

7th International Workshop on Solar Air Conditioning

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

(as of September 13)

Program 7th International Workshop on Solar Air Conditioning

Tuesday, October 31, 2017

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

SOLAR COOLING SYSTEM INTEGRATION

Chair: Stephen D. White (CSIRO)

08:50 Welcome to the SolAirCon Workshop
Daniel Mugnier, TECSOL

09:00 Energy Storage for PV-Driven Air-Conditioning for an Off-Grid Resort – A case study
Christoph Luerssen, Solar Energy Research Institute of Singapore (SERIS)

09:20 Solar-Electric Driven Heating and Cooling System with PCM-Storage for Improved Grid Connection
Richard Schex, Bavarian Center for Applied Energy Research (ZAE Bayern)

09:40 Multi-Functional FaÇade with PV for Solar Autonomous Cooling Applications
Tim Selke, AIT Austrian Institute of Technology GmbH

10:00 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

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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

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- 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)

- 16:20 Practical Efforts on SHC System with Passive House in China
Wei Zheng, Yazaki Energy System Corporation Beijing
- 16:40 Monitoring and Energy Performance Assessment of an Advanced Dec Hvac System in Morocco
Marco Beccali, Università di Palermo, Dept. DEIM
- 17:00 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*
- 17:20 First Solar-Driven Air Conditioning System in Kuwait Using Double-Stage Absorption Chiller and High-Vacuum Solar Thermal Flat Plates
Jonathan Koifman, TVP Solar
- 17:40 Performance Analysis of Solar Desiccant Cooling System Integrated with M-Cycle Evaporative Cooler
Ghulam Qadar Chaudhary, University of Engineering and Technology Taxila Pakistan
- 18:00 Closing remarks
Daniel Mugnier, TECSOL