

# **Call for Participation**

**2nd Joint German-Egyptian Workshop on**

## **Renewable Energies, Smart Grid and Green ICT**

**Stuttgart, November 26 -27, 2012**

### **Conference Venue:**

**Internationales Begegnungszentrum (IBZ) of the University of Stuttgart,  
Robert-Leicht-Str. 161, 70569 Stuttgart-Vaihingen**

### **Workshop Motivation:**

Renewable Energies play a key role in the energy change of the post-carbon and post-nuclear era. Wind energy, solar-thermic and photovoltaic energy sources are highly volatile and have to be complemented by massive energy storage through hydro-electric and electro-chemical conversions, by new and more flexible power supply infrastructures, as well as by more intelligent control of the energy consumption. In the so-called „Smart Grid“ information and communication technologies (ICT) are required to enable its intelligent control and security. ICT, at the other hand, is also a major energy consumer and needs to be „greened“ to become more energy-efficient.

The problems behind the new challenges are highly interdisciplinary and require thorough studies on new technical solutions, operational management, reliability, efficiency, security and risk analysis, performance, economics (in terms of capital and operational expenditures: Capex, Opex), and, last but not least, related legal aspects. The partner universities UStuttgart, UUlM, UTuebingen and GUC (German University in Cairo) address this field by new study programs and research projects and seek to extend their cooperation. A first workshop on this topic took place at the GUC in June 2011. Another related workshop on „Innovative Methodologies & Technologies for Sustainable Communities“ was held only recently at the GUC addressing a wider scope including transportation systems, urban buildings and planning, innovative materials, as well as finance and economics. These activities are financially supported by the German Academic Exchange Service DAAD and the German Federal Ministry of Science and Research BMWF.

# Technical Program:

**Monday, November 26, 2012**

**09:00 Opening**

## **Session 1 Infrastructures for the Smart Grid**

**09:15** Organization and Infrastructures for the Smart Grid **(Invited Talk)**  
S. Rohjans, OFFIS, Oldenburg

**10:00** Cloud of Energy Storage Devices and Computing Grids  
J. Bross, Alcatel - Lucent Bell Laboratories, Berlin

**10:30** C-DAX: A Secure and Resilient Communication and Information Infrastructure  
for Power Grids  
M. Hoefling, F. Heimgaertner, M. Menth, University of Tuebingen

**11:00 Coffee Break**

## **Session 2 Renewable Energies I**

**11:15** The DESERTEC Project - Challenges and State-of-the-Art **(Invited Talk)**  
Hani El Nokraschy, DESERTEC Foundation, Germany

**12:00** On the Optimal Placement of Wind and Solar Parks in Egypt  
C. Gervet, M. Atef, German University in Cairo (GUC)

**12:30** Performance and Cost Assessment for Concentrated Solar Power Plants (CSP)  
T. Telsnig, L. Eltrop, University of Stuttgart

**13:00 Lunch Break**

## **Session 3 Green ICT I**

**14:00** Investigation of Powerline Communication Modems for Energy Management Systems  
I. Tsakolo, R. Bernstein, R. Lehnert, Technical University of Dresden

**14:30** ON/OFF Switching Strategies of eNodeB for Green LTE Networks  
T.O. Elshabrawy, R. Mourad, German University in Cairo (GUC)

**15:00** Load Balancing in Cloud-Based Content Delivery Networks Using Adaptive  
Server Activation/Deactivation  
M. Mashaly, German University in Cairo (GUC), P.J. Kuehn, University of Stuttgart

**15:30 Coffee Break**

#### **Session 4 Renewable Energies II**

**15:45** Techno-Economic Evaluation of Storage Technologies to Integrate High Shares of Renewable Energy into Electric Grid  
N. Hartmann, Ch. Kruck, L. Eltrop, University of Stuttgart

**16:15** Possibilities to Electrify a Developing Country Considering Local Conditions  
K. Beck, H. Hingerl, M. Schimmelmann, V. Steub, S. Eilenberger,  
University of Stuttgart

**16:45** Life Cycle Assessment of Different Biofuels via Thermo-Chemical Conversion of Biomass  
L. Eltrop, M. Henssler, University of Stuttgart

**18:00 Reception and Buffet, Commundo Hotel (Telekom)**

**Tuesday, November 27, 2012**

#### **Session 5 Green ICT II**

**09:00** Wireless Sensor Network Battery Life-Time Based Model Using a Discrete Event Simulator  
M. El-Aaasser, M. Ashour, German University in Cairo (GUC)

**09:30** Load Aware, Multiple Paths Battery Balanced Routing in Wireless Sensor Networks  
C.S. Wadie, M., Ashour, German University in Cairo (GUC)

**10:00** Performance Optimization of Mobile/Wireless User Devices with Smart Sleep Modes  
P.J. Kuehn, University of Stuttgart

**10:30** Energy Savings in Wireless Base Stations by Adapting System Resources  
O. Blume, D. Ferling, Alcatel-Lucent Bell Laboratories, Stuttgart

**11:00 Coffee Break**

#### **Session 6 Renewable Energies III**

**11:15** The Change to Renewable Energies Needs Improved Conventional Power Plants:  
A Better Understanding of the Influence of Droplet Size on Erosion Processes  
M. Mlikota, S. Schmauder, U. Weber, M. Ahmad, M. Schatz, University of Stuttgart

**11:45** Wind Energy Education  
P.W. Cheng, M. Capellaro, University of Stuttgart

**12:15 Closing**

**12:30 Lunch Break**

**13:30 Technical Visits**

## **Organization and Support of the Workshop:**

University of Stuttgart

University of Ulm

German University in Cairo (GUC)

German Academic Exchange Service (DAAD)

German Federal Ministry of Science and Research (BMWF)

Internationales Begegnungszentrum (IBZ) der Universität Stuttgart e.V.

## **Technical Program Committee:**

Paul J. Kuehn (Chair)	University of Stuttgart
Hans-Peter Grossmann	University of Ulm
Carmen Gervet	German University in Cairo (GUC)
Yasser Higazi	German University in Cairo (GUC)

## **Local Organization:**

Paul J. Kuehn	University of Stuttgart (IKR)
Tanja Hermann	University of Stuttgart (IZ, GUC Coordination)
Katarina Kunert	University of Ulm (IZ, GUC Coordination)

## **Venue:**

The workshop takes place at the International Social Center (IBZ) of the University of Stuttgart (Registered Association), which is close to the Campus Stuttgart-Vaihingen of the University of Stuttgart, see attached map.

Access to the IBZ is as follows:

### **Arrival by Plane at Airport Stuttgart (Echterdingen):**

Take the suburban train (S-Bahn) from Airport Stuttgart, Lines 2 (direction Schorndorf) or 3 (direction Backnang) to station „Universität“ (7 stops, 17 minutes, 4 times per hour). 10 minutes walk to the IBZ as indicated on the map by the blue dotted path.

### **Arrival by Train at Stuttgart Central Station (Hbf):**

Take suburban train (S-Bahn) from Stuttgart Hbf. (lower level), Lines 1 (direction Herrenberg), 2 (direction Filderstadt via Flughafen/Messe) or 3 (direction Flughafen/Messe) to station „Universität“ (4 stops, 10 minutes, 6 times per hour). 10 minutes walk to the IBZ as indicated on the map by the blue dotted path.

### **Arrival by Car from Motorway A8 Munich - Karlsruhe:**

Take exit "Stuttgarter Kreuz" to motorway A 831 (Note: this is wrongly indicated on the map by A 81) direction „Stuttgart-Vaihingen/Stuttgart-Zentrum“ . At the end of the motorway take exit „Universität“, turn left at the traffic light into street „Universitätsstrasse“. At the end of „Universitätsstrasse“ continue „Allmandstrasse“, at the next intersection turn left into „Robert-Leicht-Strasse“ as indicated on the map by the dashed red path. Some parking places are in the court of the IBZ, but there is usually no problem to park in the "Robert-Leicht-Strasse" (Dead End street).

### **Hotel Accommodation:**

An economic accommodation is with the \*\*\* Commundo Hotel on the University Campus (see map, indicated by „Telekom“), the Deutsche Telekom Training Center hotel. Booking can be done through the link [www.Booking.com](http://www.Booking.com)

Note: Hotel booking for GUC participants will be provided by the Local Organization. External German participants may also contact the Local Organization c/o E-mail address [paul.j.kuehn@ikr.uni-stuttgart.de](mailto:paul.j.kuehn@ikr.uni-stuttgart.de); we will be glad to help you (as the Commundo Hotel ist frequently booked out !).

### **Reception and Buffet:**

The Reception with Buffet takes place at the Commundo Hotel (see map, indicated by „Telekom“), 5 minute walk from IBZ. Registration for the participation in the Reception/Buffet is required (see attached Registration Form).

### **Lunches:**

Lunches can be taken either at the Commundo Cafeteria or at the University Canteen („Mensa“, see map, Building 45, near to the S-Bahn station) on your own expenses.

### **Conference Fee:**

Due to the the financial support of the DAAD/BMWF and the cost-free hosting of the workshop at the IBZ conference fees are waived. But for logistic purposes (set-up of the conference hall, beverages during the Coffee Breaks, Reception and Buffet) Conference Registration is required (see attached Registration Form).

