

Sunday, 08 July 2012

18:00 - 20:00 **Pre-Registration**

Monday, 09 July 2012

09:00 - 10:45 **Opening Session and Keynote Lectures (Solar Communities)**

09:00 World Wide Developments and Future Trends
W. Weiss
AEE INTEC

09:20 Solar Resource
D. Renné
ISES

10:45 - 11:15 **Coffee Break**

11:15 - 12:10 **Keynote Lectures (Solar Communities)**

11:15 Seasonal Storage
D. McClenahan
CanmetENERGY

11:35 District Heating
J.E. Nielsen
SolarKey Int.

11:55 SHC Roadmap
P. Frankl
IEA

12:10 - 12:30 **Industry Session**

12:30 - 13:00 Poster Session

- P1 Conceptual Design Of A Novel Flat Plate Collector for Urban Areas Integration
I. Visa¹, D. Ciobanu¹, M. Comsit¹, A. Duta¹
¹ Transilvania University of Brasov
- P2 Solar Absorption in a Ventilated Facade with PCM. Experimental Results
L.F. Cabeza¹, A. Castell¹, L. Navarro¹, A. Ruiz-Pardo², A. de Gracia¹, S. Álvarez²
¹ University of Lleida
² University of Sevilla
- P3 Energy Performance of Greenhouse for Energy Saving in Buildings
L.C. Tagliabue¹, M. Buzzetti¹, G. Marenzi¹
¹ Politecnico di Milano
- P4 Efficiencies of Flat Plate Solar Collectors with Different Flow Rates and Collector Tilts
Z. Chen¹, E. Andersen¹, J. Fan¹, S. Furbo¹, B. Perers¹
¹ Technical University of Denmark
- P5 SolarPW: A New Solar Design Tool to Exploit Solar Potential in Existing Urban Areas
G. Lobaccaro¹, F. Frontini²
¹ Politecnico di Milano
² ISAAC-SUPSI
- P6 Combining Heat Pumps with Solar Energy for Domestic Hot Water Production
R. Dott¹, T. Afjei¹, A. Genkinger¹
¹ Institut Energie am Bau - FHNW
- P7 Assessment and Optimization of a Novel Solar Refrigeration System applied in Agro-food Industry
O. Ayadi¹, M. Motta¹
¹ Politecnico di Milano
- P8 Performance Assessment for Solar Heating and Cooling System for Office Building in Italy
O. Ayadi¹, A. Mauro¹, M. Motta¹
¹ Politecnico di Milano
- P9 Performance Analysis of Transparent Perforated Solar Collectors for Air Pre-heating for Three Different Building Claddings
G. Bussieres¹
¹ Natural Gas Technologies Center

- P10 Solar Combisystem Characterization with a Global Approach Test and a Neural Network based Model Identification
A. Leconte¹, G. Achard², P. Papillon¹
¹INES
²LOCIE Université de Savoie
- P11 Solar Process Heat as Viable Energy Supply for the Industry
H. Blazek¹, C. Holter¹, R. Soell¹
¹SOLID GmbH
- P12 Solar Radiation Absorption and Thermal Inertia of Rammed Earth Wall Compared to Conventional Brick Facades
L.F. Cabeza¹, A. Castell¹, L. Navarro¹, G. Pérez¹, L. Rincón¹, S. Serrano¹, A. de Gracia¹
¹University of Lleida
- P13 Evaluation of Optimal Solar Fraction in PVT System
F. Leonforte¹, N. Aste¹, C. Del Pero¹
¹Politecnico di Milano
- P14 Examination of a Thermotropic Polymer for All-polymeric Solar Thermal Collectors
A. Gladen¹, J. Davidson¹, M. Hillmyer¹, S. Mantell¹
¹University of Minnesota
- P15 Geyser Pump Model Development for Improved Design of a Solar Thermal Water Heating System
S. Stewart¹, J. Brownson¹, L. Witmer¹, Q. Zhang¹
¹Penn State
- P16 A Review of Solar Assisted Heat Pumps for Domestic Hot Water Heating
N. Preston¹, S. Harrison¹
¹Queen's University
- P17 Experimental and Two-Dimensional Numerical Simulation of an Unglazed Transpired Solar Air Collector
M. Badache¹, Y. Dutil¹, S. Hallé¹, D.R. Rousse¹
¹École de Technologie Supérieure
- P18 CFD Analysis of the Temperature Distribution in PVT Collector Panel
F. Leonforte¹, N. Aste¹, C. Del Pero¹
¹Politecnico di Milano
- P19 The Influence of the Deposition Parameters on Structural, Morphological and Optical Properties of Colored Selective Coatings Based on Alumina
A. Duta¹, M. Dudita¹, E. Ienei¹, I. Visa¹
¹Transilvania University of Brasov
- P20 Solar Heat Flux Reduction through Roof Using Porous Insulation Layer
A. Mozumder¹, A.K. Singh¹
¹Bharati Vidyapeeth College of Engineering

- P21 The TC/EC-PCM Glazing Concept for Advanced Fenestration Systems of the Future: A Numerical Investigation
F. Goia¹, M. Perino¹
¹*Politecnico di Torino*
- P22 Stabilized Rammed Earth Incorporating PCM: Optimization and Improvement of Thermal Properties and Life Cycle Assessment
L.F. Cabeza¹, C. Barreneche¹, D. Boer², A. Castell¹, L. Rincón¹, S. Serrano¹
¹*University of Lleida*
²*University Rovira i Virgili*
- P23 Tools and Methods for Solar Design – An Overview of IEA-SHC Task 41, Sub-task B
M. Horvat¹, M. Dubois²
¹*Ryerson University*
²*Lund University*
- P24 Raising High Light to Solar Gain Ratio of Eco Glass Block with Cavity and Interlayer
F. Binarti¹
¹*University of Atma Jaya Yogyakarta*
- P25 Trombe Walls for Lightweight Buildings in Temperate and Hot Climates. Exploring the Use of Phase-Change Materials for Performances Improvement.
F. Fiorito¹
¹*The University of Sydney*
- P26 Collaboration Opportunities for Advanced Housing Renovation
E. Mlecnik¹, S.E. Aabrekk², J. Cré³, M. Grøn⁴, T. Haavik², S. Hansen⁴, I. Kondratenko³, S. Paiho⁵, T.B. Salcedo Rahola¹, O. Stenlund⁵, J. Vrijders⁶
¹*TU Delft*
²*Segel AS*
³*Passiefhuis-Platform vzw*
⁴*Technical University of Denmark*
⁵*VTT Technical Research Centre of Finland*
⁶*Belgian Building Research Institute*
- P27 District Geometry Simulation: A Study for the Optimization of Solar Façades in Urban Canopy Layers
F. Fiorito¹, G. Lobaccaro²
¹*The University of Sydney*
²*Politecnico di Milano*
- P28 +hytte. Architectural Design of a Solar House between Didactics and Research
L. Finocchiaro¹, S. Grynning², M. Haase¹
¹*NTNU*
²*SINTEF Byggforsk*

- P29 Examine the Energy Efficiency of Passive Cooling Techniques with Integration of ECBC for Hot and Dry Climate of Ahmedabad
M. Jayswal¹
¹ *CEPT University*
- P30 “Daylight and Energy: Designing with Insulating Glass Units (IGUs) and Integrated Cord-Free Louvers”
J. Couturier¹
¹ *Unicel Architectural*
- P31 The Design Process known as Integrated Design Process: A Discussion
J. Kanters¹, M. Horvat²
¹ *Lund University*
² *Ryerson University*
- P32 Criteria for Architectural Integration of Active Solar Systems IEA Task 41, Subtask A
M. Munari Probst¹, C. Roecker¹
¹ *EPFL-LESO*
- P33 Renovation of an UNESCO Heritage Settlement in Southern Italy: ASHP and BIPV for a “Spread Hotel” Project
J. Compostella¹, L.C. Tagliabue¹
¹ *Politecnico di Milano*
- P34 Cooling Demand and Daylight in the New Tallinn Town Hall Buildings the Influence of Facade Design
H. Voll¹, E. Seinre¹
¹ *Tallinn University of Technology*
- P35 Case Studies and Communication Guidelines for Solar Architecture: Results from IEA SHC Task 41, Subtask C
K. Kappel¹, O. Bruun Jørgensen², R. Hagen³
¹ *Solar City Copenhagen*
² *Esbensen Consulting Engineers*
³ *Context*
- P36 Can Toronto Be a Solar City: An Analysis on Solar Energy Potential in the City of Toronto
A. Colucci¹, M. Horvat¹
¹ *Ryerson University*
- P37 Assessment of Climate Adaptation of Youth Club in Tozeur, South of Tunisia
D. Ouahrani¹
¹ *Qatar University*
- P38 An Algorithm for Designing Dynamic Solar Shading System for Daylighting
R. Adhikari¹, N. Aste¹, M. Fiori¹
¹ *Politecnico di Milano*

- P39 The Influence of Energy Conservation on the Total Economy in a Solar Thermal Collector Installation Project – A Cold Country Case Study
J. Wallin¹, D. Bastien²
¹Royal Institute of Technology (KTH)
²Concordia University
- P40 Spectral and Angular Optical Characterization of Dye Solar Cells for Building Integration
D. D’Ercole¹, T.M. Brown¹, A. Di Carlo¹, A. Lanuti¹, A. Reale¹, M. Zinzi²
¹University of Rome “Tor Vergata”
²ENEA - UTEE ERT
- P41 A Case Study of Solar Integration in Sensitive Built Environment: Products and Criteria for BIPV Integration
F. Frontini¹, L.C. Tagliabue²
¹ISAAC-SUPSI
²Politecnico di Milano
- P42 Energy and Daylight Implications of BIPV
M. Haase¹, N. Alinaghizadeh Khezri¹, A. Gunnershaug Lien²
¹NTNU
²SINTEF Building and Infrastructure
- P43 Built Integrated Solar Thermal System with Dish Solar Collector Used For Cooling
I. Visa¹, D. Ciobanu¹, M. Dudita¹, A. Duta¹, C. Jaliu¹
¹Transilvania University of Brasov
- P44 Validation of Heat Transfer Models for PCMs with a Conductivimeter
A. Urresti¹, G. Diarce¹, A. García-Romero¹, J.M. Sala¹
¹University of the Basque Country UPV/EHU
- P45 Building Integrated CSP Advanced Schematics
J. Goodman¹
¹PVO-Pergolas
- P46 Experimental Study of PCM Thermal Storage Units in a HVAC System
L.F. Cabeza¹, A. Castell¹, P. Moreno¹, C. Solé¹
¹University of Lleida
- P47 Performance Optimization of PCM Impregnated Gypsum Boards in Southern U.S. climates
N. Shukla¹, D. Elliott¹, A. Fallahi¹, J. Kosny¹
¹Fraunhofer Center for Sustainable Energy Systems
- P48 Novel Sorption Materials for Solar Heating and Cooling
S. Henninger¹, H. Henning¹, P. Schossig¹
¹Fraunhofer ISE

- P49 Study of Hybrid Photovoltaic Thermal (PV/T) Solar System with Modification of Thin Metallic Sheet in the Air Channel.
M.M. Uddin¹, M.S.S. Mojumder¹
¹Islamic University of Technology
- P50 A Finite Difference Model Of A PV-PCM System
G. Ciulla¹, M. Cellura¹, V. Lo Brano¹
¹University of Palermo
- P51 On Vacuum Insulated Thermal Storage
B. Fuchs¹, K. Hofbeck¹
¹Georg Simon Ohm University of Applied Sciences
- P52 Freezing Characteristics of PCMs in Cylinders-Conduction Control
S. Susarla¹
¹Stanley College of Engineering and Technology for Women
- P53 EINSTEIN Project: Effective Integration of Seasonal Thermal Energy Storage Systems in Existing Buildings
M. Epelde Agirre¹
¹TECNALIA
- P54 Thermal Behavior of a Heat Exchanger Module for Seasonal Heat Storage
J. Fan¹, E. Andersen¹, Z. Chen¹, S. Furbo¹, B. Perers¹
¹Technical University of Denmark
- P55 Parametric Studies of Thermochemical Processes for Seasonal Storage
G. Tanguy¹, F. Marias¹, P. Papillon¹, S. Rouge¹, J. Wytttenbach¹
¹INES
- P56 Thermal Loads Inside Buildings with Phase Change Materials: Experimental Results
L.F. Cabeza¹, A. Castell¹, L. Navarro¹, C. Solé¹, A. de Gracia¹
¹University of Lleida
- P57 Experimentation of a LiBr-H₂O Absorption Process for Long Term Solar Thermal Storage
K.E. N'Tsoukpoe¹, N. Le Pierrès¹, L. Luo¹
¹LOCIE Université de Savoie
- P58 Concentrated Heat Storage for Solar Heating
A. Lari¹
¹Austrian Consulting Engineers Group
- P59 Annual Performance Study of a Modular Thermal Storage
R. Dickinson¹, C. Cruickshank¹
¹Carleton University
- P60 solar cooling with adsorption chillers
W. Mittelbach¹
¹SorTech AG

- P61 Validation of Solar Absorption Cooling Numerical Model and Performances Optimization Using Sensitivity Analysis
B. Letxier¹, F. Lucas¹, O. Marc¹, J. Praene¹
¹ PIMENT, Université de La Réunion
- P62 Nocturnal Radiation Cooling Tests
J. Hollick¹
¹ Conserval Engineering Inc
- P63 Solar Cooling Technologies Using Ejector Refrigeration System (ERS)
O. Buyadgie¹, D. Buyadgie¹, A. Chamchine², O. Drakhnya¹
¹ WILSON/SRTC
² University of Central Lancashire
- P64 Energy Tri-generation: Combined Gas Cogeneration/Solar Cooling
R. Benelmir¹, D. Descieux¹, A. Merabtine¹, J.L. Tanguier¹
¹ University of Lorraine
- P65 Evaluation of a Solar Intermittent Refrigeration System Operating with Three Different Evaporators
W. Rivera¹, C. Solorio¹
¹ Universidad Nacional Autónoma de México
- P66 Dimensioning a Small-sized PTC Solar Field for Heating and Cooling of a Hotel in Almería (Spain)
M. Quirante¹, L. Valenzuela²
¹ UAL - CIESOL
² CIEMAT
- P67 Energetic Analysis of a Solar Absorption System with an Internal Storage
C. Sanjuan Guaita¹, R. Enríquez Miranda¹, J.A. Ferrer Tevar¹, M.d.R. Heras Celemín¹, S. Soutullo Castro¹
¹ CIEMAT
- P68 Cost Competitive Chillers, Chiller Ready Solar Preheat Systems and Solar Cooling Standardization Strategy for a Significant Increase of Solar Cooling Installations
B. Miao¹, D. Johnson²
¹ SunEnergyNet
² kW Engineering
- P69 Towards Global Certification of Solar Collectors
J.E. Nielsen¹, J. Huggins²
¹ SolarKey Int.
² Solar Rating and Certification Corporation
- P70 Uniform Representation of System Performance for Solar Hybrid Systems
P.N. Melograno¹
¹ EURAC

- P71 New Global Test Standards for Solar Thermal Collectors
P. Kovacs¹, S. Fischer², K. Kramer³, E. Mateu⁴
¹ *SP Technical Research Institute of Sweden*
² *University of Stuttgart*
³ *Fraunhofer ISE*
⁴ *Centro Nacional de Energías Renovables*
- P72 Dynamic Testing of Systems – Use of TRNSYS as an Approach for Parameter Identification
M.J. Carvalho¹, P. Almeida¹, V. Lopes¹
¹ *LNEG*
- P73 Field Study of Solar Domestic Water Heaters in Québec
A. Moreau¹
¹ *Laboratoire des technologies de l'énergie d'Hydro-Québec*
- P74 Experimental Optimization of a Compound Parabolic Solar Concentrator for Medium Temperature Applications
N. Ortega¹, R. Best¹, O. García¹, V. Gómez¹, I. Santos¹
¹ *Centro de Investigación en Energía*
- P75 Geometrical Assessment of Solar Concentrators Using Close-range Photogrammetry
J. Fernández-Reche¹, L. Valenzuela¹
¹ *CIEMAT*
- P76 Characterization of the Optical Properties of a PCM Glazing System
F. Goia¹, E. Carnielo², V. Serra¹, M. Zinzi³
¹ *Politecnico di Torino*
² *Roma Tre University*
³ *ENEA - UTEE ERT*
- P77 Green Roofs as Passive System for Energy Savings when Using Rubber Crumbs as Drainage Layer
L.F. Cabeza¹, A. Castell¹, J. Coma¹, G. Pérez¹, C. Solé¹
¹ *University of Lleida*
- P78 Comparative Analysis on the Energy Performance of Electrochromic Glazing and Automated External Venetian Blind
J. Compostella¹, N. Aste¹, M. Mazzon¹
¹ *Politecnico di Milano*
- P79 Advanced Performance of an Open Desiccant Cycle with Internal Evaporative Cooling
C. Bongs¹, H. Henning¹, A. Morgenstern¹
¹ *Fraunhofer ISE*

- P80 Model Predictive Control for a Smart Solar Tank based on Weather and Consumption Forecasts
R. Halvgaard¹, P. Bacher¹, S. Furbo², J.B. Jørgensen¹, H. Madsen¹, B. Perers², N.K. Poulsen¹
¹DTU Informatics
²DTU Civil Engineering
- P81 Optimization and Assessment of Solar Absorption Cooling and Heating Systems for Different Building Types and Climates
Y. Hang¹
¹Purdue University
- P82 Numerical Evaluation on Performances of AHUs Equipped with a Cross Flow Heat Exchanger in Wet and Dry Operation
M. Beccali¹, P. Finocchiaro¹
¹University of Palermo
- P83 Development and Demonstration of Combined Solar Water Heating and Space Air Conditioning System for Residential Building
W. Saman¹, V. Babovic¹, E. Halawa¹, E. Walther¹
¹Barbara Hardy Institute at University of South Australia
- P84 A Case Study of a Solar Air-conditioning with Absorption Chiller and Space Heating System
Z. Chen¹, X. He², T. Wang², D. Zhu³
¹Technical University of Denmark
²Guangxi University
³Beijing Solar Energy Research Institute
- P85 Solar Application of Building Heating with Season-crossing Heat Storage and Process Waste Heat
C. Hualin¹, Y. Xudong², L. Xuguang¹, Y. Zhiqiang²
¹Tsinghua Solar Systems Ltd
²Tsinghua University
- P86 A Simplified Heat Pump Model for Use in Solar Plus Heat Pump System Simulation Studies.
B. Perers¹, E. Andersen¹, P. Kovacs², R. Nordman²
¹DTU Civil Engineering
²SP Technical Research Institute of Sweden
- P87 Experimentation and Simulation of a Small-Scale Adsorption Cooling System in Temperate Climate
S. Thomas¹
¹University of Liège
- P88 Solar Assisted Heating and Cooling System in the American Southwest
T. Rabiah¹
¹DNJ Engineering

- P89 Energy Saving through the Sun: Analysis of Visual Comfort and Energy Consumption in Office Space
M. Buzzetti¹, B. Arosio¹, L.C. Tagliabue¹
¹ *Politecnico di Milano*
- P90 Assessment of a Solar Assisted Air Source and a Solar Assisted Water Source Heat Pump System in a Canadian Household
M. Kegel¹, A. Langlois¹, R. Sunye¹, J. Tamasauskas¹
¹ *CanmetEnergy-Varenes - NRCan*
- P91 Next Generation Adsorption Chillers
T. Lopp¹, W. Livingston¹
¹ *Power Partners, Inc.*
- P92 Simulation and Evaluation of Different Boiler Implementations and Configurations in Solar Thermal Combi Systems
J. Glembin¹, M. Adam², J. Deidert³, K. Jagnow³, G. Rockendorf¹, H.P. Wirth², D. Wolff³
¹ *Institute for Solar Energy Research Hameln (ISFH)*
² *Düsseldorf University of Applied Sciences*
³ *Ostfalia University of Applied Sciences*
- P93 Application of the ESP-r / TRNSYS Co-simulator to Study Solar Heating with a Single-house Scale Seasonal Storage
A. Wills¹, I. Beausoleil-Morrison¹, C. Cruickshank¹
¹ *Carleton University*
- P94 Solar Air Conditioner Driven Directly by PV Panels
B. Huang¹, Y.C. Huang¹, T. Lin¹
¹ *National Taiwan University*
- P95 Analysis of a Solar Office Building at the South of Spain through Simulation Model Calibration
R. Enríquez Miranda¹, M.d.R. Heras Celemín¹, M.J. Jiménez Taboada², C. San-Juan Guaita¹, S. Soutullo Castro¹
¹ *CIEMAT*
² *Plataforma Solar de Almería*
- P96 Experimental and Numerical Investigations on a Combined Biomass-Solar Thermal System
M. Hartl¹, S. Aigenbauer², I. Malenkovic¹, A. Schmitzberger³
¹ *Austrian Institute of Technology*
² *Bioenergy 2020+ GmbH*
³ *Solarfocus GmbH*
- P97 Performance of a Solar Driven LiBr Absorption Chiller during a Day in Different Locations
F. Fardoun¹, F. Kojok¹
¹ *Lebanese University*

- P98 Air-Condition by Thermal Solar Heat with High Efficiency & Low Cost
S. Minds¹
¹*AC-Sun ApS*
- P99 Using the Ground Temperature for Heating and Cooling a Passive House
M.E.A. Boukli Hacene¹, B. Boumediene¹, N.E. Chabane Sari¹
¹*Abou Bekr Belkaid University of Tlemcen*
- P100 Using a Double-pass Solar Drier for Jerky Drying
J. Banout¹, I. Kucerova¹, S. Marek¹
¹*Czech University of Life Sciences Prague*
- P101 Integrating Medium Temperature Solar Heat from Concentrating Collectors into Industrial Processes – Seven Case Studies
S. Minder¹, F. Pithan¹
¹*NEP Solar AG*
- P102 Sensitivity Analysis of Saturated Steam Production in Parabolic Trough Collectors
L. Valenzuela¹, D. Hernández-Lobón², E. Zarza¹
¹*CIEMAT*
²*Plataforma Solar de Almeria*
- P103 Demonstration of Three Large Scale Solar Process Heat Applications with Different Solar Thermal Collector Technologies
D. Pietruschka¹, R. Fedrizzi², F. Oriolli³, R. Stauss⁴, R. Söll⁵
¹*University of Applied Sciences Stuttgart*
²*EURAC*
³*SOLTIGUA*
⁴*SOLERA GmbH*
⁵*S.O.L.I.D*
- P104 Solar District Heating in Denmark - A Success Story
J.E. Nielsen¹
¹*SolarKey Int.*
- P105 District Heating. Results of a Monitoring Campaign in Lombardy Region
M. Buzzetti¹, N. Aste¹, P. Caputo¹
¹*Politecnico di Milano*
- P106 Investigation of Thermal Performance of Flat Plate and Evacuated Tubular Solar Collectors According to a New Dynamic Test Method
W. Kong¹, Z. Chen², J. Fan², S. Furbo², B. Perers², Z. Wang¹
¹*Key Laboratory of Solar Thermal Energy and Photovoltaic System Institute of Electrical Engineering*
²*Technical University of Denmark*
- P107 Investigations on Evacuated Tubular Solar Collectors with Different Configurations
Z. Chen¹, E. Andersen¹, J. Fan¹, S. Furbo¹, B. Perers¹
¹*Technical University of Denmark*

- P108 Novel Solar Thermal Concentrator for Rooftop Installation
E. Schubert¹, J. Byström¹, O. Olsson¹
¹ *Absolicon Solar Concentrator AB*
- P109 Numerical Modeling and Thermal Performance Comparison of Direct Flow Vacuum Tube Solar Collector for Coaxial, U and Straight Flow Configurations
H.H. Esfehiani¹, A.W. Badar¹, F. Ziegler¹
¹ *TU-Berlin*
- P110 Performance of Solar Water Heating Collectors in Lebanon
F. Fardoun¹, O. Ibrahim¹
¹ *Lebanese University*
- P111 Self-limiting Irradiation Panels for Solar Collectors and Greenhouses
R. Griessen¹, M. Slaman¹
¹ *VU University*
- P112 Simulation of Annual Energy Saving Benefit of Solar Collector
X. Wang¹, A. Feng¹, T. He¹, Z. Li¹, M. Wang¹, X. Zhang¹, R. Zheng¹
¹ *China Academy of Building Research*
- P113 Why Controls will Save the Solar Water Heating Sector
P. Foster¹
¹ *Amatis Controls*

13:00 - 14:00 Lunch Break

14:00 - 15:45 Solar Thermal Collectors

- 14:00 An Experimental Assessment of the Energy Performance of Novel Concrete Walls Embedded with Mini Solar Collectors
L. Bellamy¹
¹ *RMIT University*
- 14:15 The Experimental Performance of an Unglazed PV-Thermal Collector with Fully Wetted Absorber
J. Kim¹
¹ *Green Home Energy Technology Research Center/Kongju National University*
- 14:30 High Transmittance, Low Emissivity Glass Covers for Flat Plate Collectors: Applications and Performance
F. Giovannetti¹
¹ *Institute for Solar Energy Research Hameln (ISFH)*
- 14:45 IEA Solar and Heat Pump Systems Solar Heating and Cooling Task 44 & Heat Pump Programme Annex 38
J. Hadorn¹
¹ *BASE Consultants SA*

15:00 In situ Measurements of the Thermal Performance of Several Unglazed Transpired Solar Collectors in Canada
S. Bastarache¹, F. Brizard¹, Y. Dutil¹, C. Genevès¹, D.R. Rousse¹, P. Savary¹
¹*École de Technologie Supérieure*

14:00 - 15:45 Solar Resource Assessment

14:00 Design Methodology of Solar Neighborhoods
C. Hachem¹, A. Athienitis¹, P. Fazio¹
¹*Concordia University*

14:15 Inverse Problem Techniques Applied to the Estimation of Ground Reflectance from Horizontal and Vertical Irradiance Measurements
R. Enríquez Miranda¹, M.d.R. Heras Celemín¹, M.J. Jiménez Taboada², L. Zarzalejo¹
¹*CIEMAT*
²*Plataforma Solar de Almería*

14:30 Thermal Performance of Solar Domestic Hot Water Systems for Different Weather Conditions in Denmark
L. Skalik¹, J. Dragsted², S. Furbo², O. Lulkovicova¹
¹*Slovak University of Technology in Bratislava*
²*Technical University of Denmark*

14:45 Towards Solar Urban Planning: a New Step for Better Energy Performance
M. Amado¹, F. Poggi¹
¹*Universidade Nova de Lisboa*

15:00 Validation of SUNY Version 3 Global Horizontal and Direct Normal Solar Irradiance in Canada
R. Djebbar¹
¹*Natural Resources Canada*

14:00 - 15:45 Solar Heating and Air-conditioning of Buildings

14:00 Application of Solar Cooling System in a Campus Library in Hainan, China
L. Zhong¹, L. Changlin¹, L. Guoli², N. Jinjin¹, W. Lifeng¹, Z. Ruicheng¹, Z. Xinyu¹, H. Zhulian¹
¹*China academy of buiding research*
²*Hainan Sun Source Solar Energy Development ltd.*

14:15 Combined Solar Hot Water, Pool Water, Space Heating and Cooling Application in a Temperate Climate
B. To¹
¹*Enerworks Inc*

- 14:30 Direct Coupling of Solar Thermal and Heat Pump at Large Scale: Experimental Feedback from an Existing Plant
F. Mermoud¹, C. Fraga¹, P. Hollmuller¹, B. Lachal¹
¹ *University of Geneva*
- 14:45 Solar Heating and Air-Conditioning by GSHP Coupled to PV System for a Cost Effective High Energy Performance Building
L.C. Tagliabue¹, M. Maistrello¹
¹ *Politecnico di Milano*
- 15:00 Developing Situation and Energy Saving Effects for Solar Heating and Cooling in China
R. Zheng¹, T. He¹
¹ *China Academy of Building Research*
- 15:15 Demonstration of the New ESP-r and TRNSYS Co-simulator for Modelling Solar Buildings
I. Beausoleil-Morrison¹
¹ *Carleton University*
- 15:30 Review of Component Models for the Simulation of Combined Solar and Heat Pump Heating Systems
M.Y. Haller¹, T. Afjei², E. Bertram³, R. Dott², F. Ochs⁴
¹ *Hochschule für Technik HSR*
² *Fachhochschule Nordwestschweiz FHNW*
³ *Institute for Solar Energy Research Hameln (ISFH)*
⁴ *Universität Innsbruck*
- 15:45 - 16:15 Coffee Break**
- 16:15 - 18:00 Rating and Certification**
- 16:15 Certification and Characterisation of Solar Air Heater
K. Kramer¹
¹ *Fraunhofer ISE*
- 16:30 Improving the Accuracy in Performance Prediction for New Collector Designs
P. Kovacs¹, S. Fischer², B. Perers³
¹ *SP Technical Research Institute of Sweden*
² *University of Stuttgart*
³ *Dalarna University Borlänge Sweden*
- 16:45 IEA-SHC Task 43: Research and Standardization on Solar Collector Testing towards a Global Certification Scheme
E. Mateu Serrats¹, K. DeGroat², L. Nelson³, J.E. Nielsen⁴
¹ *CENER*
² *Antares Group, Inc.*
³ *Western Renewables Group*
⁴ *PlanEnergi*

- 17:00 International Standards for Solar Water Heating Collectors and Systems
K. Guthrie¹, E. Chandrasekare², Z. He³, J. Huggins⁴
¹*Sustainability Victoria*
²*Standards Australia*
³*Beijing Solar Energy Research Institute*
⁴*Solar Rating and Certification Corporation*
- 17:15 A Standardized Collector Performance Calculation Tool. Additional Modeling of PVT Collectors.
B. Perers¹, P. Kovacs², M. Olsson², M. Persson², U. Pettersson²
¹*DTU Civil Engineering*
²*SP Technical Research Institute of Sweden*
- 17:30 Testing of Solar Thermal Collectors Under Transient Conditions
T. Osório¹, M.J. Carvalho¹
¹*Laboratório Nacional de Energia e Geologia*
- 17:45 Test Method and Compact Facility for Thermal Performance and Energy Efficiency Grades of Compact Solar Water Heaters
H. Tao¹, W. Min¹, Z. Ruicheng¹, Z. Xinyu¹, W. Xuan¹, D. Yu¹
¹*China Academy of Building Research*

16:15 - 18:00 Solar Thermal Collectors

- 16:15 Methods for Medium Temperature Collector Development applied to a CPC Collector
C. Zauner¹, G. Gleiss², F. Hengstberger³, W. Hohenauer³, C. Reichl³, A. Simetzberger²
¹*Austrian Institute of Technology*
²*Solarfocus GmbH*
³*Austrian Institute of Technology*
- 16:30 The Receiver Tube of PTC Collectors for Medium Temperature Applications: Modelling and Experimentation at the University of Florence
D. Fissi¹
¹*University of Florence*
- 16:45 A Study of Design Options for a Building Integrated Photovoltaic Thermal (BIPV/T) System with Glazed Air Collector and Multiple Inlets
T. Yang¹
¹*Concordia University*
- 17:00 Experimental Model Validation of a Hybrid PV/Thermal Air Based Collector with Impinging Jets
S. Brideau¹, M. Collins²
¹*Carleton University*
²*University of Waterloo*

16:15 - 18:00 Solar Heating and Air-conditioning of Buildings

- 16:15 Innovative and Energy Efficient Concept for Solar Cooling (DHW/Cooling Hybrid Strategy): Practical First Results
R. Sire¹, D. Mugnier¹
¹TECSOL
- 16:30 Performance Evaluation of a Liquid Desiccant Solar Air Conditioning System
L. Crofoot¹, S. Harrison¹
¹Queen's University
- 16:45 Solar Assisted Heat Pump for Domestic Hot Water Production
S. Eicher¹, J. Bony¹, M. Bunea¹, S. Citherlet¹, C. Hildbrand¹
¹LESBAT - HEIG-VD
- 17:00 Validation of the Numerical Model of a Turnkey Solar Combi+ System
D. Bettoni¹
¹EURAC
- 17:15 Modelling and Control Optimization of a Solar Desiccant and Evaporative Cooling System using an Electrical Heat Pump
M. Aprile¹, M. Motta¹, R. Scozzia¹
¹Politecnico di Milano
- 17:30 High Potential of Full Year Operation with Solar Driven Desiccant Evaporative Cooling Systems
A. Preisler¹
¹Austrian Institute of Technology
- 17:45 A Review of Solar Cooling Technologies for Residential Applications in Canada
C. Baldwin¹, C. Cruickshank¹
¹Carleton University
- 18:00 System Evaluation of Combined Solar & Heat Pump Systems
R. Dott¹, T. Afjei¹, A. Genkinger¹
¹Institut Energie am Bau - FHNW

19:00 - 01:00 Conference Dinner SHC Award Ceremony

Tuesday, 10 July 2012

09:00 - 10:45 Keynote Lectures (Solar Buildings)

- 09:00 tbd
A. Athienitis
- 09:20 tbd
C. Christensen
NREL
- 09:40 tbd
N. Fisch
IGS TU Braunschweig
- 10:00 tbd
D. Johnston
What's Working, Inc.

10:45 - 11:15 Coffee Break

11:15 - 13:00 District Heating

- 11:15 Evaluation of the Potential of Large Solar Heating Plants in Spain
L.M. Serra¹, M. Guadalfajara¹, M.A. Lozano¹
¹ *University of Zaragoza*
- 11:30 IEA-SHC Task 45: Large Solar Heating/Cooling Systems, Seasonal Storage, Heat Pumps
J.E. Nielsen¹
¹ *SolarKey Int.*
- 11:45 The Performance of a High Solar Fraction Seasonal Storage District Heating System – Five Years of Operation
B. Sibbitt¹, J. Carriere², R. Djebbar¹, J. Kokko³, D. McClenahan¹, J. Thornton⁴, B. Wong²
¹ *Natural Resources Canada*
² *SAIC Canada*
³ *Enermodal Engineering*
⁴ *Thermal Energy Systems Specialists*
- 12:00 Stadtwerk: Lehen
H. Strasser¹
¹ *SIR - Salzburg Institute for Regional Planning and Housing*

12:15 Reducing Piping Size in Solar Thermal Communities By Using Liquid Desiccants and Local Storage

J. Burch¹, A. Boranian², E. Kozubal¹, J. Woods¹

¹ National Renewable Energy Laboratory

² University of Colorado

11:15 - 13:00 Solar Cooling and Refrigeration

11:15 Performance Comparison of Small Solar Thermal Cooling Systems with Conventional Plants Assisted by Photovoltaic through the Use of Life Cycle Assessment

M. Beccali¹, M. Cellura¹, P. Finocchiaro¹, F. Guarino¹, S. Longo¹, B. Nocke¹

¹ University of Palermo

11:30 Solar Cooling in MW Scale – World's Largest Solar Cooling Systems in Singapore and the USA

H. Blazeck¹, C. Holter¹

¹ SOLID GmbH

11:45 Solar Cooling Systems Utilizing Concentrating Solar Collectors - An Overview

O. Ayadi¹, M. Motta¹

¹ Politecnico di Milano

12:00 Solar Driven Cold Rooms for Industrial Cooling Applications

M. Berger¹, J. Döll², A. Häberle³, A. Morgenstern², C. Weber², M. Weckesser⁴

¹ Industrial Solar GmbH

² Fraunhofer ISE

³ PSE AG

⁴ Kramer GmbH

12:15 Advanced Solar Driven Heat Pump Concepts for Commercial Buildings

P. Le Lievre¹, M. Greaves¹, A. Tanner¹

¹ Chromasun

12:30 Thermal Energy Storage Implementation Using Phase Change Materials in a Solar Cooling and Refrigeration Applications

L.F. Cabeza¹, A. Gil¹, L. Miró¹, E. Oró¹, G. Peiró¹, S. Álvarez²

¹ University of Lleida

² University of Sevilla

11:15 - 13:00 Durability and Reliability

- 11:15 Ageing Tests with Components for Solar Thermal Collectors
K. Weiß¹, T. Kaltenbach¹, M. Koehl¹, M.R. Kurth¹
¹ *Fraunhofer ISE*
- 11:30 Fracture Toughness of Polyethylene Thin Films used in Solar Applications
H. Ge¹, S. Mantell¹
¹ *University of Minnesota*
- 11:45 Test Result Analysis of the Stagnation Effect on the Thermal Performance of Solar Collector
Z. Xinyu¹, L. Bin¹, Z. Lei², Z. Ruicheng¹, D. Yu², H. Zhulian²
¹ *China Academy of Building Research*
² *National Center for Quality Supervision and Testing of Solar Heating Systems*
- 12:00 Solar Absorber Durability Tests in Saline Environment
A. Duta¹, D. Ciobanu¹, M. Dudita¹, E. Ienei¹, I. Visa¹
¹ *Transilvania University of Brasov*
- 12:15 A Review of Strategies for the Control of High Temperature Stagnation in Solar Collectors and Systems
S. Harrison¹, C. Cruickshank²
¹ *Queen's University*
² *Carleton University*
- 12:30 Venting and Degasification of Solar Circuits
K. Rühling¹, M. Heymann¹, F. Panitz¹
¹ *TU Dresden*

13:00 - 14:00 Lunch Break

14:00 - 15:45 Solar Cooling and Refrigeration

- 14:00 Analysis of the Performance of a GAX Hybrid (Solar - LPG) Absorption Refrigeration System Operating with Temperatures from Solar Heating Sources
M.A. Barrera¹, R. Best¹, J. Chan¹, O. García¹, V. Gómez¹, N. Velasquez²
¹ *Centro de Investigación en Energía*
² *Universidad Autónoma de Baja California*
- 14:15 Calculation of Performance Indicators for Solar Cooling, Heating and Domestic Hot Water Systems
J. Nowag¹, F. Boudehenn¹, A. Le Denn², F. Lucas³, O. Marc³, M. Radulescu⁴
¹ *CEA LITEN INES*
² *TECSOL*
³ *PIMENT, Université de La Réunion*
⁴ *EDF R&D, Département EnerBAT*

- 14:30 Development of a 5 kW Cooling Capacity Ammonia-Water Absorption Chiller for Solar Cooling Applications
F. Boudehenn¹, D. Chèze¹, H. Demasles¹, X. Jobard¹, P. Papillon¹, J. Wyttenbach¹
¹CEA LITEN INES
- 14:45 Latent Heat and Cold Storage in a Solar Driven Steam Jet Ejector Chiller
C. Pollerberg¹, C. Doetsch¹, M. Kauffeld², T. Oezcan²
¹Fraunhofer UMSICHT
²Hochschule Karlsruhe
- 15:00 Operational Performance Results of an Innovative Solar Thermal Cooling and Heating Plant
M. Riepl¹, R. Gurtner¹, C. Schweigler¹
¹ZAE Bayern

14:00 - 15:15 Building Integration

- 14:00 A Control Algorithm for Optimal Energy Performance of a Solarium/Greenhouse with Combined Interior and Exterior Motorized Shading
D. Bastien¹, A. Athienitis¹
¹Concordia University
- 14:15 Energy Performance Evaluation of a Building-Integrated Photovoltaic-Thermal System
J. Kim¹
¹Green Home Energy Technology Research Center/Kongju National University
- 14:30 Evaluation of Turbulence Models for Airflow and Heat Transfer Prediction in BIPV/T Systems Optimization
S. Li¹, P. Karava¹
¹Purdue University
- 14:45 Integrating Solar Heating and PV Cooling into the Building Envelope
S. Farah¹
¹Barbara Hardy Institute at University of South Australia
- 15:00 SHC with Transparent Façade Collectors in a Demo Building
C. Maurer¹, P. Di Lauro¹, J. Hafner², S. Jordan², F. Knez², T.E. Kuhn¹, T. Pflug¹
¹Fraunhofer ISE
²Slovenian National Building and Civil Engineering Institute (ZAG)

14:00 - 15:45 Thermal Storage

- 14:00 Adsorption properties of porous materials for solar thermal energy storage and heat pump applications
J. Jänchen¹, H. Stach²
¹ *Technical University of Applied Sciences Wildau*
² *ZeoSolar e.V.*
- 14:15 Concepts of Thermochemical Energy Storage - Current Status
B. Mette¹, H. Drück¹, H. Kerskes¹
¹ *University of Stuttgart*
- 14:30 Development of a Seasonal Thermochemical Storage System
R. Cuypers¹, C. Finck¹, E. Henquet¹, H. Oversloot¹
¹ *TNO*
- 14:45 Development of Seasonal Heat Storage based on Stable Supercooling of a Sodium Acetate Water Mixture
S. Furbo¹, E. Andersen¹, Z. Chen¹, J. Fan¹, B. Perers¹
¹ *Technical University of Denmark*
- 15:00 Evaluation of the Transient Flow, Temperature and Mass Transfer in a Hybrid Absorption/Sensible Storage Tank
J. Quinnell¹, J. Davidson¹
¹ *University of Minnesota*
- 15:15 Hydration and Dehydration of Salt Hydrates and Hydroxides for Thermal Energy Storage - Energy Release and Cyclability
H.U. Rammelberg¹
¹ *Leuphana University Lüneburg*
- 15:45 - 16:15 **Coffee Break**

16:15 - 18:00 Solar Heat for Industrial Processes

- 16:15 High Efficiency, Dual Mode Solar Thermal System in Process Heating & Cooling
G. Deshpande¹, R.R. Sonde¹
¹ *Thermax Ltd.*
- 16:30 History and Status of Solar Process Heat in the United States
M. Thornbloom¹
¹ *Kelelo Engineering*

- 16:45 IEA SHC Task 49/IV: Solar Process Heat for Production and Advanced Applications
C. Brunner¹, E. Frank², B. Muster¹, W. Platzer³
¹AEE INTEC
²SPF Institut für Solartechnik
³Fraunhofer ISE
- 17:00 Perspective of Solar Thermal for Low temperature Industrial Process Heat Applications in India with Case Studies
C. Palaniappan¹
¹Planters Energy Network
- 17:15 Solar Process Heat for Sustainable Automobile Manufacturing
C. Zahler¹, O. Iglauer²
¹Industrial Solar GmbH
²Dürr Systems GmbH
- 17:30 Assessment of Medium Temperature Collectors for Process Heat
V. Martínez Moll¹, R. Pujol Nadal¹
¹Universitat de les Illes Balears
- 17:45 Design and Installation of California's Largest Industrial Solar Preheat System
M. Rubio¹
¹FAFCO, INC.

16:15 - 18:00 Thermal Storage

- 16:15 Low Temperature Chemical Reaction Systems for Thermal Storage
M. Fischer¹, S. Bruzzano¹, G. Deerberg¹, B. Egenolf-Jonkmanns¹, T. Marzi¹, M. Tyukavina¹, B. Zeidler-Fandrich¹
¹Fraunhofer UMSICHT
- 16:30 Thermal Energy Storage by PCM-air Heat Exchangers: Temperature Maintenance in a Room
P. Dolado¹, M. Delgado¹, A. Lazaro¹, J.M. Marin¹, J. Mazo¹, C. Peñalosa¹, B. Zalba¹
¹University of Zaragoza
- 16:45 Thermally Enhanced Paraffin for Solar Applications
H. Paksoy¹, N. Sahan¹
¹Cukurova University
- 17:00 Thermo-Chemical Energy Storage for Low and High Temperature Applications - Results of a Large Joint Research Project
H. Kerskes¹, H. Drück¹, B. Mette¹
¹University of Stuttgart

- 17:15 Transfer of Laboratory Results on Closed Sorption Thermo- Chemical Energy Storage to a Large-Scale Technical System
A. Lass-Seyoum¹, M. Blicker², D. Borozdenko¹, T. Friedrich¹, T. Langhof²
¹*ZeoSys GmbH*
²*Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB*
- 17:30 The Effect of Discharge Configurations on the Thermal Behaviour of a Multi-tank Storage System
R. Dickinson¹, C. Cruickshank¹, S. Harrison²
¹*Carleton University*
²*Queen's University*
- 17:45 Parameters to Take Into Account when Developing a New Thermochemical Energy Storage System
L.F. Cabeza¹, C. Barreneche¹, A.I. Fernández², X. Fontanet², I. Martorell¹, A. Solé¹
¹*University of Lleida*
²*University of Barcelona*

16:15 - 17:00 Solar Building Renovation

- 16:15 Advanced Housing Renovation with Solar and Conservation
F. Salvesen¹
¹*Asplan Viak AS*
- 16:30 LowEx Solar Building System
M. Bättschmann¹
¹*ETH Zürich*
- 16:45 Solar Integrated Roof: Electrical and Thermal Production for a Building Renovation
L.C. Tagliabue¹, N. Aste¹
¹*Politecnico di Milano*

19:00 - 01:00 CALSEIA Summerfest

Wednesday, 11 July 2012

09:00 - 10:45 **Solar Architecture**

- 09:00 Achieving Solar Energy in Architecture
M. Wall¹, M. Dubois¹, M. Horvat², O.B. Jørgensen³, M.C. Munari Probst⁴, C. Roecker⁴
¹Lund University
²Ryerson University
³Esbensen Consulting Engineers
⁴EPFL-LESO
- 09:15 Comfort Evaluation in an Urban Boulevard by Means of Evaporative Wind Towers
S. Soutullo¹, M.d.R. Heras Celemín¹, R. Olmedo¹, C. Sanjuan Guaita¹, M.N. Sánchez Egado¹
¹CIEMAT
- 09:30 Experimental PIV Techniques Applied to the Analysis of Natural Convection in Open Joint Ventilated Facades
C. Sanjuan Guaita¹, M.d.R. Heras Celemín¹, M.N. Sánchez Egado¹
¹CIEMAT
- 09:45 Office Buildings Cooling Need in the Italian Climatic Context: Assessing the Performances of Typical Envelopes
S. Ferrari¹, V. Zanotto¹
¹Politecnico di Milano
- 10:00 Solar Energy as a Design Parameter in Urban Environments
J. Kanters¹, M. Horvat²
¹Lund University
²Ryerson University
- 10:15 Spectral Light Transmission Measure and Radiance Model Validation of an Innovative Transparent Concrete Panel for Façades
A.G. Mainini¹, S. Cangiano², T. Poli¹, M. Zinzi³
¹Politecnico di Milano
²CTG Italcementi Group S.p.a.
³ENEA - UTEE ERT

09:00 - 10:45 **Innovative Components**

- 09:00 Black Pigmented Polypropylene Materials for Solar Absorbers
M. Kurzböck¹, R.W. Lang¹, G.M. Wallner¹
¹ IPMT/JKU Linz
- 09:15 Evaluation of the Prototype IP-Solar: A Web-based Monitoring and Diagnostic Tool for Solar Thermal Systems
B. Gerardts¹, A. Dröscher², C. Holter¹, P. Ohnewein³, K. Schgaguler⁴
¹ S.O.L.I.D.
² TU Graz
³ AEE INTEC
⁴ Cerebra
- 09:30 Experimental Investigations of Intelligent Solar Heating Systems for Single Family Houses
E. Andersen¹, Z. Chen¹, J. Fan¹, S. Furbo¹, B. Perers¹
¹ Technical University of Denmark
- 09:45 Thermotropic Glazings for Overheating Protection
A. Weber¹, K. Resch²
¹ Polymer Competence Center Leoben GmbH
² University of Leoben
- 10:00 Unglazed PVT Collectors as Additional Heat Source in Heat Pump Systems with Borehole Heat Exchanger
E. Bertram¹, G. Rockendorf¹
¹ Institute for Solar Energy Research Hameln (ISFH)
- 10:15 Vacuum Insulation Panels - A Promising Solution for High Insulated Tanks
B. Fuchs¹, H. Klaus¹
¹ Georg Simon Ohm University of Applied Sciences

09:00 - 09:17 **Market Strategies and Policy Issues**

- 09:00 Financing of Large Solar Thermal Systems for Cooling and Process Heat
J. Buchinger¹, H. Blazek¹, C. Holter¹
¹ S.O.L.I.D.

09:17 - 10:45 Market Strategies and Policy Issues

- 09:17 Best Policy Practices on the State Level for Solar Heating & Cooling in the U.S.
*K. Stainken*¹
¹*Solar Energy Industries Association (SEIA)*
- 09:32 Development of a Technology Roadmap for Solar Thermal Cooling in Austria
*A. Preisler*¹
¹*Austrian Institute of Technology*
- 09:47 Learning from interventions aimed at mainstreaming solar hot water in the Australian market
*K. Guthrie*¹, *D. Ferrari*¹, *S. Ott*¹, *R. Thomson*¹
¹*Sustainability Victoria*
- 10:02 Policy Pitfalls of SWH
*E. Uken*¹
¹*Energy Institute*
- 10:17 Solar Thermal Plants for Industrial Process Heat in Tunisia: Economic Feasibility Analysis and Ideas for a New Policy
*M. Calderoni*¹, *S. Moretta*², *M. Njeimi*³
¹*Politecnico di Milano*
²*MEDREC - Mediterranean Renewable Energy Centre*
³*ANME*
- 10:32 From Demonstration Projects to Volume Market
*T. Haavik*¹, *E. Mlecnik*², *A. Rödsjö*³
¹*Segel AS*
²*TU Delft*
³*The Norwegian Housing Bank*

10:45 - 11:15 Coffee Break

11:15 - 13:00 Keynote Lectures (Innovations in SHC Systems)

- 11:15 Solar Heating and Air-Conditioning of Buildings
H. Henning
Fraunhofer Institute for Solar Energiesystem ISE)
- 11:35 Polymer Materials
R.W. Lang
IPMT/JKU Linz

11:55 Medium Temperature Collectors
W. Platzer
Fraunhofer ISE

12:15 Seasonal Storage
A. Hauer
ZAE Bayern

13:00 - 14:00 Lunch Break

14:00 - 15:45 Keynote Lectures (Market and Policies)

14:00 tbd
H. Ming
Himin Solar Energy Group Co.,Ltd

14:20 Rating and Certification
O. Pilgaard
Heliodyne

14:40 Economic Analysis
N. Stimmel
Pacific Gas & Electric Company

15:50 - 16:20 Coffee Break

16:15 - 18:00 Panel Discussion

Thursday, 12 July 2012

14:00 - 18:00 Technical Tour