IEA SHC Task 66: Solar Energy Buildings
Integrated solar energy supply concepts for climate-neutral buildings and communities for the “City of the Future”

Industry Workshop No 5
Solar Energy Buildings
Design, Planning and Operation in Practice

6th February 2024
13:00 – 16:15 hrs CET (Central European Time, UTC+1)

Virtual: https://unistuttgart.webex.com/unistuttgart/j.php?MTID=mdbb2299be0f0d52f2c26348092052111

Manager Task 66: Harald Drück, IGTE, University of Stuttgart, Germany
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Leader Subtask A of Task 66: Frank Späte, Technical University of Applied Sciences Amberg-Weiden
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Task 66 (Solar Energy Buildings) – Industry Workshop No 5

Intro to Dr. Harald Drück

- Working at University of Stuttgart, Institute for Building Energetics, Thermotechnology and Energy Storage (IGTE), former ITW, for +25 years, as research coordinator, leader “sustainable buildings and smart city concepts” and head “solar testing”

- Main field of activities: solar thermal, heat storage, Smart Cities, solar and energy efficient buildings, ..

- Head of SWT (Solar- und Wärmetechnik / Solar- and Heat Technolgy Stuttgart)

- Chairman of the Global Solar Certification Network

- Adjunct Professor at Rajagiri School of Engineering & Technology (RSET), Rajagiri, Kochi, India

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Scope (1/2)

- IEA SHC Task 66 focuses on the development of economic and ecologic energy supply concepts for buildings with high solar fractions of at least 85% of the heat demand, 100% of the cooling demand and at least 60% of the electricity requirements for moderate, e.g. central European climate conditions.
Scope (2/2)

• Target: Households and e-mobility of multi-storey residential buildings, single buildings and building blocks or distinguished parts of a city (communities) for both, new buildings and the comprehensive refurbishment of existing buildings

• Key aspects:
  - focus on the overall energy supply of the building:
    This means
    - heat,
    - cold and
    - power
  - synergetic consideration of the interaction with grid infrastructures (electricity and heat) in the sense of bidirectional flexibility
Subtasks of Task 66 – structure

Subtask A: Boundary Conditions, KPIs, Definitions and Dissemination
Lead: Frank Späte, OTH-AW, Germany

Subtask BC: New and existing buildings and building blocks / communities
Lead: Elsabet Nielsen, DTU, Denmark
Co-Lead: Xinyu Zhang and Wenbo Cai, China Academy of Building Research (CABR), Beijing, China

Subtask D: Current and future technologies and components
Lead: Michael Gumhalter and Thomas Ramschak, AEE INTEC, Austria
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Task Information
DURATION
July 2021 — September 2024

TASK MANAGER
Dr. Harald Drück
GERMANY
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https://task66.iea-shc.org/
PROGRAM

13:00 – 13:15 Welcome and Presentation of Task 66
Dr. Harald Drück, Task Manager of Task 66, Institute for Building Energetics, Thermotechnology and Energy Storage (IGTE), University of Stuttgart, Germany
Prof. Frank Späte, OTH-AW, Germany

13:15 – 13:40 The Jenni system - 45 years of experience in solar thermal applications for buildings
Marcel Krebs, Jenni Energietechnik, Switzerland

13:40 – 14:05 Combining active and passive solar concepts in building design: Case study of prabha Bhavan, MNIT Jaipur, India
Prof. Dr.-Ing. Jyotirmay Mathur, Malaviya National Institute of Technology, Centre for Energy and Environment, India

14:05 – 14:30 Design, construction and operation of a solar thermal family home
Michael Hövel, Sonnenhaus Institut e.V. - Ingenieurbüro Exergenion, Germany
Break ....

... until 14:45 hrs (CET)
14:45 – 15:10  **Digitalising the building integrated PV**  
Dr. Rebecca Yang, Solar Energy Application Lab, School of Property, Construction and Project Management, RMIT University Melbourne, Australia

15:10 – 15:35  **Thin-Film Solar for Buildings: How Ascent Solar Technologies is Changing the Game with Lightweight, Flexible PV**  
Paul Warley, CEO of Ascent Solar Technologies, Inc., USA

15:35 – 16:00  **Solar Concepts and monitoring results of buildings with high solar thermal fraction in Austria**  
Walter Becke, AEE INTEC, Austria

16:00 – 16:15  **Final discussion and closing**  
Dr. Harald Drück, Task Manager Task 66, IGTE, University of Stuttgart, Germany
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