

DATE

Tuesday, October 09, 2018, 10 am ending
Wednesday, October 11, 2018, 11.30 am

VENUE

Hotel campus.guest
Universitätsstrasse 34
70569 Stuttgart-Vaihingen
Germany

REGISTRATION FEE

€ 250

REGISTRATION

Online only: <https://iwcb2018.besl-eventservice.de>

ACCOMODATION

We have reserved some hotel room contingents for you in Stuttgart and recommend to book early!
More informations can be found on the website
<https://iwcb2018.besl-eventservice.de>

CONTACT

Chairman:



André Thess, DLR and University of Stuttgart

Co-Chairman:

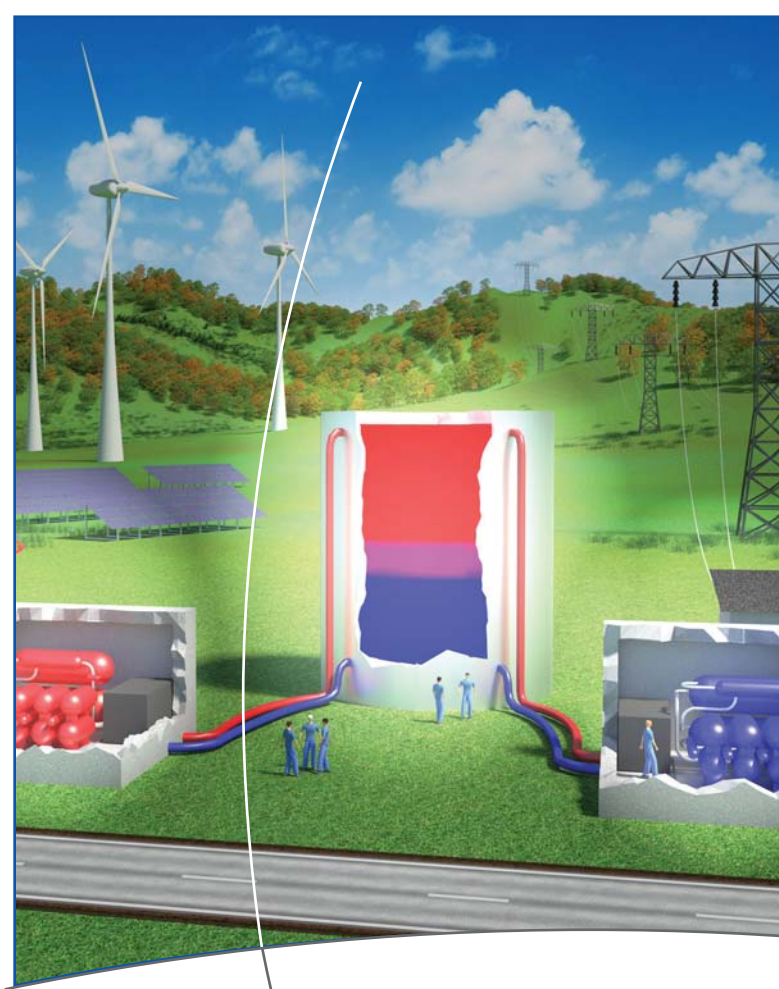


Thomas Wetzel, Karlsruhe Institute of Technology

Head of Organizing Committee:



Henner Kerskes, University of Stuttgart
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Power-Heat-Power

International Workshop on Carnot Batteries

October 9-10, 2018

Stuttgart, Germany



Universität Stuttgart



Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center

International Workshop on Carnot Batteries

Motivation

Carnot Batteries are an emerging technology for the inexpensive and site-independent storage of electric energy at the gigawatt hour scale. Also referred to as “Pumped Thermal Electricity Storage” (PTES) or “Pumped Heat Electricity Storage” (PHES), a Carnot Battery transforms electricity into heat, stores the heat in inexpensive storage media like water or molten salt and transforms the heat back to electricity when required.

Carnot Batteries have the potential to solve the global storage problem of renewable electricity in a more economic and environmentally friendly way than conventional batteries. Although several concepts have been proposed for Carnot Batteries, there exist neither a comprehensive techno-economic assessment of this technology nor laboratory or plant scale demonstration facilities that provide the energy storage community with scientific data.

Goal of the Workshop

- > Bringing together experts in energy storage, in particular thermal energy storage, in order to assess the state-of-the-art of research and demonstration of Carnot Batteries
- > Establishing an international platform that coordinates research in Carnot Batteries and makes it internationally visible.

DAY 1 - TUESDAY, 09.10.2018

- 10.00 am Opening
André Thess and Thomas Wetzel
- 10.15 am Welcome Addresses
- 10.45 am -Keynote Lecture-
The Brayton Battery
Robert B. Laughlin, Stanford University
- 11.30 am Coffee break
- 12.00 am A Proposal for an Energy Storage Research
Infrastructure
André Thess, DLR and University of Stuttgart
- 12.45 pm Lunch
- 02.00 pm Japanese 5-Year Program of Carnot Battery and
Wind-powered Thermal Energy Storage
Toru Okazaki, Institute of Applied Energy, Tokyo

- 02.30 pm Low Temperature Power-Heat-Power Application
with Additional Cooling Purpose
Henner Kerskes, University of Stuttgart:
- 02.50 pm High Temperature Pumped Thermal Energy
Storage Based on Rankine Cycles
Dan Bauer, DLR Stuttgart
- 03.30 pm Coffee break
- 04.00 pm Liquid Metal Technology for High Temperature
Heat Transport and Storage
Thomas Wetzel, KIT Karlsruhe
- 04.20 pm PHES Reduction to Practice - From Powerpoint to
Powerplant
Sebastian Freund, Google X, Mountain View
- 04.40 pm Recent Progress Toward a Grid-scale
Demonstration of Pumped Heat Energy Storage
Andrew Smallbone, University of Newcastle
- 05.00 pm ETES – Three Applications for Future Power System
Design
Till Barmeier, Siemens Gamesa, Zamudio
- 07.00 pm Dinner in an Energy Research Hall
Dinner Speech by Andreas Hauer, ZAE Garching

DAY 2 - WEDNESDAY, 10.10.2018

- 09.00 am Welcome
- 09.15 am Integrated Thermal Energy Conversion and
Storage
Yulong Ding, University of Birmingham
- 09.45 am Compressed Heat Energy Storage for Energy From
Renewable Sources
*Eduardo Zabala, Corporación Tecnológica
Tecnalia Bilbao*
- 10.15 am Carnot Batteries for the Decarbonization of Coal
Fired Power Plants using high temperature thermal
storage technologies from solar power plants
Michael Geyer, Abengoa, Spain
- 10.45 am Coffeebreak
- 11.00 am Simultaneous Optimization of Working Fluid and
Process Conditions in Power Cycles
Joachim Gross, University of Stuttgart
- 11.30 am Closing Remarks
Thomas Wetzel and André Thess