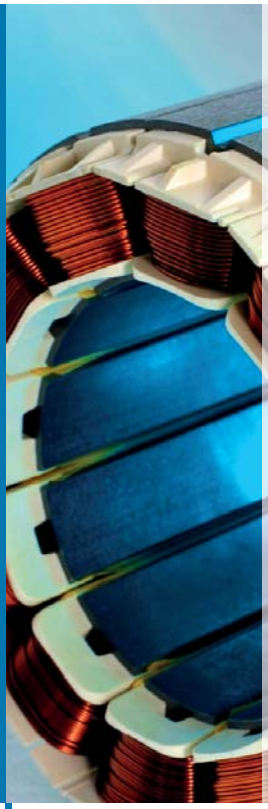
E|DPC-2011

Electric Drives Production
Conference 2011



join the establishment of the global community of electric drives production

1st International Conference

Electric Drives Production

September 28th – 29th, 2011
Nuremberg, Germany

Preliminary PROGRAM & INVITATION

SIEMENS

ebmpapst

Bühler Motor

SEMIKRON innovation+service

SCHABMÜLLER the power of e-motion

brose Technik für Automobile

magcam

UNITY

Automation Valley Nord-Bayern

ECPE

FAPS

FVA Forschungsvereinigung Antriebstechnik e.V.

IHK Industrie- und Handelskammer Nürnberg für Mittelfranken

IEEE Joint IAS/PELS/IES German Chapter

Marsilli Group

cluster mechatronik & automation

Mesago Messe Frankfurt

metropolregion nürnberg SEE IT. FEEL IT. STAY.

ETG POWER ENGINEERING SOCIETY WITHIN VDE

VDE

E|Drive-Center
Bayerisches Technologiezentrum für elektrische Antriebstechnik

IEEE

FAU FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG

ABOUT EDPC

Increasing power consumption, CO_2 reduction, growing mobility or progressing automation – none of these future megatrends is possible without powerful electric drives. The electrification of the automobile powertrain is considered crucial, as the whole sector is facing difficulties resulting from the substitution of the conventional combustion engine. Besides advancing ideas on the design of powerful electric drives, the organization of the manufacturing processes and systems is of great importance.

EDPC 2011, the first International Electric Drives Production Conference offers an outstanding platform for the exchange of experiences for developers, researchers and potential users in production planning and operations as well as for machine tool vendors and process specialists.

The focus of the conference is set on the presentation of highly innovative products from various industries as well as manufacturing processes and strategies. Following the conference, there will be an industrial exhibition, tutorials, a poster presentation, technical tours and an accompanying program.

DAILY SCHEDULE (preliminary)

Wednesday, September 28, 2011

Opening Session. Session Chair: Prof. Franke J., University of Erlangen-Nuremberg (D)

9:00	K. Hessel, Deputy Minister for Economic Affairs Bavaria	Welcome Address
9:15	Prof. Franke J., University of Erlangen-Nuremberg	The All-Electric Society Based on Electric Drives
9:45	Dr. Wittenstein M., Wittenstein AG, VDMA Past-President	E-Mobility – Opportunities and Challenges for the German Engineering Industries
10:15	Franke R.-M., Siemens AG, CEO Drive Technologies Division	Welcome Address

10:45 Coffee Break

Track on E-Mobility (Easy Credit Saal)

Session 1. New Electric Motor Concepts for E-MobilesSession
Session Chair: Prof. Hahn I., University of Erlangen-Nuremberg (D)

11:15	Mathoy A., BRUSA Elektronik AG, Sennwald (CH)	Innovative Motor- and Inverter Concepts
11:40	Hoffmann, B., Compact Dynamics, Starnberg (D)	Axial Flux Motor DYNAXA Compact Electric Drive for Automotive Power Trains
12:05	Deák C., Baumüller Nürnberg GmbH (D)	Compact Motor and Drive System with High Power Density for Mobile Machines
12:30	Dr. Ombach G., Brose Fahrzeugteile GmbH & Co. KG, Würzburg (D)	Design of Permanent Magnet Synchronous Motor or High Volume Automotive Applications

Track on Industrial Applications (Müller Medien Saal)

Session 2. Control Methods
Session Chair: Prof. Piepenbreier B., University of Erlangen-Nuremberg (D)

11:15	Kellner S. L., University of Erlangen-Nuremberg (D)	Impact of Iron Losses on Parameter Identification of Permanent Magnet Synchronous Machines
11:40	Seilmeier M., University of Erlangen-Nuremberg (D)	Modelling and Model Based Compensation of Non-Ideal Characteristics of Two-Level Voltage Source Inverters for Drive Control Application
12:05	Dr. Strothmann R., HighTec EDV-Systeme GmbH, Saarbrücken (D)	DFC (Direct Flux Control) - a Simple Algorithm for Sensorless Control of PMSM-Motors at Arbitrary Speeds
12:30	Dr. Vitek O., Brno University of Technology (CZ)	Design of Compact BLDC Drive

12:55 Lunch Break

Session 3. Production Concepts and Processes for Electric Machines
Session Chair: Dr. Gerstenberger J., Robert Bosch GmbH (D)

14:15	Tschiesner A., McKinsey, Munich (D)	Changes of Value Creation in the Automotive Industry through Electric Mobility
14:40	Dr. Moebius F., BMW AG, Munich (D)	Realisation of an Electric Motor Batch Production by Innovative Manufacturing Technologies for the BMW ActiveE Electrical Drive
15:05	Lamprecht E., Daimler AG, Stuttgart (D)	Fundamental Investigations of Eddy Current Losses in Laminated Stator CoresCreated Through the Impact of Manufacturing Processes
15:30	Klier T., University of Erlangen-Nuremberg (D)	Efficient Electric Motor Recycling Techniques of High Energy Magnet Material Using Industrial Disassembling Methods

Session 4. New Electric Motor Concepts for Industrie Applications
Session Chair: Prof. Mütze A., TU Graz (A)

14:15	Dr. Jajtic Z., Siemens AG, Munich (D)	Segmented Electric Machine - Modular Motor and System Topology for Direct Drives
14:40	Krotsch J., ebm-papst Mulfingen GmbH & Co. KG, Mulfingen (D)	Reduction of Torque and Radial Force Fluctuation in Permanent Magnet Synchronous Motors by Means of Multi-Objective Optimization
15:05	Huf A., University of Stuttgart (D)	Linear Actuator Module Based on Multiple Direct Drives
15:30	Neubauer A., ANDREAS STIHL AG & Co. KG, Waiblingen (D)	New Compact High-Torque Drive for Mobile Outdoor Power Equipment

15:55 Coffee Break

Session 5. Production Technologies for Power Electronics
Session Chair: Prof. Kolar J., ETH Zürich (CH)

16:25	Steger J., SEMIKRON Elektronik GmbH & Co. KG, Nuremberg (D)	A New Generation of Power Modules with Sinter-Technology for the Automotive Industry
16:50	Dr. Lehnberger C., ANDUS ELECTRONIC GmbH, Berlin (D)	High Current PCBs - System Integration of Busbars and Electronics
17:15	Weber A., Conti Temic microelectronic GmbH, Nuremberg (D)	Factory of the Future for Powerelectronics in Hybrid & Electric Vehicles
17:40	Dr. Ramsayer R. M., Robert Bosch GmbH, Schwieberdingen (D)	Laser Beam Welding of Copper Components with Brilliant Lasers in the Infrared and Green Wavelength Region

Session 6. Production Concepts for Electric Machines
Session Chair: Prof. Kremser A., Georg Simon Ohm University of Applied Sciences Nuremberg (D)

16:25	Fritsche R., - University of Bayreuth (D)	Reducing Set-Up Times for Improved Flexibility in High-Mix Low-Volume Electric Drives Production
16:50	Böhm A., University of Erlangen-Nuremberg (D)	A New Approach in the Production of Electrical Motors Using Only Machining Processes
17:15	Dr. Kuttler R., ifp - Prof. Dr.-Ing. Joachim Milberg Institut für Produktion und Logistik GmbH & Co. KG, Garching (D)	Trends in Plant Design with Focus on Component Production for Electric Drives
17:40	Raeder S., Siemens AG, Bad Neustadt (D)	Synchronized Production of Electrical Motors 1FK7

19:00 Conference Dinner

DAILY SCHEDULE (preliminary)

Thursday, Semptember 29, 2011

Track on Manufacturing and Assembly (Easy Credit Saal)

Session 7. New Applications and Assembly Technologies
Session Chair: Prof. Willner K., University of Erlangen-Nuremberg (D)

9:00	Jaksic D., Unum Limited, Remuera (NZ)	"Getting rid of the air" – or How to Maximise the Winding Fill Factor
9:25	Weigl M., Bayerisches Laserzentrum, Erlangen (D)	Laser-Welded Connections for High-Power Electronics in Mobile Systems
9:50	Groeger A., Georg Simon Ohm University of Applied Sciences Nuremberg (D)	Efficiency Improvement of Small Hydroelectric Power Stations with a Permanent-Magnet Synchronous Generator
10:15	Heinzelmann G., ANDREAS STIHL AG & Co. KG, Waiblingen (D)	Energy Efficient Drive Train for High-Performance Battery Chain Saw

10:40 Coffee Break

Session 9. Winding Technologies
Session Chair: Prof. Feldmann K., University of Erlangen-Nuremberg (D)

11:15	Albrecht T., Daimler AG, Stuttgart (D)	Proceedings for Wiring Integrated Winding of Segmented Stators of Electric Machines
11:40	Hagedorn J., Aumann GmbH, Espelkamp (D)	Winding Methods for Cost - and Material Optimized Stator
12:05	Halder H., risomat Otto Rist GmbH & Co.KG, Baienfurt (D)	Innovative Coil Winding – Inserting Systems
12:30	Kiefer D., MARSILLI & Co. S.p.A., Castelleone (I)	New Methods for Efficient Stator Winding

12:55 Lunch Break & Postersession

Poster Session.
Session Chair: Prof. Dietz A., Georg Simon Ohm University of Applied Sciences Nuremberg (D), Dr. Dobroschke A., University of Erlangen-Nuremberg (D)

	Dr. Drubel O., Siemens AG, Berlin (D)	Alternative Stiff Asynchronous Motor Design for Efficient Pipeline Operation Schemas
	Hofmann J., Siemens AG, Nuremberg (D)	Innovative Motor Design for Production Machines
	Dr. Iles D., Ingenieurbüro Dr.-Ing. Dorin Iles, Augsburg (D)	Modular Stator Cores for PMSM – Impact on Machine Parameters
	Logé H., LTN Servotechnik GmbH, Otterfing (D)	The Best Way How to Use Resolvers
	Loos F., University of the Federal Armed Forces Munich (D)	Simulation Methods of Heat Transfer Processes in Mechanical and Electrical Connections

Session 11. Manufacturing and Test
Session Chair: Prof. Frey L., Fraunhofer IISB (D)

14:40	Kock A., Fraunhofer IFAM, Bremen (D)	Casting Production of Coils for Electrical Machines
15:05	Gardocki A., University of Erlangen-Nuremberg (D)	Investigation of the Thermo-Oxidative Degradation of the Plastic Bonded Rare-Earth-Magnets During the Injection Molding Process
15:30	Dr. Lelkes A., GEFEG-NECKAR Antriebssysteme GmbH, Gosheim (D)	Test System for Electric Motors with Integrated Control Unit
15:55	Dr. Vervaeke K., MagCam NV, Leuven (B)	Inline Magnet Inspection Using Fast High Resolution MagCam Magnetic Field Mapping and Analysis
16:20	Parthum D., Scheugenpflug AG, Neustadt a. d. Donau (D)	Vacuum-Aided Potting for High-Voltage Components

16:45 Coffee Break

17:15 Siemens AG (D), University of Erlangen-Nuremberg (D) — Best Paper Award

17:25 Prof. Franke J., University of Erlangen-Nuremberg (D) — Closing words and look-out

Track on Engineering and Materials (Müller Medien Saal)

Session 8. New Electric Motor Concepts for Industry
Session Chair: Prof. Fräger C., Power Engineering Socity within VDE (D)

9:00	Dr. Becker S., University of Erlangen-Nuremberg (D)	Efficient and Silent Cooling of Electric Drives – Basics, Measurement Techniques and Computational Approaches
9:25	Festa M., TU Dresden (D)	Improved Performance through Multifunctional Material Utilization – Circumferential Cooling for Electric Motors
9:50	Hofmann M., Fraunhofer IISB, Erlangen (D)	Thermal Characterization of an Axle-Twin-Drive with System Integrated Double-Inverter
10:15	Eichinger B., Siemens AG, Nuremberg (D)	Calculation Methods for Electromagnetically Excited Noise in Induction Motors

Session 10. Simulation and Calculation
Session Chair: Dr. Becker S., University of Erlangen-Nuremberg (D)

11:15	Prof. Ließ H.-D., University of the Federal Armed Forces Munich(D)	Optimal dimensions for electrical conductors in mobile systems
11:40	Kostetzer L., CADFEM GmbH, Grafing (Munich) (D)	Scalable System Simulation for Electric Drives
12:05	Lu X., University of Windsor (CDN)	Modeling and Comprehensive Analysis of Induction Assisted Permanent Magnet Synchronous AC Motor
12:30	Igelspacher J., TU Munich (D)	Analytic Examination of Coupled Axial-Flux Induction Machines with Reduced Yoke

	Dr. Schöning M., e+a Elektromaschinen und Antriebe AG, Moehlin (CH)	Automated Electrical Machine Design with Differential Evolution Techniques
	Dr. Steinbrink J., University of Hanover (D)	Applicable Finite Meshes
	von Zimmermann M., University of Erlangen-Nuremberg (D)	Model-based Voltage Estimation for Inverters with Small or No DC-Link Capacitance
	von Zimmermann M., University of Erlangen-Nuremberg (D)	Efficiency Comparison of a Z-Source Inverter and a Voltage Source Inverter with Active Front End
	Dr. Werner U., Siemens AG, Nuremberg (D)	Optimized Rotor Design for Rigid Balancing of Large Flexible Induction Rotors

Session 12. New Materials
Session Chair: Prof. Drummer D., University of Erlangen-Nuremberg (D)

14:40	Noguchi K., Aichi Steel Corporation, Tokai (J)	Development of Dy-free NdFeB Anisotropic Bonded Magnet (New MAGFINE)
15:05	Farmbauer K., Siemens AG, Munich (D)	New Precision Actuating Drives „PAD" – an Interaction of Piezoelectric Actuators
15:30	Hoffmann H., University of Erlangen-Nuremberg (D)	Medium Frequency Transformer for Railway Applications Using New Materials
15:55	Dorninger F., voestalpine Stahl, Linz (A)	High Stregth Electrical Steel for Fast Rotating Electric Machines
16:20	Buchgeher E., Siemens AG, Linz (A)	Aluminium Transformator

TUTORIALS

On Tuesday, September 27, 2011 vendors of product- and process technologies, service providers or research organizations may offer tutorials to the participants of the conference. You can use rooms in various sizes (from 20 up to 200 attendees) and for different durations (half or full days).

During the tutorials one or more speakers will provide the participants with a profound and applied know-how about a specific topic. Tutorials may be held in English or German.

If you want to arrange a tutorial, please submit an abstract up to 1000 words, written within two pages, submitted in English to the conference office (the abstracts will be published in the conference program) containing the following information:
Title of the tutorial, subject and topic of the tutorial, 3-6 keywords, full name, organization or company, postal and email addresses of all speakers and the target audience.

Tuesday, September 27, 2011	
Tutorial 1: Energy Dynamics Lab (EDL), PULS-Marktforschung, University Erlangen-Nuremberg	Market potentials of inductive charging infrastructures for electric vehicles
Tutorial 2: UNITY AG	Robust innovation roadmap: how to cope successfully with the disruptive future in the automotive markets
Turorial 3: University Erlangen-Nuremberg	Automated Magnet Handling And Bonding Of Rare Earth Magnets
Turorial 4: ANSYS Germany GmbH	Electromechanical System Simulation in Wind Energy

TECHNICAL TOURS

On Friday, September 30, 2011, leading industrial companies and research institutes will offer to all participants the opportunity to visit their facilities. Please register as soon as possible as the number of attendees is limited.

Friday, September 30, 2011		
Tour A Research on electronics and electric motor production	**Institute 1:** Institute for Manufacturing Automation and Production Systems (FAPS) - Electronics Production Lab, Nordostpark 91, Nuremberg **Institute 2:** Bavarian Technology Center for Electric Drives (E|Drive-Center), Auf AEG, Fuerther Str. 246, Nuremberg	FAU Friedrich-Alexander Universität Erlangen-Nürnberg FAPS E|Drive-Center Bayerisches Technologiezentrum für elektrische Antriebstechnik
Tour B Research on electric machines and power electronics	**Institute 3:** Institute for Electrical Drives and Machines (EAM) Development Center and Test Laboratory, Cauerstr. 9, Erlangen **Institute 4:** Institute for Manufacturing Automation and Production Systems (FAPS) Egerlandstraße 7-9, Erlangen **Institute 5:** Fraunhofer Institute for Integrated Systems and Component Technologies (IISB) Testcenter for electric vehicles, Schottkystraße 10, Erlangen	FAU Friedrich-Alexander Universität Erlangen-Nürnberg EAM FAPS Fraunhofer IISB
Tour C Automotive serial production of electric steering motors, windows and seat actuator	**Plant tour:** Brose Fahrzeugteile GmbH, Wuerzburg **Sightseeing:** Guided tour through picturesque town of Wuerzburg	brose Technik für Automobile
Tour D Large drives production technology and power electronics manufacturing	**Plant tour 1:** Siemens AG, Large Drives, Nuremberg **Plant tour 2:** SEMIKRON International GmbH, Nuremberg	SIEMENS SEMIKRON innovation + service

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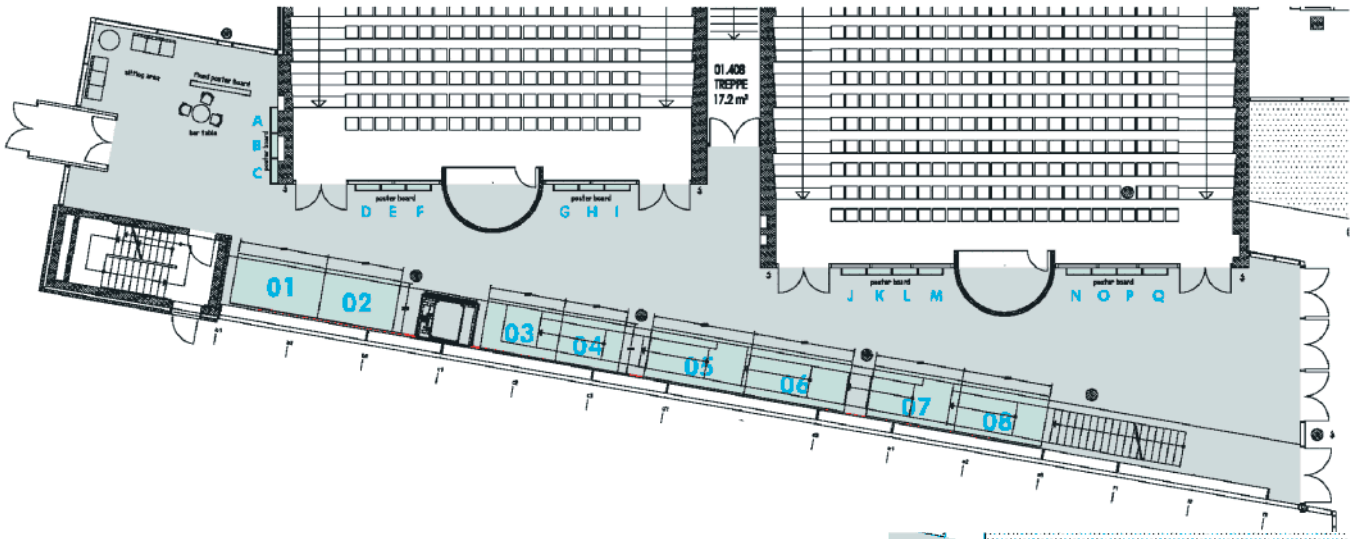
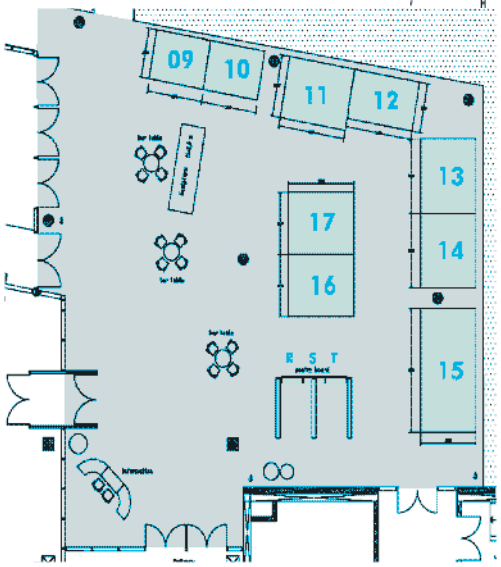
EXHIBITION

The EDPC 2011 will be complemented by an accompanying exhibition from Tuesday, September 27, 2011 until Thursday, September 29, 2011. Companies, research institutes and other organizations will be offered the opportunity to present their products and services to all participants. A perfect t of your target audience and detailed technical discussions are guaranteed. You may either choose a cost efficient poster presentation or a professional booth. Find more information on our website **www.edpc.eu.**





BOOTH EXHIBIT PACKAGE
- One 230 volt outlet (high voltage connection available on request)
- Fully carpeted floor
- Listing on the conference website with link to your website
- Rental exhibition systems are provided at additional fee.
- You can order single booths or combine a series of booths.
- Rental rates are € 40 per m^2
- Booth will be assigned on a first come first served basis.
- Please register until August 1, 2011

GENERAL CONDITIONS

Refunds, minus a €100 processing fee, will be made for booth cancellations if cancelled before August 1, 2011.
If cancelled after August 1, 2011 the full booth fee must be paid.
All exhibitors also have to register as participants of the EDPC 2011.

Spaces limited!

VENUE

The EDPC 2011 will take place at Friedrich-Alexander University Erlangen-Nuremberg, Germany on September 28th - 29th, 2011. We reserved plenty parking lots as well as an underground car park. For your accommodation, several hotels are booked all over the city. For prices and reservation, please use the reservation form on our website www.edpc.eu.

Nuremberg boasts a unique mixture of tradition and modern times. Both people born here and people who moved here appreciate its extraordinary quality of life. At the same time, Nuremberg is a modern city with 500,000 inhabitants, and the centre of a prospering European metropolitan region with 2.5 million inhabitants. Its almost thousand years of history are still obvious in its cityscape.

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Are you interested in supporting the EDPC conference and presenting your company or institute as a sponsor? Please contact service@epdc.eu.

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By fax: +49 (911) 58 0 58 66
By email: service@edpc.eu
Online: www.edpc.eu

For the fax registration please use the following registration form:

Salutation _____ Title _____

First Name _____ Last Name _____

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CONFERENCE FEE

o Standard Fee - 890,- € plus VAT

o Reduced Fee* - 580,- € plus VAT

I also register for

o Tutorial #___ - 80,- € plus VAT

o Technical Tour Package ___ - 100,- € plus VAT

o Evening Event - included

* Reduced fee for International Program Committee members, speakers and university members. All prices plus VAT.

CONTACT

EDPC 2011 office, c/o FAPS-TT GmbH
Fürther Straße 246, D-90429 Nürnberg

Tel: **+49 (911) 58 0 58 44**
Fax: **+49 (911) 58 0 58 66**

E-Mail: **service@edpc.eu**
Web: **www.edpc.eu**