

Chairpersons Message

The Cologne Institute for Renewable Energy CIRE at TH Köln (Germany) in cooperation with the Renewable Energy and Sustainability Center at Farmingdale State College (USA) will invite you to the Fifth International Energy and Sustainability Conference on Thursday June 30th and Friday July 1st to the campus of TH Köln in Cologne/Deutz.

In December 2015 the United Nations decided at the climate conference in Paris, France, to limit global warming and to decarbonize the energy system. Our conference discusses pathways and technologies required.

The conference theme will focus on the transition of our today's energy systems towards completely renewable based systems. Due to the nature of intermittent renewable energy resources it is essential to integrate formerly non-integrated systems in order to end up with reliable and economically feasible energy systems. Therefore, the conference will focus on the integration of different energy sectors: electricity sector, heating and cooling sector, transport sector, and also water supply and sewage sector. Moreover, to fulfill future energy system demands also energy storage in all sectors and grid infrastructures as well as energy efficiency topics will be addressed.

We gained IEEE as partner and will publish the conference proceedings in IEEE Xplore. This conference will act as a bridge between original manufacturers and service providers with regard to all relevant technologies. Exhibitors will have an opportunity to display their products and services in an open forum and attendees are encouraged to view a wide range of exhibits. A network of professionals will be in attendance and the potential for job opportunities in the field will be prominent.

Academic scholars will be in attendance from all over the world to share their latest research and achievements in renewable energy and sustainability. Domestic and International University representatives will be exposed to the latest technologies to expand current curriculums with sustainable products.

We hope you can join us on Thursday June 30th and Friday July 1st and participate in TH Köln's and Farmingdale State College's ongoing commitment to Renewable Energy and Sustainability.

Ingo Stadler (TH Köln)

Marjaneh Issapour (Farmingdale State College)

Conference Venue

TH Köln
University of Applied Sciences
Betzdorfer Str. 2
50679 Köln

Conference Fee

€ 170,00
Students (present their student ID): € 50,00

Fees cover admission to all sessions, invitation to all coffee breaks, lunches



5th International Energy and Sustainability Conference 2016

Sustainable Future by combining Electricity, Heating/Cooling and Transport Infrastructure

June 30th and July 1st 2016

at TH Köln (Germany) in cooperation with Farmingdale State College (USA)

CIRE

Cologne Institute
for Renewable Energy

**Technology
Arts Sciences
TH Köln**

**Farmingdale
State College**
State University of New York

**Renewable Energy
& Sustainability Center**
at Farmingdale State College

IEEE

CIRE

Cologne Institute
for Renewable Energy

**Technology
Arts Sciences
TH Köln**

Program

Thursday, June 30th

10:00 Opening Session

Prof. Dr. Marjaneh Issapour, Farmingdale State College

Prof. Dr. Ingo Stadler, TH Köln

Invited Lecture: Phase II of the energy system transformation – a challenge for technology, business, politics and society

Dr. Kurt Rohrig, Fraunhofer IWES

11:00 Solar Super State Award Ceremony

Podium Discussion with Winners

12:30 Lunch

13:30 Renewable Energy

D. Bogdanov: Integrated renewable energy based power system for Europe, Eurasia and MENA regions

S. Kumar: Optimal Solution of Grid Connected Renewables and Energy Storage Systems for Germany

S. Volkwein: International Energy Agency (IEA) harmful for climate protection

H. Jahn: Local Smart Grids NOW!

N. Reiners: Good modules for bad weather

M. Adam: Classification of Hydraulic Designs and Hardware-in-the-loop-Tests of Solar Assisted Heating Systems for Multi-Family Houses

Parallel Session: Solar Energy

M. Touré: FTIR Investigation on <100> p-type Silicon Pyramids and Inverted Pyramids

J. Rulhof: Experimental studies on the development of a solar hybrid module with an aluminum microchannel evaporator

U. Boeke: Business model of solar power systems for residential buildings

J. Kamadinata: Global Solar Radiation Prediction Methodology for Photovoltaic Power Generation Systems

T. Schneiders: Sunshine instead of soot – how solar power can substitute diesel generators

E. Dresch: A tool for the dynamic simulation of large PV-diesel-battery systems with multiple diesel generators and different dispatch strategies

15:30 Coffee Break

15:50 Poster Session

Optional

17:00 Visit to :metabolon (limited bus transfer capacity)

Presentations

Prof. Dr. Michael Bongards, Prof. Dr. Christiane Rieker

Visit of Exhibition Halls

Dinner

Return Fare

Friday, July 1st

08:30 Invited Lecture

Prof. Dr. Eicke R. Weber, Director Fraunhofer Institute for Solar Energy Systems ISE

09:00 District heating and other networked systems

T. Novosel: Urban regeneration on a neighbourhood level: Implementation of fourth generation district heating and cooling concepts on a case study for a Southeast European city

W. Kusch: A large city in the focus of energy transition: Consumer, energy store or power producer

M. Brunotte: Solar thermal district heating systems assisted by PV-powered heat pumps

T. Clees: A New NLP Analyzer and Solver for Gas, Power and Cooling Networks

Parallel Session: Energy Efficiency and Fuel Cells

V. Rudolf: Methodology for EBSILON simulation studies of on-site generation CHP systems for Data Centre

F. J. Wirkert: A Newly Designed PEM Electrolysis System with Dynamic Hydraulic Compression for Optimized High Pressure Operation

P. Podleschny: A low-cost approach for PEM fuel cells with low platinum loading based on hydraulic compression

Z. Xiaoming: A Case Study of Electric Chiller Performance Bottleneck Diagnosis by Root Cause Analysis

10:20 Coffee Break and Poster Show

11:00 Energy Storage

C. Möller: Energy Storage Potential in the Northern German Region Osnabrück - Steinfurt

M. J. Zangs: On-Line Adjustment of Battery Schedules for Supporting LV Distribution Network Operation

S. Baum: Economic Evaluation and Optimization of Photovoltaic-Battery-Grid Power Supply Systems in residential and non-residential Buildings with increasing share of Renewable Energy

F. B. Tilahun: Agent-based Virtual Power Plant (VPP) Modeling for Demand Side Energy Management in Textile Industry

Parallel Session: Smart Home & Smart City

G. Büchel: Application of SensorCloud Technologies for the Aims of a Smart City

M. Radu: Reliability Analysis of Smart House System

W. Schellong: Energy management in municipal energy systems

O. Zirn, et. al.: Foldable Electrified Ultralight Vehicles as Key Component for Sustainable Traffic Chains

12:20 Lunch

13:30 Grid Control

E. Waffenschmidt: Primary control with batteries

N. O. Kovacs: Virtual inertia grid control with LED lamp driver

M. Nayeripour: Distributed and Hierarchical Voltage Control of Distributed Generators in Smart Grid

N. Sharifmuddin: Comparative Study of Series and Parallel Scheme for Microgrid Stabilization using Virtual Synchronous Generator Control

Parallel Session: Food & Waste

M. Al-Saidi: Assessment of Energy Use Patterns for Water and Food Production in the MENA Region

P. Beuel: Intelligent energy in agriculture - Possibilities of Energy and CO2 savings and modification options in energy demand of agriculture in rapidly changing electricity prices

Ajaji Timothy O.: Energy Generation through Waste Water as a Remedy for Better Governance:

A. Perez: Heat recovery from sewage water using heat pumps in Cologne: A case study

15:00 Invited Lecture

Oliver Krischer, Member of German Federal Parliament

Intro: Trailer Movie »Power to Change«,

Viviane Meyer, fechnerMEDIA

16:00 Get Together with Beer and Cologne Buffet