



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=mdfb2299bef0d652f2c28348092052111>

Manager Task 66: Harald Drück, IGTE, University of Stuttgart, Germany
Email: harald.drueck@igte.uni-stuttgart.de

Leader Subtask A of Task 66: Frank Späte, Technical University of Applied Sciences Amberg-Weiden
Email: f.spaeete@oth-aw.de

Task 66 (Solar Energy Buildings) – Industry Workshop No 5

Intro to Dr. Harald Drück

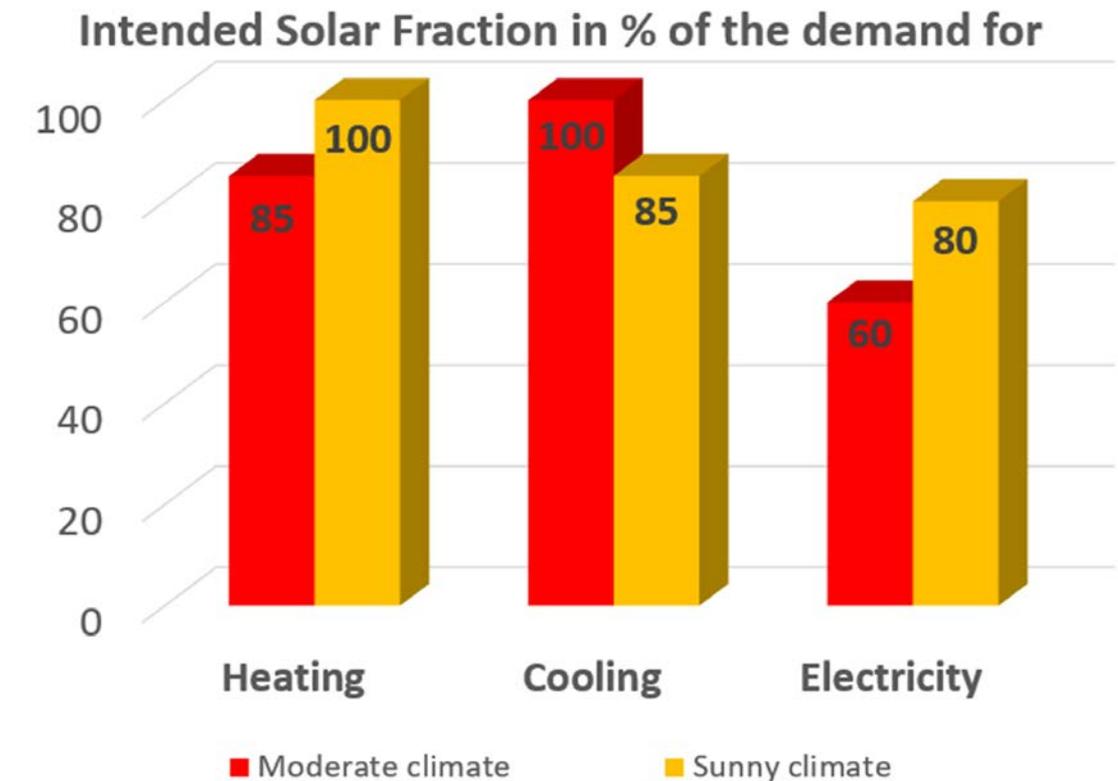
- Working at University of Stuttgart, Institute for Building Energetics, Thermotechnology and Energy Storage (IGTE), former ITW, for +25 years, as research coordinator, leader “sustainable buildings and smart city concepts” and head “solar testing”
- Main field of activities: solar thermal, heat storage, Smart Cities, solar and energy efficient buildings, ..
- Head of SWT (Solar- und Wärmetechnik / Solar- and Heat Technology Stuttgart)
- Chairman of the Global Solar Certification Network
- Adjunct Professor at Rajagiri School of Engineering & Technology (RSET), Rajagiri, Kochi, India
-



Task 66 (Solar Energy Buildings) – Industry Workshop No 5

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.



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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

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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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https://task66.iea-shc.org

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ABP 3

SHC TASK 66

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TASK 66

Solar Energy Buildings

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Task Information

DURATION
July 2021 — September 2024

TASK MANAGER
Dr. Harald Drück
GERMANY
harald.drueck@igte.uni-stuttgart.de

IEA SHC – The world's largest *Solar Heating and Cooling* research network

<https://task66.iea-shc.org/>

Task 66 (Solar Energy Buildings) – Industry Workshop No 5

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)



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- 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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