

## 4<sup>th</sup> International Telecommunication Energy Special Conference – Technical Program

May 10 – 13<sup>th</sup>, 2009

Day	Time	Hall (1+2)	Hall 1	Hall 2
Mon	09:00 AM-09:10 AM	<b>Opening</b>		
	09:10 AM-10:40 AM	<b>Plenary Session I</b>		
	11:10 AM-12:40 PM	<b>Plenary Session II</b>		
	02:00 PM-03:30 PM	<b>Workshop 1: Energy Conversation</b> Sustainability in Telecommunication		
	04:00 PM-05:30 PM	<b>Workshop 2: AC versus DC Efficiency</b>		
Tue	08:30 AM-10:15 AM		<b>Technical Session I Batteries</b>	<b>Technical Session I Conversion Technology</b>
	10:40 AM-12:30 PM		<b>Technical Session II Batteries and other Energy Storage Systems</b>	<b>Technical Session II AC/DC Power Supplies / Power Quality and Efficiency</b>
	02:00 PM-03:40 PM		<b>Technical Session III UPS &amp; Converters</b>	<b>Technical Session III UPS &amp; Converters / EMC- Product Safety / Standards</b>
	04:10 PM-06:00 PM		<b>Technical Session IV Alternative Power Sources for Telecom Networks</b>	<b>Technical Session IV Operation-Maintenance / Thermalmanagement</b>

**Monday, May 11**

**9:00 AM - 9:10 AM**

**Opening**

Room: Hall (1+2)

**9:10 AM - 10:40 AM**

**Plenary Session I**

Room: Hall (1+2)

**9:10 *Efficient Electrical Energy Options for High Power Reliability and Availability***

Erik Höhne (envia Therm GmbH, Germany)

**9:40 *Electrical Power Grids for the Future: Trends, Drivers & Solutions***

Peter Menke (Siemens AG, Germany)

**10:10 *Directions and Implications for Power Systems  
- Efficient and Safe Energy for Telecommunication***

Helmut Leopold (President GIT &  
Board-Member of Austrian Research Centers GmbH)

**11:10 AM - 12:40 PM**

**Plenary Session II**

Room: Hall (1+2)

**11:10 *Energy Saving, the past, present, future***

Wilfried Schulz (Deutsche Telekom Netzproduktion GmbH, Z TE5, Germany)

**11:40 *ICT Getting Green***

Reijo Maihaniemi (Efore Plc, Finland)

**12:10 *An Overview of Battery Development placed in a historical context  
and future Aspects***

Stefan Göbel (Hawker GmbH, Germany)

**2:00 PM - 3:30 PM**

**Workshop 1: Energy Conversation –  
Sustainability in Telecommunication**

Room: Hall (1+2)

**4:00 PM - 5:30 PM**

**Workshop 2: AC versus DC  
Efficiency**

Room: Hall (1+2)

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**Tuesday, May 12**

**Technical Session I**

**8:30 AM - 10:15 AM**

**Batteries**

Room: Hall 1 Chair: Stefan Göbel (Hawker GmbH, Germany)

***I.1-1 Reliable Power Supply for remote telecom facilities***

Wieland Rusch (BAE Batterien GmbH, Germany)

***I.2-1 Ohmic Testing Applications in VRLA Batteries Maintenance***

Jian Gao (China Mobile Communications Group Co., Ltd, P.R. China);  
Longyun Yu (China Mobile Communications Group Zhejiang Co., Ltd, P.R. China)

***I.3-1 The Batterie's Regulatory Process in Brazilian Telecommunications Industry***

Maria Rosolem (CPqD, Brazil); Raul Beck (CPqD, Brazil); Luiz Soares (CPqD, Brazil); Pamela Frare (CPqD, Brazil); Glauco Santos (CPqD, Brazil); Vitor Arioli (CPqD, Brazil); Luiz Junior (CPqD, Brazil); Julio Fonseca (Anatel, Brazil)

***I.4-1 Effects of Heat-resistant Separator and Heat Conductor on Characteristics of Lithium-ion Cells***

Toshio Matsushima (NTT Facilities Inc., Japan); Tomonobu Tsujikawa (NTT Facilities INC., Japan)

**Conversion Technology**

Room: Hall 2 Chair: Bernhard Böden (Power Innovation GmbH, Germany)

***I.1-2 Variable Voltage PSU Technology for ICT Applications***

Markku Kukkonen (Efore Plc., Finland)

***I.2-2 A Study of High Voltage Converter Topologies with Wide Input Voltage Range***

Hiroyuki Osuga (Mitsubishi Electric Corporation, Kamakura Works, Japan);  
Isao Terukina (Mitsubishi Electric Engineering Company Limited, Japan);  
Hiroshi Nagano (Japan Aerospace Exploration Agency, Japan)

***I.3-2 Method of Designing a Four-Legged Transformer for Hybrid-Type DC-DC Converters***

Hiroshi Unno (Shindengen mfg.co.,ltd, Japan)

***I.4-2 Improved PFC Circuit for Three-Phase Single Switch Having Auxiliary Capacitors***

Keiju Matsui (Chubu University, Japan); Masaru Hasegawa (Chubu University, Japan)

## **Technical Session II**

**10:40 AM - 12:30 PM**

### **Batteries and other Energy Storage Systems**

**Room:** Hall 1 Chair: Dieter Kölbel (STARK Power GmbH, Germany)

***II.1-1 Uninterrupted power supply - supported by fuel cells***

Peter Beckhaus (ZBT GmbH, Germany); Thorsten Notthoff (ZBT GmbH, Germany); Sina Souzani (ZBT GmbH, Germany); Bernhard Böden (Power Innovation GmbH, Germany); Angelika Heinzel (ZBT GmbH, Germany)

***II.2-1 Fuel Cell Back-up Power***

Dirk Weniger (b+w Electronic Systems GmbH & Co. KG, Germany)

***II.3-1 Novel Voltage Balancer for Electric Double Layer Capacitor by Using Forward Converter***

Keiju Matsui (Chubu University, Japan); Hiroto Shimada (Chubu University, Japan); Masaru Hasegawa (Chubu University, Japan)

***II.4-1 Investigation into technical factors related to stationary lithium-ion battery used in telecommunications applications***

Tomonobu Tsujikawa (NTT Facilities INC., Japan)

### **AC/DC Power Supplies / Power Quality and Efficiency**

**Room:** Hall 2 Chair: Rudolf Mörk-Mörkenstein (Staatlich befugter Ziviltechniker und Ingenieurkonsulent für Elektrotechnik, Austria)

***II.1-2 Increasing grid transmit capability and power quality by new solar inverter concept and inbuilt data communication***

Norbert Grass (Georg-Simon-Ohm University Nuremberg, Germany)

***II.2-2 Evaluation of dc Voltage Levels for Integrated Information Technology and Telecom Power Architectures***

Alexis Kwasinski (The University of Texas at Austin, USA)

***II.3-2 Scientific methodology for Telecom service energy consumption and CO<sub>2</sub> emission assessment including negative and positive impact***

Didier Marquet (Orange Labs, France)

#### **II.4-2 Site Power Saving**

Fabio Pizzuti (University of Testing, Italy)

### **Technical Session III**

**2:00 PM - 3:40 PM**

#### **UPS & Converters**

**Room:** Hall 1 Chair: Bernhard Böden (Power Innovation GmbH, Germany)

##### **III.1-1 A New Multi-Loop Digital Control DC-DC Converter**

Fujio Kurokawa (Nagasaki University, Japan); Shohei Sukita (Nagasaki University, Japan); Junya Sakemi (Nagasaki University, Japan)

##### **III.2-1 Efficient powering of communication and IT equipments using rotating UPS**

Enrico Blondel (Swisscom (Schweiz) AG, Switzerland)

##### **III.3-1 Increased MTBF and Decreased Maintenance Cost by using Systems without fans**

Joerg Umbreit (Gustav Klein GmbH & Co KG, Germany)

##### **III.4-1 Fuel-cells in the required packaging**

Siegfried Suchanek (Rittal GmbH & Co. KG, Germany); Thomas Welsch (Rittal, Germany); Günter Siegmund (Rittal GmbH & Co. KG, Germany)

#### **UPS & Converters / EMC-Product Safety / Standards**

**Room:** Hall 2 Chair: Gunter Schmitt (Eltek/Valere Deutschland, Germany)

##### **III.1-2 Overview to ETSI Standards and Guides for Efficient Powering of Telecommunication and Datacom Equipment and Building**

Wilfried Schulz (Deutsche Telekom Netzproduktion GmbH, Z TE5, Germany)

##### **III.2-2 The new product safety standard for Information and Communication Technology equipment**

Wilfried Schulz (Deutsche Telekom Netzproduktion GmbH, Z TE5, Germany)

## Technical Session IV

4:10 PM - 6:00 PM

### Alternative Power Sources for Telecom Networks

Room: Hall 1 Chair: Bernhard Böden (Power Innovation GmbH, Germany)

#### **IV.1-1 The Green Base Station**

Gunter Schmitt (EltekValere Deutschland, Germany)

#### **IV.2-1 On Chip Micro Power Generator for Smart Pavement Material (SPM)**

Hassan Homami (Parsons Brinckerhoff, USA); David Crouse (City College of New York, USA); Nadereh Moini (Rutgers University, USA); Geotge Moglia (Parsons Brinckerhoff, USA)

#### **IV.3-1 Energy Efficient Power System Solutions with passive cooled Outdoor System**

Dirk Weniger (b+w Electronic Systems GmbH & Co. KG, Germany)

#### **IV.4-1 Application of new technologies as primary and backup power supply in Telecom Installations**

Dieter Braechtken (Downstream UG, Germany)

### Operation-Maintenance / Thermalmanagement

Room: Hall 2 Chair: Wilfried Schulz (Deutsche Telekom Netzproduktion GmbH, Z TE5, Germany)

#### **IV.1-2 Development of-48V DC power supply system for high power ICT equipment**

Tadatoshi Babasaki (NTT, Japan); Toru Tanaka (NTT, Japan)

#### **IV.2-2 The next generation smart telecom power distribution with solid state hypride circuit breakers and the contribution to pwer and facility management**

Richard Mehl (E-T-A Elektrotechnische Apparate GmbH, Germany)

#### **IV.3-2 Thermal and energy management system based on low cost Wireless Sensor Network Technology, to monitor, control and optimize energy consumption in Telecom Switch Plants and Data Centres**

Fernando Genova (Telecom Italia, Italy); Fabio Luigi Bellifemine (Telecom Italia, Italy); Marco Gaspardone (Telecom Italia, Italy); Maurizio Beoni (Telecom Italia, Italy); Alberto Cuda (Telecom Italia, Italy); Gian Piero Fici (Telecom Italia, Italy)

#### **IV.4-2 U.S. Gulf Coast Telecommunications Power Infrastructure Evolution since Hurricane Katrina**

Alexis Kwasinski (The University of Texas at Austin, USA)

**Wednesday, May 13**

## **Technical Excursions**

**8:30 AM - 12:00 AM**

### **Tour 1**

#### **Music theatre “Ronacher” Backstage**

The „**RONACHER**“ is an music theatre in the center of Vienna. In the last 2 years an undergoing conversion took place, on 30th June, 2008 the RONACHER opened its doors following a complete refurbishment of its facilities. Now this theatre owns the modernist technical infrastructure with highly professional machine operation, lighting, sound and mechanics.

This excursion gives us the possibility to visit this theatre “backstage” and we will have a look on technical details.

The maximum number of people to attend the excursion is 35.

Link: [http://www.musicalvienna.at/en/vbw/theater/t2cat707/t6\\_292](http://www.musicalvienna.at/en/vbw/theater/t2cat707/t6_292)

### **Tour 2**

#### **Traffic telematics**

The firm **Kapsch TrafficCom AG** is an international supplier of innovative traffic telematic solutions. The company develops and delivers primarily electronic toll collection systems, especially for multi-lane free-flow traffic and offers technical and commercial operation of these systems. In addition Kapsch TrafficCom offers traffic management solutions focusing on traffic safety and control, electronic access systems and parking management systems. With over 210 references in 33 countries in Europe, Australia, Latin America, Middle East, Asia Pacific and in South Africa, Kapsch TrafficCom has positioned itself as one of the world’s leading suppliers in this specialized arena with subsidiaries and representatives in 22 countries.

This excursion brings us to the test center of the company and we will have a look on the technical background of modern traffic telematics.

The maximum number of people to attend the excursion is 40.

Link: <http://www.kapsch.net/en/ktc/Pages/default.aspx>