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Technical tour to
Helmholtz-Zentrum
Dresden Rossendorf,
DREWAG, Sunfire

International Summer School

Energy Storages for Sustainable Energy Supply

September 22 - 27, 2014 in Dresden, Germany

The International Summer School is funded by the Excellence Initiative.

→TOPICS

- storage technologies fundamentals
- sustainability aspects
- economic aspects
- system integration aspects of storage technologies

→PARTICIPANTS

PhD students, post-docs, and excellent students from all over the world and from TU Dresden

→LECTURERS

Aalborg University | Brno University of Technology | École Supérieure d'Électricité | Fraunhofer Gesellschaft | Helmholtz-Zentrum Dresden-Rossendorf | Technische Universität Dresden | Ohio State University

→CHAIRMAN

Prof. Dr.-Ing. Peter Schegner

Head of Institute of Electrical Power Systems and High Voltage Engineering at TU Dresden and chairman of CSSI

Summer School is supported by the "Technology Transfer Unit" of the Technische Universität Dresden.

Contact: Summerschool.ing@tu-dresden.de

Information about CSSI



Monday

22.09.2014

09:00 **Opening**

**Prof. Dr.-Ing. habil. DEng / Auckland
Hans Müller-Steinhagen,**
Rector, TU Dresden

09:30 **Organizational information**

10:30 Break

11:00 **Energy storages – key components
for the reliability and security of
renewable energy systems**

Prof. Dr.-Ing. Peter Schegner,
Chair of Electrical Power Systems,
TU Dresden

12:30 Lunch

13:30 **Fundamentals and basic process for
energy storage**

Prof. Dr.-Ing. Michael Beckmann,
Chair for Combustion, Heat and Mass
Transfer, TU Dresden

15:00 Break

15:30 **Waste-to-energy systems vs.
potential energy storage**

Prof. Ing. Petr Stehlik,
Director of Institute of Process
and Environmental Engineering,
Brno University of Technology

17:00 **Open exchange:
Poster presentations and exchange
of ideas**

Tuesday

23.09.2014

09:00 **Hydrogen solid-state storage**

Prof. Dr.-Ing. Bernd Kieback,
Chair for Powder Metallurgy, Sintered
Materials and Composites,
TU Dresden

10:30 Break

11:00 **Overview and comparison of
secondary batteries for
electrochemical energy storage**

**Prof. Dr.-Ing. habil. Dr. h. c.
Eckhard Beyer,**
Executive Director of Fraunhofer-
Institut für Werkstoff- und
Strahltechnik IWS

12:30 Lunch

13:30 **N.N.**

Prof. Dr. Edeltraut Günther,
Chair of Environmental Management
and Accounting, TU Dresden

15:00 Break

15:30 **The Economics of energy storage**

Dr. Ramteen Sioshansi,
Assistant Professor,
Ohio State University


17:00 **Event: Summer of Excellence**

Wednesday

24.09.2014

09:00 **Field trips to**

- **Helmholtz-Zentrum Dresden-Rossendorf**
- **DREWAG - Stadtwerke Dresden**
- **Sunfire GmbH**



Thursday
25.09.2014

09:00 **Electrical components of flywheel energy storages for stationary applications**

*Prof. Dr.-Ing. Wilfried Hofmann,
Chair of Electrical Machines and Drives, TU Dresden*

10:30 Break

11:00 **Hybrid power generation units with integrated energy storage: concepts, modelling, dynamic simulation, case study**

*Prof. Dr.-Ing. Uwe Gampe,
Chair of Thermal Power Machinery and Plants, TU Dresden*

12:30 Lunch

13:30 **Large-scale energy forecasting**

*Prof. Dr.-Ing. Wolfgang Lehner,
Chair of Database Technology,
TU Dresden*

*Prof. Torben Bach Pedersen,
Center for Data-intensive Systems,
Aalborg University*

15:00 Break

15:30 **Applications of storage systems in electric power systems**

*Ass.-Prof. Marc Petit,
École Supérieure d'Électricité*

Friday
26.09.2014

09:00 **Workshops**

- **Systems analysis of storage technologies with respect to the security of energy supplies**

Prof. Dr.-Ing. Michael Beckmann

- **Energy-neutral software**

*Prof. Dr. rer. nat. habil.
Uwe Aßmann*

*Chair of Software Technology,
TU Dresden*

- **Microkinetic modelling in heterogeneous catalysis - introduction to transient methods**

*Prof. Dr. rer. nat. habil.
Cornelia Breitung*

*Chair of Technical Thermodynamics,
TU Dresden*

- **Economics of energy storage**

*Prof. Dr. habil. Dominik Möst
Chair of Energy Economics,
TU Dresden*

- **Integration of storages into the electrical supply system - challenges and opportunities**

Prof. Dr.-Ing. Peter Schegner

17:00 **Saxony power evening**

Saturday
27.09.2014

09:00 **Workshop presentations**

11:30 **Closing event**



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→ INFORMATION

More Information about

- program
- application process (deadline: 30th of June, 2014)
- logistics

can be found at the **Homepage Summer School:**
[www. tu-dresden.de/ing/Summerschools](http://www.tu-dresden.de/ing/Summerschools)

→ APPLICATION REQUIREMENTS

→ Researchers from different academic fields who focus their research on topics related to energy storage are invited to take part, for example:

- Electrical Engineering
- Mechanical Engineering
- Chemical Engineering
- Computer Sciences
- Economics
- etc.

→ PhD students, post-docs and excellent students from all over the world (limited to 30 participants)

→ As the summer school is supported by the Excellence Initiative of the German Government, we offer a limited number of full and partial scholarships.

→ Additional about 30 PhD students, post-docs, and excellent students from TU Dresden can take part

→ QUESTIONS?

Don't hesitate to contact us! Summerschool.ing@tu-dresden.de