

Program 7th International Workshop on Solar Air Conditioning

Tuesday, October 31, 2017

KEYNOTE

08:30 Solar Cooling Potential in the MENA Region
Daniel Mugnier, TECSOL

SOLAR COOLING SYSTEM INTEGRATION

Chair: Stephen D. White (CSIRO)

09:00 Welcome to the SolAirCon Workshop
Daniel Mugnier, TECSOL

09:10 Energy Storage for PV-Driven Air-Conditioning for an Off-Grid Resort – A case study
Christoph Luerssen, Solar Energy Research Institute of Singapore (SERIS)

09:30 Solar-Electric Driven Heating and Cooling System with PCM-Storage for Improved Grid Connection
Richard Schex, Bavarian Center for Applied Energy Research (ZAE Bayern)

09:50 Multi-Functional Façade with PV for Solar Autonomous Cooling Applications
Tim Selke, AIT Austrian Institute of Technology GmbH

10:10 First Steps in Design and Simulation of the Control Unit of a Continuous Cooling System Driven by Solar Thermal Energy and Using an Aquifer Thermal Storage
Maryam Al Lawati, GFZ German Research Center for Geosciences

10:30 **Coffee Break**

INNOVATIONS IN SOLAR COOLING TECHNOLOGY

Chair: Marco Beccali (UNIPA)

11:00 Testing and Simulation of a Solar Diffusion-Absorption Refrigeration System for Low-Cost Solar Cooling in India
James Freeman, Imperial College London

11:20 Efficient Solar Cooling by Using Variable Effect LiBr-H₂O Absorption Chiller and Linear Fresnel Solar Collector with Cavity Receiver
Yanjun Dai, Shanghai Jiao Tong University

11:40 The “All in One” Smart Solar Cooling System
Esam Elsarrag, GORD

12:00 Development of a Low Carbon Coupling Device for Solar Cooling (Photovoltaic + Heat Pump)
Daniel Mugnier, TECSOL
presented by: Philippe Esparcieux, ATISYS CONCEPT

12:20 Assessment of a Solar Powered Refrigerator Equipped with Thermal Storage for a Dairy Application
Adriana-Clemencia Coca Ortegón, Universitat Rovira i Virgili

12:40 Sensitivity Analysis on the Technical and Economic Performance of Thermal and PV Driven Solar Heating and Cooling Systems
Daniel Neyer, University of Innsbruck

7th International Workshop on Solar Air Conditioning

*in conjunction with SWC and SHC 2017
31 Oct 2017, Abu Dhabi, UAE*

13:00 Lunch

14:00 POSTER SESSION

Solar Refrigeration and Solar Air Conditioning

- TUE-13 Design Development and Performance Evaluation of Solar Energy Driven Micro-Cold Storage for Fruits and Vegetables Produce of Smallholder Farmers in Ethiopia
Biruk Abate, Bahir Dar University, Bahir Dar Institute of Technology
- TUE-14 Solar Thermal Operated Life-Supporting Systems Based on Ejector Technologies
Olexiy Buyadgie, Wilson Engineering Technologies
presented by: Oleksii Drakhnia, Kyushu University
- TUE-15 Model-Based Simulation and Optimization of a Solar Assisted Absorption Air-Conditioning System with Dynamic Cooling Demand
Ghulam Qadar Chaudhary, University of Engineering and Technology Taxila Pakistan
- TUE-16 Increasing the Efficiency of the Solar Thermal Assisted Refrigeration Technology
Olexiy Buyadgie, Wilson Engineering Technologies
- TUE-17 Solar-Powered Air-Conditioning System Using Absorption Refrigeration Cycle and High Efficiency Cooling Technologies
Caterina Fella, Politecnico di Milano
- TUE-18 Theoretical Analysis of Indirect and Direct Solar Regenerators for Liquid Desiccant Systems
Fernando Manuel Gomez Castro, University of Applied Sciences Stuttgart
- TUE-19 Experimental Study of a Solar Collector/Regenerator for Liquid Desiccant Systems
Fernando Manuel Gomez Castro, University of Applied Sciences Stuttgart
- TUE-20 Highest Efficiency Ice Storage for Solar Cooling Systems – Experiences with a Vacuum Ice Slurry Cold Thermal Energy Storage
Christoph Steffan, ILK Dresden
presented by: Carsten Heinric, ILK Dresden
- TUE-21 Establishment and Theoretical Analysis of a Solar Driven $\text{NH}_3\text{-H}_2\text{O}$ Resorption Heat Pump Cycle
Teng Jia, Shanghai Jiao Tong University
- TUE-22 Preliminary Assessment of a Solar Absorption System for Air Conditioning Applications
Jose Camilo Jimenez Garcia, Instituto de Energías Renovables, UNAM
- TUE-23 Potential Application of Commercial Refrigerants as Adsorbate in Adsorption Refrigeration System
Michael John, University of Dar es Salaam
- TUE-24 Modeling and Optimization for Contribution Rates of Solar Heating and Cooling Systems in Building Energy-Saving
Bojia Li, China Academy of Building Research
- TUE-25 Optimum Design and Performance Prediction of an Solar Thermal Adsorption Heat Pump Applying Natural Mesoporous Materials Impregnated with Chloride by Developed 3-D Numerical Simulation
Katsunori Nagano, Hokkaido University
- TUE-26 Control Strategy Approach Based on the Operational Results of a Small Capacity Direct Air-Cooled LiBr-Water Absorption Chiller
Joan Farnós, Technical University of Catalonia-BarcelonaTech
presented by: Joaquim Rigola, Universitat Politècnica de Catalunya

7th International Workshop on Solar Air Conditioning

*in conjunction with SWC and SHC 2017
31 Oct 2017, Abu Dhabi, UAE*

- TUE-27 A Simple Approach for the Simulation and Characterization of Solar Driven Absorption Cooling Systems Based on the Characteristic Equation Method
Martin Schröder, Technische Universität Berlin
- TUE-28 Increase of the Ventilation Effectiveness of Solar Chimneys with Consideration of Wind-Effects Applying CFD Simulations and Measurements
Lukas Schwan, University of Applied Sciences Munich
- TUE-29 Preliminary Assessment of a Solar Absorption Air Conditioning System Developed and Installed in a Coastal Zone of Mexico
Pedro Arturo Guillermo de Jesús Soto Parra, Instituto de Energías Renovables UNAM
- TUE-30 Experimental Study on Solar Driven Dehumidification System with Silica Gel Coated Heat Exchanger
Zhao Yao, Shanghai Jiao Tong University

15:30 Coffee Break

PRACTICAL EXPERIENCE WITH SOLAR COOLING

Chair: Christian Schweigler (Munich University of Applied Sciences)

- 16:30 Practical Efforts on SHC System with Passive House in China
Wei Zheng, Yazaki Energy System Corporation Beijing
- 16:50 Monitoring and Energy Performance Assessment of an Advanced Dec Hvac System in Morocco
Marco Beccali, Università di Palermo, Dept. DEIM
- 17:10 Solar Cooling Around the World – Innovative Low Carbon Solutions for Nicaragua, Singapore and Austria
*Nicole Olsacher, S.O.L.I.D. Gesellschaft für Solarinstallation und Design mbH
presented by: Christian Holter S.O.L.I.D. Gesellschaft für Solarinstallation und Design mbH*
- 17:30 First Solar-Driven Air Conditioning System in Kuwait Using Double-Stage Absorption Chiller and High-Vacuum Solar Thermal Flat Plates
Jonathan Koifman, TVP Solar
- 17:50 Performance Analysis of Solar Desiccant Cooling System Integrated with M-Cycle Evaporative Cooler
Ghulam Qadar Chaudhary, University of Engineering and Technology Taxila Pakistan