

POWER AND ENERGY STUDENT SUMMIT 2017

26th – 28th June 2017
FAU Erlangen-Nuremberg

Conference Program

SIEMENS



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Lehrstuhl für
Elektrische Energiesysteme

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Conference Secretariat

For further information: <http://ees.eei.uni-erlangen.de/pess-2017/>

For any enquiry, please contact us via email:

ees-pess@fau.de

General Theme

The Power and Energy Student Summit 2017 (PESS) is designed for students, young professionals, and PhD-students in the field of power engineering. PESS 2017 offers the possibility to gain first experience in presentation, publication and discussion with a renowned audience of specialists. Therefore, the Conference is accompanied and supervised by established scientists and experts.

Venue

The Conference will be held on the 27th and 28th of June 2017 at the Energy Campus Nürnberg (EnCN).

Entrance Address: Energie Campus Nürnberg (EnCN), Fürther Str. 250, "Auf AEG", 90429 Nuremberg

Parking Address "Auf AEG", Muggenhofer Str. 162-172, 90429 Nuremberg



Name Badges

Each Conference delegate will receive a name badge after registration or at the welcome reception. The badge is your official pass and must be worn to obtain entrance to all sessions, morning and afternoon teas, lunches, and the Welcome Reception.

Accommodation and Welcome Reception

The Conference participants are accommodated at the Youth Hostel Nuremberg which is located in Nuremberg Castle.

The Welcome Reception will be held in the same building in the *Eppeleinsaal* on the 26th June starting from 18:00h.

Address: Youth Hostel Nuremberg, Burg 2, 90403 Nuremberg

Conference Dinner

The Conference Dinner will be held at the Restaurant "Altstadthof" in Nuremberg on the 27th of June at 19:00h. It's the place where the famous *Rotbier* of Nuremberg is being brewed since the 14th century. The restaurant is well known for its traditional Franconian meals, its beer and - since 2005 - also for its own high-class whisky distillery. The distinctive ambience guarantees a beautiful and unforgettable evening. This event is inclusive for registered authors and guests. Admission vouchers for the Conference Dinner will be handed out together with the Conference bag at the registration desk. Please bring them with you to the Dinner.

Address: Hausbrauerei Altstadthof, Bergstraße 19-21, 90403 Nuremberg

Arrival and Public Transport

Every Conference delegate will receive two day-tickets for public transport in Nuremberg. They should be used for the transfers on the Conference days (27th and 28th of June).

Getting from Nuremberg Main station to the Youth Hostel by public transport:

From Nuremberg main railway station, which is located at the south side of the city, it is a 20-minutes' walk through the historic centre of Nuremberg to reach Nuremberg Castle and the Youth Hostel, lying in the north. Alternatively, you can take the **underground line U1 direction Fürth** to **Lorenzkirche** (next stop), from there it is about a 10-minutes' walk.

Getting to the Youth Hostel by car:

Coming from any direction, follow the signs to the city centre, then *Nördliche Altstadt* and then to the *Youth Hostel, Burg 2, 90403 Nuremberg*.

Please note that the Youth Hostel does not have any parking spaces of its own.

Getting from Nuremberg Main station to the Conference location by public transport:

Take the **underground line U1 direction Fürth** and exit at the station **Eberhardshof**. The Conference location *Energie Campus Nürnberg (EnCN), Fürther Str. 250, "Auf AEG", 90429 Nuremberg* is located only a few minutes' walk from the station.

Please refer to the map above.

Getting to the Conference location by car:

The Conference location can be reached by car on the motorway A73 via N4 (*Frankenschnellweg*) and Fürther Straße to:

**Energie Campus Nürnberg (EnCN),
Fürther Str. 250, "Auf AEG",
90429 Nuremberg**

Parking is possible at: "Auf AEG", Muggenhofer Str. 162-172, 90429 Nuremberg (no parking fee). Please refer to the map above.

Getting from the Youth Hostel to the Conference location by public transport:

It is a 10 minute walk from the Hostel to the station "Lorenzkirche".

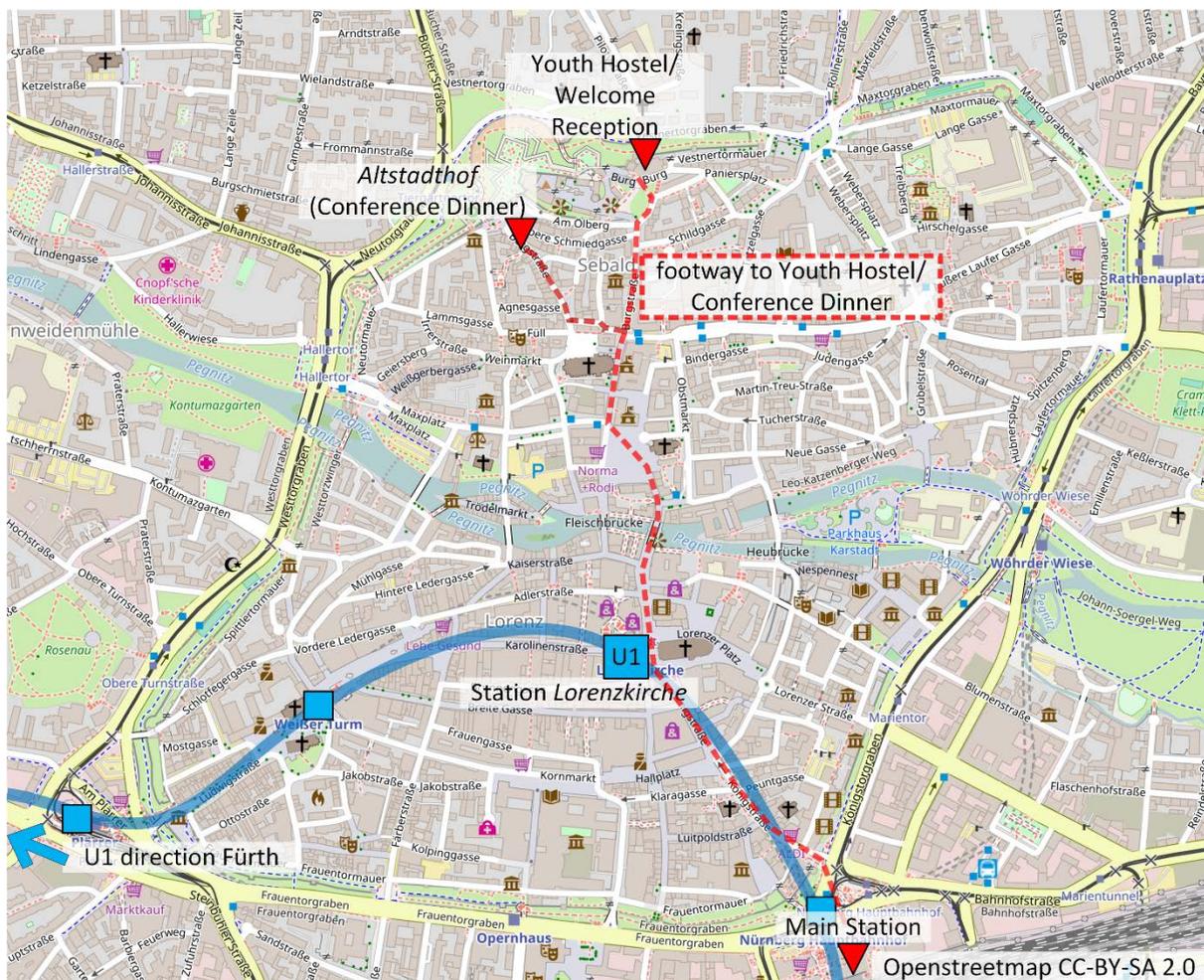
Take the **underground line U1 direction Fürth** and exit at the station **Eberhardshof**. From there, the Conference location *Energie Campus Nürnberg (EnCN), Fürther Str. 250, "Auf AEG", 90429 Nuremberg* is only a few minutes' walk.

Getting from the Conference location to the Conference Dinner or Youth Hostel:

It is a 5 minute walk from the Conference location to the station “Eberhardshof”. Take the **underground line U1 direction Nürnberg Messe** and exit at the station **Lorenzkirche**. From there it is a 10 minute walk to the Conference Dinner or Youth Hostel. Please refer to the map below.

Getting from the Conference location to the Technical Visit:

A special bus transfer will be provided to bring you from the Conference location to the transformers plant. After the visit, the bus will make a stop at the main railway station and the Conference venue.



WLAN

Guest Wlan and Eduroam is available.

WLAN: EnCN-Guest

Passwort: 123456789ZAE

Technical Visit

The transformers manufactured in the Nuremberg plant are complex, almost exclusively hand-made products, which can reach dimensions comparable to whole houses. Their inner life, however, often needs to be built to a precision of millimeters. Each of the high-tech products is specifically designed for parameters such as voltage, power, climate, noise level and much more. On this trip, you can get an insight into the high requirements for such a production and its dimensions.

There will be a special bus transfer provided from the Conference venue to the transformers plant. After the Technical Visit, the bus will transfer to the central station and back to the Conference venue (EnCN).

Presentations

Oral Presentations

Authors are requested to copy their presentation slides as powerpoint and PDF file at the Conference registration desk during the Welcome Reception. In case you are not able to attend the Welcome Reception, please write a message to: ees-pess@fau.de

Poster Presentations

Authors are requested to hand over their printed poster in A0 format at the Conference registration desk during the Welcome Reception. The Conference Team will set up your poster presentation for the poster session.

Schedule at glance

Monday, 26th June 2017

Arrival *Youth Hostel Nuremberg*
18:00 Registration and Welcome Reception *Eppeleinsaal*

Tuesday, 27th June 2017

08:30 Welcome Coffee *Energie Campus Nürnberg*
09:00 Opening Speeches
Prof. Dr. Friedrich Paulsen, FAU Erlangen-Nuremberg
Prof. Dr. Matthias Luther, FAU Erlangen-Nuremberg
09:30 Keynote
Dr. Timo Christ, Siemens AG
10:00 Session A: HVDC and FACTS
Chair: Dipl.-Ing. Georg Deiml, TenneT TSO GmbH
11:30 Lunch *Kantine Electrolux*
13:00 Keynote *Energie Campus Nürnberg*
Dipl.-Ing. Werner Hofer, Maschinenfabrik Reinhausen GmbH
13:30 Session B: Renewable Energies
Chair: Dipl.-Ing. Annette Köpken, ESTW AG
15:00 Coffee Break
15:30 Technical Lecture
Prof. Dr. Gerhard Herold, FAU Erlangen-Nuremberg
16:00 Keynote
Dipl.-Ing. Joachim Kopp, Netze BW GmbH
16:30 Session C: Smart Grid
Chair: Dipl.-Ing. Klemens Wegehaupt, Siemens AG
18:00 Transfer to Conference Dinner
19:00 Conference Dinner *Altstadthof*

Wednesday, 28 June 2017

08:00 Welcome Coffee *Energy Campus Nuremberg*
08:30 Keynote
Dr. Peter Hoffmann, TenneT TSO GmbH
09:00 Session D: Grid Control and Planning
Chair: Dipl.-Ing. Henry Smit Kinderman, Siemens AG
10:30 Coffee Break + Poster Session
11:30 Lunch *Kantine Electrolux*
13:00 Award Ceremony + Closing Speech *Energie Campus Nürnberg*
14:00 Bus Transfer
15:00 Technical Visit *Transformer Factory
Siemens AG*
17:30 Departure (Bus Transfer to main station & EnCN)

Oral Presentations Day 1 – Tuesday, 27 June 2017

Session A: HVDC and FACTS

Time: 10:00h – 11:30h

Chair: Dipl.-Ing. Georg Deiml, TenneT TSO GmbH

- S_A.01 Analysis of an AC Benchmark Transmission System with High Share of Renewable Energy Sources
Juan Temboury Jimenez, Sebastian Weck, Jutta Hanson
TU Darmstadt
- S_A.02 Temperature-dependent and anisotropic electrical conductivity of resin-impregnated paper
Karina Hopf, Sebastian Sturm, Isabell Wirth, Markus Zink, Andreas Küchler
UAS Würzburg-Schweinfurt
- S_A.03 Comparison of different Control Concepts for Multilevel VSC HVDC Systems
Johannis Porst, Christoph Hahn
FAU Erlangen-Nuremberg
- S_A.04 Commissioning of a twelve-pulse-bridges LCC-HVDC Analog-Hybrid-Simulator
Alexander Raab, Christoph Hahn, Klaus Schneider, Gerhard Czerwenka, Johannes Floth
FAU Erlangen-Nuremberg

Session B: Renewable Energies

Time: 13:30h – 15:00h

Chair: Dipl.-Ing. Annette Köpken, ESTW AG

- S_B.01 Investigation of the Impact of Coupling between Electricity and Heating Networks Using an Exemplary Network Model
Simonas Černiauskas, Dominik Maihöfner, Tim Plößler, Benjamin Braun, Jutta Hanson
TU Darmstadt
- S_B.02 A Resonant 150W DC/DC-Converter with GaN Devices switching at 30.3 MHz
Pelle Weiler, Philipp Schülting, Rik W. De Doncker
RWTH Aachen
- S_B.03 Recommissioning and optimization of a modular photovoltaic multilevel-inverter
Yujia Hei, Gert Mehlmann
FAU Erlangen-Nuremberg
- S_B.04 Doubly-fed Induction Generator in Frequency Domain
Marco Köhler, Robert Dimitrovski
FAU Erlangen-Nuremberg

Session C: Smart Grid

Time: 16:30h – 18:00h

Chair: Dipl.-Ing. Klemens Wegehaupt, Siemens AG

- S_C.01 Bad Data Detection and Identification in Distribution Power Systems
Tim Streubel, Daniel Groß, Krzysztof Rudion
University of Stuttgart
- S_C.02 Heterogeneous Modeling: A Need to Model Future Energy Systems
Pierre Kehl, Raja Rehan Khalid, Georg Frey
Saarland University
- S_C.03 Evaluation of Energy-Storage for Reducing Grid Reinforcement in High Voltage Grids
Nils Kaiser, Pascal Wiest, Ouafa Laribi, Krzysztof Rudion
University of Stuttgart
- S_C.04 Flexible power plant schedules to reduce the demand for control power
Zheng Liu, Hui Cai, Teng Jiang, Steffen Schlegel, Dirk Westermann
TU Ilmenau

Oral Presentations Day 2 – Wednesday, 28 June 2017

Session D: Grid Control and Planning

Time: 09:00h-10:30h

Chair: Dipl.-Ing. Henry Smit Kinderman, Siemens AG

- S_D.01 Optimized PMU placement by combining topological approach and system dynamics aspects
Jonas Prommetta, Jakob Schindler, Johann Jaeger
FAU Erlangen-Nuremberg
- S_D.02 High Temperature Superconductor Cables in the German High Voltage Grid
Leonard Kluss, Gerrit Schlömer, Lutz Hofmann
Leibniz University of Hannover
- S_D.03 A Computer Program to Calculate the Current-Carrying Capacity of Overhead Power Lines
Jan Kircheis, Jens Haubrock
UAS Bielefeld
- S_D.04 Feature Extraction and Signal Classification of Travelling Wave Reflection Patterns for Line Fault Locating
Haris Rehman, Björn Keune
TU Dortmund

Poster Presentations Day 2 – Wednesday, 28 June 2017

Time Series Analysis and Forecasts with Holt-Winters-Method

Hermann Kraus and Gaby Birgitt Seifert

FAU Erlangen-Nuremberg

Evaluation of the Electrical Insulating Properties of Paraffin

Christian Dotterweich, Stephan Harrer and Markus Zink

UAS Würzburg-Schweinfurt

System identification for dynamic equivalent model

Xinya Song, Teng Jiang, Dirk Westermann and Steffen Schlegel

TU Ilmenau

Asymptotic Time Domain Evaluation of a Single-Phase Cascade H-Bridge PWM Inverter Voltage and Current Quality for Non-Equal DC Sources

Nurzhan Zhuldassov and Alex Ruderman

Nazarbayev University

Effect of the sampling rate on the analysis of measurements of photovoltaic systems

Marcel Meyer, Simon Resch and Rainer Schmidt

FAU Erlangen-Nuremberg

Grid supporting operation of lithium-ion battery storage systems for grid-connected photovoltaic systems

Florian Pol and Simon Resch

FAU Erlangen-Nuremberg

Synthesis of domestic load curves for low voltage grid simulations

Nicolas Nau

TU Kaiserslautern

Simulation and Comparison of Inverter Models in Inverter-dominated Power Distribution Grid

Zheng Liu, Teng Jiang, Steffen Schlegel and Dirk Westermann

TU Ilmenau

Impact of DFIG-based Wind Generator on Dynamic Behavior of Power Systems during Over-Frequency Events

Yonggang Zhang

Otto-von-Guericke-University Magdeburg

Methods to eliminate the deviation of secondary control power supplied by electric vehicle pool

Zheng Liu, Yuelin Zeng, Teng Jiang, Steffen Schlegel and Dirk Westermann

TU Ilmenau

Comparison of Implicitly Restarted Arnoldi Algorithm with Jacobi-Davidson Algorithm for the Calculation of Eigenvalues

Marcel Hundscheid and Robert Dimitrovski

FAU Erlangen-Nuremberg

<u>Monday - 26.06.2017</u>		<u>Tuesday - 27.06.2017</u>		<u>Wednesday - 28.06.2017</u>	
Venue	Nuremberg Castle	Energie Campus Nuremberg, Fürther Straße 250, Nuremberg, 2 nd floor			
8:00		-	Welcome Coffee	Welcome Coffee	
8:30		Welcome Coffee		Keynote (Dr. Peter Hoffmann, TenneT TSO GmbH)	
9:00		Opening Speech (FAU Vice President Prof. Dr. Paulsen, Prof. Dr. Luther)		Session D	
9:30		Keynote (Dr. Timo Christ, Siemens AG)		Grid Control and Planning	
10:00		Session A		(Chair: Dipl.-Ing. Henry Smit Kinderman, Siemens AG)	
10:30		HVDC and FACTS		Coffee Break + Poster Session	
11:00		(Chair: Dipl.-Ing. Georg Deiml, TenneT TSO GmbH)			
11:30		Lunch		Lunch	
12:00		(Electrolux-Canteen)		(Electrolux-Canteen)	
12:30					
13:00	Arrival	Keynote (Dipl.-Ing. Werner Hofer, Maschinenfabrik Reinhausen GmbH)		Award Ceremony + Closing Speech	
13:30		Session B		Transfer by bus	
14:00		Renewable Energies			
14:30		(Chair: Dipl.-Ing. Annette Köpken, ESTW AG)			
15:00		Coffee Break			
15:30		Technical Lecture (Prof. Dr. Herold)			
16:00		Keynote (Dipl.-Ing. Joachim Kopp, Netze BW GmbH)		Technical Visit	
16:30		Session C		(Siemens AG - Transformer Plant)	
17:00		Smart Grids			
17:30		(Chair: Dipl.-Ing. Klemens Wegehaupt, Siemens AG)			
18:00		Transfer		Departure by bus	
19:30	Registration + Welcome Reception			(with stop at main station and back to Energie Campus)	
19:00		Conference Dinner			
19:30		(Altstadthof, Nuremberg)			
20:00					