

sol.e.h.² – solar hvac and passive solutions directing to high energy efficient buildings in hot and humid climates of Guangdong

IEA SHC Task 65 – Solar Cooling for the Sunbelt regions



Energy saving in buildings is important to modern urbanization and especially challenging under the climatic conditions of Guangdong. Minimized energy demand for heating (domestic hot water), ventilation and air conditioning (HVAC) in buildings is a major premise for the implementation of solar HVAC systems. The passive house concept and solar HVAC complement each other well and lead to a joint integral solution far beyond state of the art. Innovative applications of solar cooling and heating components and new building integration methods for this very specific climate in Guangdong region are the core of the project. The joint integral system will further be developed under appropriate innovative business models.

Public workshop sol.e.h.² & IEA SHC Task 65

Compared to standard construction practice in China, the target joint integral building and solar HVAC solution can save 80 to 90% of heating energy and approximately 60% of energy for cooling and dehumidification based on useful energy. Through the solar concept the seasonal performance factor can be increased significantly, and electricity grid stress can be reduced.

The final workshop will focus on

- International trends on energy efficient buildings in hot and humid climates and solar heating and cooling solutions by invited experts
- Present the necessary steps to optimize the buildings and reduce loads towards certifiable passive house buildings
- Explain the design of solar heating and cooling solutions and discuss the techno-economic assessment results compared to state of the art and other renewable solutions
- Give insides on the practical experiences during the implementation of a demo plant and the Hardware-in-the-Loop laboratory tests

On behalf of the Chinese/Austrian consortium and IEA SHC Task experts, we invite you to the final workshop.

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Bundesministerium
Klimaschutz, Umwelt,
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Innovation und Technologie

Agenda - public workshop sol.e.h.² & IEA SHC Task 65 Dec. 2nd 2021 15:00-19:00 (CST) / 08:00-12:00 (CET), Online

CET / CST 07:45 / 14:45	Presentation will be in English without translations Check-in, technical clearance	speakers Prof. Dr. Uli JAKOB
08:00–08:20 / 15:00–15:20	Welcome Chinese/Austrian project leaders IEA SHC TCP Austrian Promotion Agency	Dr. He QI / Dr. Daniel NEYER Prof. Dr. He TAO Clemens STRICKNER
08:20–09:20 / 15:20–16:20	Invited Speakers Building Energy Consumption Prediction based on Big Data Trends and development of SHC systems Passive Houses in hot and humid climates Q&A	Dr. Yi ZHANG / Yuhang ZHANG Prof. Dr. Yanjun DAI Dr. Jürgen SCHNIEDERS
09:20–10:00 / 16:20–17:00	Optimizing of buildings towards integral solutions Efficiency as the key to renewable energy supply Q&A	Laszlo LEPP
10:00–10:15 / 17:00–17:15		Break
10:15–10:45 / 17:15–17:45	Pilot plant: design and experiences of implementation of building and solar HVAC Q&A	Bingjie YANG Phoebe LIU
10:45–11:15 / 17:45–18:15	Laboratory measurements: Hardware-in-the-Loop testing for optimized system design of solar HVAC Q&A	Manuel OSTHEIMER
11:15–11:55 / 18:15–18:55	Solar heating and cooling system, design of hybrid systems and techno-economic assessment Q&A	Dr. Daniel NEYER Prof. Dr. Uli JAKOB
11:55–12:00 / 18:55–19:00	Summary and conclusion	Dr. Daniel NEYER

Registration until November 29th at office@neyer-brainworks.at. After registration you will receive a GoToMeeting link to the final Workshop via email on Dec. 1st, 2021.

The international project team

