Motte, CNRS - PROMES*
05:35 pm	Numerical Investigation of a High Temperature Stratified Storage with Integrated Steam Generator *Bernhard Seubert, Fraunhofer ISE*
05:55 pm	Molten Oxide Glass Materials for Thermal Energy Storage *Benjamin Elkin, Halotechnics Inc.*

04:15 pm - 06:35 pm — Solar Collectors

ROOM: SONOMA C

Chair: Bruce Kelly, Abengoa Solar

04:15 pm	Going Further with Fresnel Receiver: New Design for Direct Steam Generation *Javier Muñoz-Antón, GIT-UPM*
04:35 pm	Direct Steam Generation in Parabolic Trough Collectors *Cristina Prieto, Abengoa Solar New Technologies*
04:55 pm	A Comparison of Polymer Film and Glass Collectors for Concentrating Solar Power *Christopher Sansom, Cranfield University*
05:15 pm	AIMFAST Generalization: Alignment Tool for Arbitrary Dish *Charles Andraka, Sandia National Laboratories*
05:35 pm	Ultimate Trough® – A Significant Step towards Cost-competitive CSP *Timo Richert, Flabeg GmbH*
05:55 pm	Effect of Sand Deposition on Heat Transfer in an Open Volumetric Air Receiver *Rajiv Shekhar, IIT Jodhpur*
06:15 pm	Advanced CFD&HT Numerical Modelling of Solar Tower Receivers *Guillem Colomer, CTTC UPC*

04:15 pm - 06:15 pm — Thermal Receivers

ROOM: NAPA A

Chair: Asegun Henry, Georgia Institute of Technology

04:15 pm	Experimental Results of Gradual Porosity Wire Mesh Absorber for Volumetric Receivers *Antonio Avila-Marin, CIEMAT-PSA*
04:35 pm	Proof of Concept Test of a Centrifugal Particle Receiver *Lars Amsbeck, DLR*
04:55 pm	High-temperature Fluidized Receiver for Concentrated Solar Radiation by Beam-down Reflector System *Koji Matsubara, Niigata University*
05:15 pm	Optimization of High Temperature Volumetric Solar Absorber Made of Silicon Carbide Ceramic Foam *Sébastien Mey, PROMES-CNRS Laboratory*
05:35 pm	Technology Advancements for Next Generation Falling Particle Receivers *Clifford Ho, Sandia National Laboratories*
05:55 pm	Ultra-refractory Diboride Ceramics for Solar Plant Receivers *Luca Mercatelli, CNR-INO*

04:15 pm - 06:15 pm — General Topics in CSP

ROOM: NAPA C

Chair: Carlos Ramos, Instituto de Investigaciones Eléctricas

04:15 pm	Analysis of the Distribution of Measured and Synthetic Yearly DNI Time Series and its Effect on the Expected Production on a Parabolic Trough Plant *Manuel A. Silva, University of Seville*
04:35 pm	Operability, Reliability and Economic Benefits of CSP with Thermal Energy Storage: First Year of Operation of ANDASOL 3 *Frank Dinter, Stellenbosch University*
04:55 pm	An Innovative Software for Analysis of Sun Position Algorithms *Peter Armstrong, Tietronix Software Inc.*
05:15 pm	Analysis of East-West and North-South Oriented CSP Plant Production and Land Usage Characteristics *Alex Loosen, Lahmeyer International GmbH*
05:35 pm	Performance Analysis of Offshore Solar Power Plants *Christian Diendorfer, Vienna University of Technology*
05:55 pm	Competitive Parabolic Trough Plants Based on New Developments *Sergio Relloso, SENER Ingeniería y Sistemas*

WEDNESDAY

6:15 pm - 7:30 pm Poster Session 2

The poster numbers are based on the topics:

H	Policy and Markets
I	Power Cycles
J	Reliability and Service Life Prediction
K	Solar Collectors
L	Solar Fuels
M	Solar Resource Assessment

H-01 Road Map for Solar Energy Development in Uzbekistan
Jorge Servert, Solar Technology Advisors

H-02 Quality Function Deployment Analysis for the Selection of Utility-scale Solar Energy Projects in Northern Chile
Jorge Servert, Solar Technology Advisors

I-01 Dynamic Modeling of Concentrated Solar Power Plant with the ThermoSysPro Library (Parabolic Trough Collectors, Fresnel Reflector and Solar-Hybrid)
Baligh El Hefni, EDF R&D

I-02 Design of a New Medium-temperature Stirling Engine for Distributed Solar Cogeneration Applications
Fabrizio Alberti, Fondazione Bruno Kessler

I-03 Synergies of Concentrating Solar Power and Geothermal Power Generation
Juergen H. Peterseim, University of Technology Sydney

I-04 A Systematic Comparison on Power Block Efficiencies for CSP Plants with Direct Steam Generation
Tobias Hirsch, DLR

I-05 Second Law Analysis of a Solar Methane Reforming System
Robert Wegeng, Pacific Northwest National Lab

I-06 Solar Tower-biomass Hybrid Plants – Maximizing Plant Performance
Juergen H. Peterseim, University ofTechnology Sydney

I-07 Performance Comparison of Steam Rankine Cycle and CO_2 Based Cycles for CSP
Pramod Kumar, Indian Institute of Science

I-08 Advanced Hybrid Solar Tower Combined-cycle Power Plants
James Spelling, Royal Institute of Technology

I-09 Supercritical CO_2 Cycles Offer Experience Curve Opportunity to CST in Remote Area Markets
Hal Gurgenci, The University of Queensland

I-10 Theoretical Analysis of the Combination of CSP with a Biomass CHP-plant Using ORC-technology in Central Europe
Roland Sterrer, Institute of Renewable Energy

J-01 Unique Challenges in the Design and Operation Philosophy of Solar Thermal Power Plant
Rahul Terdalkar, Alstom Power Inc.

K-01 Development of an Autonomous Light-weight Heliostat with Rim Drives: Wind Load Reduction
Andreas Pfahl, DLR

K-02 Placement of Heliostats on an Uneven Surface
Evangelos Scouros, Nur Energie

K-03 Optical Characterization Parameters for Line-focusing Solar Concentrators: Measurement Procedures and Extended Simulation Results
Pedro Horta, University of Évora - BES RE

K-04 Performance Analysis of Flat Heat Pipe Receiver with Thermal Storage in Solar Power Tower Plant
Lanlan Tao, Nanjing University of Technology

K-05 EASY: An Innovative Design for Cost Effective Heliostats/Solar Fields
Ana Monreal, CENER

K-06 Establishing Bankability for High Performance, Cost Reducing SkyTrough Parabolic Trough Solar Collector
Alison Mason, SkyFuel Inc.

K-07 Optical Performance of a Heliostat in the DAHAN Solar Power Plant
Zhifeng Wang, IEECAS

K-08 PTTL – A Life-size Test Loop for Parabolic Trough Collectors
Javier León Alonso, CIEMAT-PSA

K-09 Selective Coatings for New Concepts of Parabolic Trough Collectors
Javier Barriga, IK4-TEKNIKER

K-10 Parabolic Mirrors for 100 m-long Parabolic Trough in Beijing Badaling Solar Power Test Plant
Zang Chun Cheng, IEECAS

K-11 A New High Sensitivity and Low Cost Solution for the Measurement of Reflectivity Loss due to Dust Deposition in Solar Collectors
Roberto Calvo, IK4-TEKNIKER

K-12 System Performance and Design Considerations for Low Pressure (LP) Solar Water Heating (SWH) Systems in South Africa
Oelof de Meyer, University of Cape Town

K-13 Influence of Canting Mechanism and Facet Profile on Heliostat Field Performance
Willem Landman, University of Stellenbosch

K-14 A New Small Parabolic Trough Collector System Based on the Roof
Jianhan Zhang, IEE-CAS

K-15 Heliostat Cost Reduction – Where to Now?
Joe Coventry, Australian National University

K-16 Optical Performance of a Mini Solar Thermal Concentrated Collector for Integration in Buildings
David Rodriguez Sanchez, RMIT

L-01 Initial Experimental and Theoretical Investigation of Solar Molten Media Methane Cracking for Hydrogen Production
Stephanie Trottier, Alberta Innovates-Technology

L-02 Solar Hydrogen by High-temperature Electrolysis: Flowsheeting and Experimental Analysis of a Tube-type Receiver Concept for Superheated Steam Production
Dennis Thomey, DLR

L-03 Kinetics of Thermal Reduction Step of Thermochemical Two-step Water Splitting Using CeO_2 Particles: Master-plot method for Analyzing Non-isothermal Experiments
Nobuyuki Gokon, Niigata University

L-04 Solar Powered Steam-methane Reformer Economics
Daryl Brown, Pacific Northwest National Lab

L-05 Annual Average Efficiency of a Solar Thermo-chemical Reactor
Ivan Ermanoski, Sandia National Laboratories

L-06 Flux Measurement of a New Beam-Down Solar Concentrating System in Miyazaki for Demonstration of Thermochemical Water Splitting Reactors
Tatsuya Kodama, Niigata University

M-01 CSP Sites Suitability Analysis in the Eastern Region of Morocco
Ahmed Alami Merrouni, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

M-02 Meteorology Resource Forecast with Very Low Periodicity
Ibon Benat Salbidegoitia, Meteo for Energy

M-03 Towards a Verified DNI Map for South Africa
Adriaan Meyer, GeoSUN Africa

M-04 The Effect of Dust on Solar Photovoltaic Systems
Felipe Mejia, UC San Diego

M-05 Estimating DNI and CSP Potential for Chile by Using Satellite Data and Ground Station Measurements – *Rodrigo Escobar, PUC Chile*

M-06 Quantifying Spatial Uncertainty in Solar Plant Testing – *Dudley Benton, McHale Performance*

M-07 Estimating Solar Radiation from MODIS Data
Gabriel López, Universidad de Huelva

M-08 Beam Solar Irradiation Assessment for Sonora, Mexico – *Camilo A. Arancibia Bulnes, IER-UNAM*

M-09 Assessment of a Global-to-direct Empirical Model for the Long-term Characterization of Direct Normal Insolation
Sara Moreno, AICIA

M-10 DNI, GHI and DHI Ground Measurements in Doha, Qatar – *Daniel Perez Astudillo, QEERI*

M-11 Ground-measurement GHI Map for Qatar
Daniel Astudillo, QEERI

M-12 Solar Resource Valuation for Project Sites
Susan Walzer, BrightSource Industries Israel

07:30 pm - 10:30 pm Conference Banquet and Awards Ceremony

THURSDAY

08:00 am - 10:00 am — Plenary: Global CSP Initiatives

ROOM: BALLROOM

08:00 am	Dana Younger – *Chief Renewable Energy Specialist, International Finance Corporation*
08:30 am	Manuel Blanco – *Solar Thermal Group Leader and Director of the Australian Solar Thermal Research Initiative, CSIRO*
09:00 am	Piero de Bonis – *CSP Research Programme Officer, European Commission*
09:30 am	Ranga Pitchumani – *Director, Concentrating Solar Power, SunShot Initiative, U.S. Department of Energy*

10:00 am - 10:30 am **Networking Break**

10:30 am - 12:10 pm — Solar Resource Assessment

ROOM: SONOMA A

Chair: AJ Meyer, GeoSUN Africa

10:30 am	Generation of Series of High Frequency DNI Years Consistent with Annual and Monthly Long-term Averages Using Measured DNI Data *Carlos Fernández-Peruchena, CENER*
10:50 am	Field Experiences with the Operation of Solar Radiation Resource Assessment Stations in India *Indradip Mitra, GIZ GmbH*
11:10 am	Intercomparison of Solar Maps Derived from an Ensemble-ANN Model and a Semiempirical Model for a Desert Environment *Gwendalyn Bender, 3TIER*
11:30 am	APOLLO Cloud Product Statistics *Etienne Wey, TRANSVALOR S.A.*
11:50 am	Long-term Behavior, Accuracy and Drift of LI-200 Pyranometers as Radiation Sensors in Rotating Shadowband Irradiometers (RSI) *Norbert Geuder, CSP Services*

10:30 am - 12:10 pm — Measurements and Control

ROOM: SONOMA C

Chair: Charles Andraka, Sandia National Laboratories

10:30 am	How to Maximize the Output of a Given Power Plant: Implementation of an Operation Assistance System in a Solar Power Tower *Felix Nolteernsting, IRT - RWTH Aachen University*
10:50 am	Analysis of Parabolic Trough Concentrator Mirror Shape Accuracy in Different Measurement Setups *Siw Meiser, DLR*
11:10 am	Development and Test Results of a Calorimetry Technique Enabling Fluid Properties Independent HFT Energy Content Measurement *João Marchã, University of Évora*
11:30 am	Comparison of 3 Heat Flux Gauges and a Water Calorimeter for Concentrated Solar Irradiance Measurement *Emmanuel Guillot, CNRS-PROMES*
11:50 am	Performance Increase by Geometric Quality Control and Specifications for Parabolic Trough Solar Fields *Klaus Pottler, CSP Services*

10:30 am - 12:10 pm — Commercial and Demonstration Projects

ROOM: NAPA A

Chair: Luis Crespo, European Solar Thermal Electricity Association

10:30 am	ULTIMATE TROUGH® – Fabrication, Erection and Commissioning of the World's Largest Parabolic Trough Collector *Axel Schweitzer, sbp sonne GmbH*
10:50 am	India's First Solar Thermal Parabolic Trough Power Plant *Arvind Sastry Pidaparthi, Abengoa*
11:10 am	Solugas – Operation Experience of the First Solar Hybrid Gas Turbine System at MW Scale *Manuel Gallas Torreira, Abengoa Solar New Technologies*
11:30 am	Solar Hybrid Coal-fired Power Plant in China *Hong Hui, Chinese Academy of Sciences*
11:50 am	Solar Enhanced Oil Recovery Plant in Amal, Oman *Ben Bierman, GlassPoint Solar Inc.*

10:30 am - 12:10 pm — Power Cycles

ROOM: NAPA C

Chair: Shane Coogan, Southwest Research Institute

10:30 am	Parametric Study of Supercritical Rankine Cycle and Earth-air-heat-exchanger for Low Temperature Power Generation *Rachana Vidhi, University of South Florida*
10:50 am	Installation and Operation of Parabolic Trough Organic Rankine Cycle Solar Thermal Power Plant in South Louisiana *Jonathan Raush, University of Louisiana at Lafayette*
11:10 am	Adaptation of a Direct Steam Solar Tower Plant with Molten Salt Storage for Optimum Value Creation Under Different Incentive Schemes *Vipluv Aga, Alstom Power*
11:30 am	Techno-economic Analysis of Enhanced Dry Cooling for CSP *Massimo Moser, DLR*
11:50 am	Hybridization of Parabolic Trough Power Plants with Natural Gas *Tobias Vogel, University of Duisburg-Essen*

12:10 pm - 01:30 pm **Lunch**

THURSDAY

01:30 pm - 02:15 pm — Technical Keynote 3

ROOM: BALLROOM

Chair: Wes Stein, CSIRO

Development of a High Efficiency Hot Gas Turbo-expander and Low Cost Heat Exchangers for Optimized CSP Supercritical CO_2 Operation

Jeffrey Moore - Manager, Rotating Machinery Dynamics Section, Southwest Research Institute

02:30 pm - 03:30 pm — Solar Resource Assessment

ROOM: SONOMA A

Chair: Manuel Blanco, CSIRO

02:30 pm — Monitoring of Mirror and Sensor Soiling with TraCS for Improved Quality of Ground Based Irradiance Measurements
Fabian Wolfertstetter, DLR

02:50 pm — Potential of Concentrating Solar Power in Canada
Reda Djebbar, Natural Resources Canada

03:10 pm — Modeling of Irradiance Attenuation from a Heliostat to the Receiver of a Solar Central Tower
Zaid Tahboub, Masdar

02:30 pm - 03:30 pm — Measurements and Control

ROOM: SONOMA C

Chair: Peter Heller, German Aerospace Center

02:30 pm — On Measurement and Characterization of Average Solar Field Mirror Reflectance in Utility-scale Parabolic Trough Plants Part 1: Development of Reflectance Model and Solar Field Measurement Procedure
Guangdong Zhu, NREL

02:50 pm — On Measurement and Characterization of Average Solar Field Mirror Reflectance in Utility-scale Parabolic Trough Plants Part 2: Implementation to a State-of-the-art Parabolic Trough Plant
Guangdong Zhu, NREL

03:10 pm — A New Instrument for Measuring the Reflectance Distribution Function of Solar Reflector Materials
Stephanie Meyen, DLR

02:30 pm - 03:30 pm — Thermal Receivers

ROOM: NAPA A

Chair: Paul Gauché, Stellenbosch University

02:30 pm — CRS Sales: Abengoa's Molten Salt Pilot Power Tower Plant Celebrates One Year of Uninterrupted Operation
Cristina Montero, Abengoa Solar New Technologies

02:50 pm — Transient Analysis of a Molten Salt Cavity Receiver
Qiangqiang Zhang, Institute of Electrical Engineering

03:10 pm — Materials Used in Solar Receptors in Central Tower Thermo-solar Plants; A Review
Laura Guadalupe Ceballos Mendivil, Universidad de Sonora

02:30 pm - 03:30 pm — Power Cycles

ROOM: NAPA C

Chair: David Gill, Sandia National Laboratories

02:30 pm — Supercritical Carbon Dioxide Power Cycle Designs for CSP Applications
Ty Neises, NREL

02:50 pm — Solar-only Parabolic Trough Plants with High Steam Parameters
Jürgen Dersch, DLR

03:10 pm — Simulation of a Hybrid Solar Gas-turbine Cycle
Benjamin Grange, CNRS-PROMES

03:30 pm - 04:15 pm — Networking Break

THURSDAY

04:15 pm - 06:15 pm — Solar Resource Assessment

ROOM: SONOMA A

Chair: Christoph Richter, German Aerospace Center

04:15 pm	A Solar Radiation Prediction System Based on a Multi-model Scheme *Martín Gastón, CENER*
04:35 pm	Cloud Cover Estimation Using Ground-based Camera Images *Remi Chauvin, PROMES-CNRS*
04:55 pm	Atmospheric Turbidity Forecasting Using Side-by-side ANFIS *Chauvin Rémi, PROMES-CNRS*
05:15 pm	Comparison of Solar Power Output Forecasting Performance of the Total Sky Imager and the University of California, San Diego Sky Imager *Bryan Urquhart, UC San Diego*
05:35 pm	Prediction of Cloudiness to Short Time Using Techniques of Remote Sensing and Imagery Processing *Joaquín Alonso Montesinos, Universidad de Almería*
05:55 pm	Assessing the Effects of Climate and Geographical Location on Heliostat Field Efficiency for a Central Tower in Brazil *José Miguel Cardemil, Universidad Diego Portales*

04:15 pm - 06:15 pm — Measurements and Control

ROOM: SONOMA C

Chair: Charles Kutscher, National Renewable Energy Laboratory

04:15 pm	Model Predictive Control System for a Solar-thermal Reactor with Image-based DNI Forecasting *Maria Elizabeth Saade Saade, University of Colorado*
04:35 pm	Optical Characterization Test Campaign of CTAER's Variable Geometry Central Receiver Test Facility *Manuel Silva, CTAER*
04:55 pm	Charcacterization of High Temperature Solar Thermal Selective Absorber Coatings at Operation Temperature *Doug Podzemny, SCHOTT Solar CSP GmbH*
05:15 pm	Enhancements in High-resolution Slope Deviation Measurement of Solar Concentrator Mirrors *Christian Weber, CSP Services*
05:35 pm	A Novel Portable Device to Measure Transmittance and Reflectance of Parabolic Trough Receiver Tubes in the Field *Guillermo Espinosa, Abengoa Solar New Technologies*
05:55 pm	Uncertainty Analysis of Heliostat Alignment at the Sandia Solar Field *John Pye, Australian National University*

04:15 pm - 06:15 pm — Thermal Receivers

ROOM: NAPA A

Chair: Clifford Ho, Sandia National Laboratories

04:15 pm	Thermal Modeling of a Near Blackbody Receiver Design for Concentrating Solar Power Generation *Austin Fleming, Utah State University*
04:35 pm	Experimental and Numerical Analysis of the Heat Transfer Characteristics in Solar Thermal Absorber Tubes with Circumferentially Non-uniform Heat Flux *Chun Chang, Institute of Electrical Engineering,Chinese Academy of Sciences*
04:55 pm	Dome Window and Mount Design for a 5 MW_{th} Solar Receiver *E-Fann Saung, San Diego State University*
05:15 pm	Optical Characterization and Modeling of Coatings Intended as High Temperature Solar Selective Absorbers *Audrey Soum-Glaude, CNRS-PROMES*
05:35 pm	Design Space Exploration of a 5 MW_{th} Small Particle Solar Receiver *Pablo Fernández del Campo, San Diego State University*

04:15 pm - 06:15 pm — Reliability and Service Life Prediction

ROOM: NAPA C

Chair: Candace Pfefferkorn, U.S. Department of Energy

04:15 pm	The Degradation of Solar Thermal Absorption Coatings *Xiaojing Wang, GRINM*
04:35 pm	Correlation between Solar Mirror Degradation and Colorimetric Measurement of Protective Back Layer *Olivier Raccurt, CEA LITEN*
04:55 pm	Study of the Effect of Acid Atmospheres in Solar Reflectors Durability under Accelerated Aging Conditions *Aránzazu Fernández-García, CIEMAT-Plataforma Solar de Almería*
05:15 pm	Real-Time Prediction Service to Improve the Reliability of CSP Plants *Ibon Benat Salbidegoitia, Meteo for Energy*
05:35 pm	Geometric Modularity in the Thermal Modeling of Solar Steam Turbines *Monika Topel, KTH*
05:55 pm	Dynamic Effects of a Heliostat to Wind Loading *Jose Mª Terrés Nícoli, Oritia & Boreas University of Granada*

THURSDAY

6:15 pm - 7:30 pm Poster Session 3

The poster numbers are based on the topics:

N	Thermal Receivers
O	Thermal/Thermochemical Energy Storage
P	Water Desalination and Detoxification

N-01 Thermal Stresses Analysis of a Circular Tube in Central Receiver
Carolina Marugan, Carlos III University

N-02 Alternative Designs of a High Efficiency, North-Facing, Solid Particle Receiver
Joshua Christian, Sandia National Laboratories

N-03 Numerical Simulation on the Performance of a Combination of External and Volumetric Absorber for Solar Power Plant
Xiaoze Du, North China Electric Power University

N-04 Numerical Study of Nanofluid Application for Improvement Thermal Performance of Parabolic Trough Collectors
Mahmood Yaghoubi, Shiraz University

N-05 Optical Analysis and Thermal Modeling of a Window for a Small Particle Solar Receiver
Ahmet Murat Mecit, San Diego State University

N-06 Performance Analysis of a Novel Air-based Cavity Receiver – *Paolo Matarrese, ICIMSI-DTI*

N-07 High Performance Coatings for Solar Receivers and a New Dedicated Manifacturing Solution
Michael Zettl, Zettl Ing. & Vertriebsges. mbH

N-08 Strategies Enhancing Efficiency of Cavity Receivers – *Ralf Uhlig, Institute of Solar Research*

N-09 3-D Numerical Simulation on Heat Transfer and Turbulent Flow in a Receiver Tube of Solar Parabolic Trough Concentrator with Louvered Twisted-tape Inserts
Mahmood Yaghoubi, Shiraz University

N-10 A New Brayton Cycle Low Pressure, Air Heating Solar Receiver for Baseload Power Tower CSP Systems
Bill Treece, Wilson Solarpower Corporation

N-11 New Design of Molten-salt Tubular-receiver for Solar Power Tower Plants
María Reyes Rodríguez-Sánchez, Carlos III University

N-12 Solar Receiver Aging Test Data Analysis
Buliang Chen, TRX Solar

N-13 Solar Thermal Power System Augmented with LHP – *Pramod Kumar, Indian Institute of Science*

O-01 CFD Analysis of a Molten Salt Tank with Integrated Steam Generator
Esther Rivas, CIEMAT-PSA

O-02 An Evaluation of Pressure Measurement Technology and Operating Performance Using Sandia's Molten Salt Test Loop
David Gill, Sandia National Laboratories

O-03 Status of the Development of a New High Temperature Thermal Energy Storage System (HTTESS)-concept
Günter Schneider, enolcon GmbH

O-04 A New Thermocline-PCM Thermal Storage Concept for CSP Plants. Numerical Analysis and Perspectives – *Carlos-David Perez-Segarra, Technical University Catalonia*

O-05 Numerical Modeling of Solar Thermochemical Reactor for Kinetic Analysis
Selvan Bellan, IMDEA Energy

O-06 Study on the Reaction Mechanism of Dehydration of $Ca(OH)_2$
Haibin Chen, Wuhan University of Technology

O-07 Thermal Storage Concept for Solar Thermal Power Plants with Direct Steam Generation
Markus Eck, DLR

O-08 sandTES – an Active Thermal Energy Storage System Based on the Fluidization of Powders
Karl Schwaiger, TU Vienna

O-09 Monolithic Ceramic Redox Materials for Thermochemical Heat Storage Applications in CSP Plants
George Karagiannakis, APTL/CPERI/CERTH

O-10 Interaction Study between Heat Thermal Storage Oil and Moroccan Rocks Used as Filler Material for Thermal Energy Storage in CSP Power Plants – *Nadia Zari, MAScIR*

O-11 Transient Behavior of an Active Indirect Two-tank Thermal Energy Storage System during Changes in Operating Mode – An Application of an Experimentally Validated Numerical Model
Fritz Zaversky, CENER

O-12 Numerical Analysis and Experimental Demonstration of a Packed-bed Thermal Energy Storage for Concentrated Solar Power
Giw Zanganeh, ETH Zürich

O-13 High-temperature Thermal Storage System for Solar Tower Power Plants with Open-volumetric Air Receiver. Simulation and Energy Balancing of a Discretized Model
Valentina Kronhardt, Solar-Institut Jülich

O-14 Characterization and Sintering Potential of Solid Particles for Use in High Temperature Thermal Energy Storage System
Hany Al-Ansary, King Saud University

O-15 Numerical Simulation of Single- and Dual-media Thermocline Tanks for Energy Storage in Concentrating Solar Power Plants
Carolina Mira, Purdue University

O-16 Experimentation of a High Temperature Thermal Energy Storage Prototype Using Phase Change Material for the Thermal Protection of a Pressurized Air Solar Receiver
David Verdier, PROMES-CNRS

O-17 Thermochemical Energy Storage via Water-splitting by Redox Reaction of Alkali Metals
Hiroki Miyaoka, ISSD

O-18 100-Wh Multi-purpose Particle Reactor for Thermochemical Heat Storage in Concentrating Solar Power Plants
Manuel Romero, IMDEA Energy

O-19 Comparison of Thermocline Molten Salt Storage Performances to Commercial Two Tanks Configuration
Giampaolo Manzolini, Politecnico di Milano

O-20 Simulation and Experimental Study on Long Term Sensible Thermal Energy Storage in Solar Thermal System
Cheng Wang, Zhejiang University

O-21 Design Methodology and Experimental Platform for the Validation of PCM Storage Modules for DSG Solar Plants
Marco Olcese, CEA-INES

O-22 Dynamic Behavior of a Sensible-heat Based Thermal Energy Storage under Cycling
Amelie Kere, PROMES CNRS

O-23 Evaluation of Annual Efficiencies of High Temperature Central Receiver Concentrated Solar Power Plants With Thermal Energy Storage
Brian Ehrhart, University of Colorado

O-24 Analysis on the Thermal Behaviour of High Temperature Latent Heat Thermal Energy Storage System
Xiaoze Du, North China Electric Power University

O-25 Experimental and Numerical Investigation of Stability of Packed Bed Thermal Energy Storage for CSP Power Plant
Arnaud Bruch, CEA-INES

O-26 Packed Rock Bed Thermal Storage in Power Plants: Design Considerations
Kenneth Allen, University of Stellenbosch

O-27 Sub-Critical Direct-Steam Tower with Thermal Energy Storage and Independent Superheater
Alon Ganany, BrightSource Industries Israel

P-01 Solar Driven Adsorption Desalination System
Pradip Dutta, Indian Institute of Science

P-02 Design and Construction of a Portable Parabolic Solar Concentrator for Water Purification in Rural Mexico
Carlos Ernesto Arreola Ramos, IER (UNAM)

P-03 Performance of a 5 kWe Solar-only Organic Rankine Unit Coupled to a Reverse Osmosis Plant
Mercedes Ibarra, Plataforma Solar de Almería

P-04 Modeling Multi Effect Distillation Powered by CSP in TRNSYS
Sergio Casimiro, LNEG MIT Portugal program

FRIDAY

08:00 am - 10:00 am — Plenary: Cost Reduction Challenges and Approaches in CSP

ROOM: BALLROOM

08:00 am — *Rob Prout - Director of New Business Development, Grenzebach*

08:30 am — Panel Discussion

Joeseph Desmond – *Senior Vice President, Marketing and Government Affairs, BrightSource Energy*

Rick Huibregtse – *Senior Vice President of Engineering, eSolar*

Henry Price – *Vice President of Technology, Abengoa Solar LLC*

Martin Selig – *Founder and Board Member for Market and Product Development, Novatec Solar*

Kevin Smith – *Chief Executive Officer, SolarReserve*

10:00 am - 10:30 am — Networking Break

10:30 am - 11:30 am — Thermal/Thermochemical Energy Storage

ROOM: SONOMA A

Chair: Anoop Mathur, Terrafore

10:30 am — An Innovative Concept of a Thermal Energy Storage (TES) System Based on the Single Tank Configuration Using Stratifying Molten Salts (MS) as both HSM and HTF, and with an Integrated Steam Generator
Walter Gaggioli, ENEA

10:50 am — Dish Stirling Advanced Latent Storage Feasibility
Charles Andraka, Sandia National Laboratories

11:10 am — A Design Study for Regenerator-type Heat Storage in Solar Tower Plants – Results and Conclusions of the HOTSPOT Project
Stefan Zunft, DLR

10:30 am - 11:30 am — Measurements and Control

ROOM: SONOMA C

Chair: Gilles Flamant, PROMES-CNRS

10:30 am — Control Design Model for a Solar Tower Plant
Damien Faille, Electricité de France

10:50 am — Model Based Open-loop Correction of Heliostat Tracking Errors
Karel Malan, Stellenbosch University

11:10 am — Field Demonstration of an Automated Heliostat Tracking Correction Method
Edward Smith, Sandia National Laboratories

10:30 am - 11:30 am — CSP Systems

ROOM: NAPA A

Chair: Zhifeng Wang, Chinese Academy of Sciences

10:30 pm — Molten Salt for Parabolic Trough Applications: System Simulation and Operation Experiences
Wolfgang Schiel, sbp sonne GmbH

10:50 am — Influence of Different Operation Strategies on Transient Solar Thermal Power Plant Simulation Models with Molten Salt as Heat Transfer Fluid
Michael Wittmann, DLR

11:10 am — Optimization of Thermal Energy Storage Integration Strategies for Peak Power Production by Concentrating Solar Power Plants
Rafael Guedez, KTH - Energy Department

10:30 am - 11:30 am — Reliability and Service Life Prediction

ROOM: NAPA C

Chair: Levi Irwin, U.S. Department of Energy

10:30 am — Accelerated Aging of a Solar Absorber Material Subjected to Highly Concentrated Solar Flux
Antoine Boubault, CNRS-PROMES

10:50 am — Comparison and Evaluation of Accelerated Aging Tests for Reflectors
Florian Sutter, DLR

11:10 am — Accelerated Lifetime Modeling on the Basis of Wind Tunnel Analysis and Sand Storm Aging
Carsten Holze, machtTechnik AG

11:45 am - 12:15 pm — Closing Plenary

ROOM: BALLROOM

12:15 pm - 01:30 pm — Lunch

Technical Tours

Tour of Ivanpah Solar Electric Generating Station

Date	Friday, September 20, 2013
Time Group 1	1:30 pm, bus departure at South Point Hotel 5:30 pm, bus arrival at South Point Hotel (est. time)
Time Group 2	2:30 pm bus departure at South Point Hotel 6:30 pm bus arrival at South Point Hotel (est. time) driving time, one way: 1 hour (est. time)
Location	Ivanpah Dry Lake, California
Fee	US$40
Developer	BrightSource Energy and Bechtel
Transportation	56 passenger buses, air conditioned, with video capability and equipped with restrooms

Please wear comfortable shoes/boots and bring a hat and sunscreen.

Visit the world's largest solar thermal power plant, the 377 MW (net) Ivanpah Solar Electric Generating System. Owned by Solar Partners, an entity that counts NRG Solar, Google, and BrightSource as equity investors, the project spans 3,500 acres in California's Mojave Desert and is comprised of three units. The project is being constructed by Bechtel. Visitors will see the iconic clean energy project, which is more than 92% complete, and meet with experts from the project companies to learn about Ivanpah's technology, construction and start-up activities to date.

Tour of Crescent Dunes Solar Energy Project

Date	Saturday, September 21, 2013
Time (Group 1)	8:00 am, bus departure at South Point Hotel 6:30 pm, bus arrival at South Point Hotel (est. time)
Time (Group 2)	10:00 am bus departure at South Point Hotel 8:30 pm bus arrival at South Point Hotel (est. time) driving time, one way: 4.5 hours (est. time)
Location	Tonopah, Nevada
Fee	US$90
Developer	SolarReserve
Transportation	56 passenger buses, air conditioned, with video capability and equipped with restrooms

Please wear comfortable shoes/boots and bring a hat and sunscreen.

Visitors can take part in a tour of the Crescent Dunes plant, which will be the world's largest solar power tower plant utilizing integrated molten salt energy storage technology and the first of its kind in the United States. Construction on Crescent Dunes began in September 2011 and is set to be commissioned in 2014. Guests will be able to get an exclusive first look at this unique CSP plant that will have ten hours of thermal energy storage allowing it to generate electricity from the sun at any time, day or night. When completed, the facility will generate approximately 500,000 megawatt hours annually of clean, renewable electricity, enough to power 75,000 homes during peak electricity periods.

Social Events

Tuesday, September 17, 2013

07:30 pm Welcome Reception, Pavilion/Exhibit Hall

Wednesday, September 18, 2013

07:30 pm Conference Banquet and Awards Ceremony

The dinner will take place in the Grand Ballroom at the South Point Hotel. There will be live entertainment in the lobby area as well as inside the ballroom. The conference dinner is included in all full conference tickets. Day ticket holder and accompanying persons have the possibility to purchase a dinner ticket for US$80 at the registration desk.

The Conference Banquet will be sponsored by SQM. Thank you!

SQM
THE WORLDWIDE BUSINESS FORMULA

Side Event

Join the Annual CSP Young Professionals and Students Dinner!

CYP, the informal network for young professionals and students in the CSP field, is hosting its second official dinner for young professionals and students at SolarPACES! CYP was launched early 2012 after a few students, who all met at the SolarPACES conferences, decided to give the informal dinners a more official character. At SolarPACES 2012 this resulted in over 80 young professionals enjoying dinner and conversation. Join young professionals and students from all over the world on Thursday September 19th, and share the passion of becoming a solar thermal expert together with your peers!

More information and registration for the dinner can be found at: http://www.cypnetwork.org/events/young-professionals-in-csp-dinner or through the sign-up form at the conference registration/information desk. Registration open only to young professionals and students.

General Information

Venue

The SolarPACES 2013 conference will take place at the South Point Hotel, Casino and Spa, Las Vegas.

Address:

South Point Hotel
9777 Las Vegas Blvd. South
Las Vegas, Nevada 89183

Telephone: 702-796-7111
Toll Free: 866-796-7111
Room Reservations Toll Free: 866-791-7626

www.southpointcasino.com

WiFi Internet Access

WiFi is complimentary in the guest rooms in the hotel tower.

Smartphones work well in the exhibit hall and meeting rooms. However, access may vary depending on your provider and the density of users in one location during the conference.

Conference Registration

The conference registration desk is located at the entrance of the South Point Conference Center, which is located on the second level of the hotel.

Before attending the sessions, pre-registered participants have to present themselves in person at the registration desk to collect a conference bag and their name badge. The badge needs to be worn to be admitted to all sessions and conference events.

On-site registration is also available at the registration desk for those who have not pre-registered.

Regular conference registration (full ticket) includes:

- Access to all conference sessions and the poster area
- Access to the sponsoring and exhibition area during the conference
- The printed conference program
- The conference proceedings online in Elsevier‘s *Energy Procedia*
- Daily networking breaks and lunch
- Free entrance to the Welcome Reception
- The Conference Banquet and Awards Ceremony
- Access to a password-secured area on the website where the list of participants, abstracts as well as the papers will be published after the conference. Papers will be available on the website until publication in *Energy Procedia*.

Name Badge

Delegates are requested to wear their official identification name tag at all time during the presentations within the Conference Center and the Exhibit Hall.

Conference Proceedings

Accepted papers will be published online in Elsevier's *Energy Procedia*. All papers published in *Energy Procedia* feature individual DOI numbers and are, therefore, fully citable.

Las Vegas Information and Entertainment

Coupons and information will be in your conference bag as well as tipping and gratuity guidelines. A Las Vegas Information Desk will be located at conference level. Hosts can assist you with information regarding entertainment and local services.

Smoking

Smoking is allowed in hotel casino and outside. Smoking is not allowed in restaurants, meeting rooms, exhibit hall, conference center or pre-function areas.

Currency

The local currency in Las Vegas is the US Dollar. On August 16, 2013, 1 USDollar equaled 0.7494 Euro; 1 Euro equaled 1.3344 USDollar. You are advised to check the conversion rate at xe.com for the days of your visit.

Notes