

Preliminary* Program Brochure 2024

* details are subject to change

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A conference held by:









ABOUT E | PTS

The future megatrends of increasing power consumption, CO2 reduction, urbanization, and mobility, along with automation and digitalization, highlight the critical role of efficient production technologies and systems. The electrification of powertrains in various mobility sectors is essential, considering the challenges posed by substitution of conventional propulsion technologies. In addition to advancing ideas for propulsion technologies, organizing manufacturing processes and systems is of importance. International paramount The Conference on Production Technologies and Systems for E-Mobility provides an exceptional platform for developers, researchers, and potential users to share their experiences. The conference focuses on presenting highly innovative products, manufacturing processes, and strategies from diverse industries. Furthermore, an accompanying complementary industrial exhibition. presentation, and an engaging social program will enhance the overall experience. The conference showcases cutting-edge e-mobility technologies.

ON-SITE ORGANIZATION

Opening time conference:

Wednesday, 5 June 2024, 08:30 AM - 05:15 PM Thursday, 6 June 2024, 08:30 AM - 04:30 PM

Phone: +49 162 2423573

Opening time table top exhibition:

Wednesday, 5 June 2024, 09:00 AM - 05:15 PM Thursday, 6 June 2024, 09:00 AM - 03:30 PM

PUBLICATION

All scientific fullpapers accepted and registered will be part of the proceedings of E|PTS. The scientific contributions will be presented orally in various sessions or as poster presentations. It is intended that the E|PTS proceedings, which will include all scientifically accepted papers, will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements.

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CONTACT



Benedikt Scheffler

Conference Coordination, Exhibition, Sponsorship, Organization, Registration, Scientific

Guidance

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FOREWORD BY THE CONFERENCE HOST



Dear distinguished experts in E-mobility!

As the world continues to embrace the transition to a more sustainable future, electromobility stands at the forefront of this transformation. With electric vehicle registrations in Germany poised to exceed previous records, it's clear that the push for cleaner, greener transportation options is gaining momentum. This evolving landscape extends its influence beyond personal transport, reshaping industries and urban environments alike, as we collectively steer towards an eco-friendlier horizon.

We're excited to introduce the first-ever E|PTS conference, hosted in Bamberg by the Institute FAPS in cooperation with the wbk Institute of Production Science of the Karlsruhe Institute of Technology as well as the chair for Production Engineering of E-mobility Components of the RWTH Aachen University. This pioneering event will highlight the expansive field of electromobility, featuring a keynote from the CEO of WAFIOS, who will delve into advanced manufacturing's role in electromobility.

E|PTS will cover a wide array of topics, from next-gen electric vehicles and battery technology to charging infrastructure and mobility policies. This conference is a unique platform for unveiling new research, innovations, and strategies, supported by expert insights and opportunities for networking. Our exhibit will showcase the latest technologies from industry leaders, offering personalized consultations to meet your specific needs.

Join us in Bamberg for two days filled with insightful discussions and opportunities to connect with peers and industry leaders. E|PTS 2024 promises to be a beacon for those eager to explore the future of electromobility.

We look forward to welcoming you to Bamberg for an inspiring journey into the world of electromobility.

Prof. Dr.-Ing. Jörg Franke

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INTERNATIONAL CONFERENCE COMMITTEE

CONFERENCE CHAIRMAN

Prof. Franke J.Friedrich-Alexander-Universität Erlangen-Nürnberg

PUBLICATION CHAIRMAN

Prof. Jung M.Hochschule Bonn-Rhein-Sieg

LOCAL ORGANIZING COMMITTEE

Dr. Kühl A.Friedrich-Alexander-Universität Erlangen-Nürnberg

INTERNATIONAL PROGRAM COMMITTEE

Prof. Fleischer J.
Karlsruhe Institute of Technology
Prof. Mpofu K.
Tshwane University of Technology

Prof. Ihlenfeldt S.
TU Dresden
Prof. Dietrich F.
TU Berlin
Prof. Söderberg R.
Chalmers University of Technology
Prof. Battaïa O.
Kedge Business School Bordeaux
Prof. Kampker A.
RWTH Aachen University
Prof. Urban N.

TH Deggendorf

Prof. Ceglarek D.
University of Warwick
Prof. Papakostas N.
University College Dublin

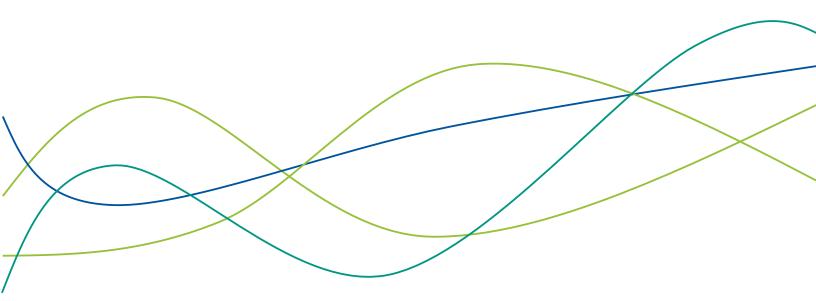
Prof. Vrabič R.
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Prof. Thiede S.
University of Twente
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Linköping University
Prof. Zaeh M.
Technical University of Munich
Prof. Parspour N.
University of Stuttgart

Prof. Biswas W.K.
Curtin University
Prof. Tracht K.
University of Bremen

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FH Dortmund
Prof. Heimes H.
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University of Bristol
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Purdue University
Prof. Schlund S.
TU Wien
Dr. Hubert M.
Valeo eAutomotive Germany GmbH
Prof. Daub R.,
Technical University of Munich

Prof. El Mansori M.



TIME SCHEDULE - OVERVIEW

	WEDNESDAY, 5 JUN	IE 2024	
08:30 AM	Welcome Coffee		
09:00 AM	Opening of the Conference: Prof. Franke Jörg, FAU Erlangen-Nürnberg		
09:05 AM	Opening Keynote 1: Vachaparampil Mathew, CEO Caresoft Global		
09:40 AM	Opening Keynote 2: Dr. Weigmann Uwe-Peter	r, CEO WAFIOS	
10:15 AM	Coffee Break		
	Track 1	Track 2	
10:45 AM	Electric Drives Production I Prof. Fleischer J., Karlsruhe Institute of Technology	Production Systems I Prof. Kampker A., RWTH Aachen University **	
12:15 AM	Lunch Break		
01:45 PM	Prof. Danzer M., University of Bayreuth **	Prof. Schulze J., Fraunhofer IISB	
03:15 PM	Coffee Break		
03:45 PM	Battery Production I Prof. Christiansen., Fraunhofer IKTS	Lifecycle Assessment I Prof. Döpper F., Fraunhofer IPA	
05:15 PM	End of Conference Day One		
07:30 PM	Evening Reception		
	THURSDAY, 6 JUNE 2024		
08:30 AM	Welcome Coffee		
	Track 1 - Hegelsaal 1	Track 2 - Hegelsaal 2	
08:45 AM	Electric Drives Production II Prof. Urban N., TH Deggendorf	Production Systems II Prof. Dix M., Fraunhofer IWU	
10:15 AM	Coffee Break		
10:45 AM	Power Supply & Transfer II Prof. Parspour N., University of Stuttgart	Prof. Jung M., Hochschule Bonn-Rhein-Sieg	
12:15 AM	Lunch Break		
01:45 PM	Battery Production II Prof. Dietrich F., TU Berlin **	Lifecycle Assessment II Dr. Beitinger G., Siemens **	
03:15 PM	Coffee Break		
03:25 PM	Closing Keynote		
03:55 PM	Best Paper Award and Closing Words		
04:30 PM	End of Conference Day Two		

 $[\]ensuremath{^{\star}}$ Session chairs and scheduled sessions are subject to change.

^{**} Requested

TIME SCHEDULE - DETAILED - DAY ONE

Wednesday, 5 June 2024

08:30 AM	Welcome Coffee	
09:00 AM	Opening of the Conference: Prof. Franke, Jörg, Friedrich-Alexander-Universität Erlangen-Nürnberg	
09:05 AM	Opening Keynote: Mathew Vachaparampil, CEO Caresoft Global	
09:40 AM	Opening Keynote: Innovative production solutions through scalable, flexible hairpin production Dr. Weigmann, Uwe-Peter, CEO WAFIOS	
10:15 AM	Coffee Break	
	Session 1: Electric Drives Production I Hegelsaal 1	Session 2: Production Systems II Hegelsaal 2
	Session Chair: Prof. Fleischer, Jürgen, Karlsruhe Institute of Technology (DE)	Session Chair: Prof. Kampker, Achim, RWTH Aachen University (DE)
10:45 AM	Optimizing the productivity of the linear winding of rectangular shaped coils using a servo-based wire	Scaling a pilot line to an industrial level using material flow simulations based on the use case of printed magnetic sheets
	Karlsruhe Institute of Technology	Institute FAPS
11:15 AM	Optimizing the Manufacturing Chain of Axial Flow Machines: A Comprehensive Study	Comprehensive Approach to Automated Cable Plugging in Electric Vehicle Manufacturing
	Institute FAPS	TU Berlin
11:45 AM	A Simulation-Based Approach to Optimize Variant Flexible Hairpin Stator Production	Integrating logistics and production systems for optimized electric heater manufacturing in the automotive industry
	RWTH Aachen University	Fraunhofer IGP
12:15 PM	Lunch Break in Foyer Ground Floor	
	Session 3: Power Supply & Transfer I Hegelsaal 1	Session 4: Power Electronics Production I Hegelsaal 2
	Prof. Danzer, Michael, Universität Bayreuth (DE)	Session Chair: Prof. Schulze, Jörg, Fraunhofer IISB (DE)
01:45 PM	Inductive Charging - What you can expect	Comparative study on different methods to generate synthetic data for the classification of THT solder joints
	Prof. Parspour, N., University of Stuttgart IEW	Institute FAPS

02:15 PM	Bi-directional DC Charging Stations for EVs on renewable-powered LVDC Grids: Design, Sizing, Control and Testing	tbd
	Institute FAPS	Prof. Schulze J., Fraunhofer IISB
02:45 PM	Potential of inductively heated tools for compacting insulated copper litz-wires	E-Mobility Disrupting Automotive Production Technologies
	Institute FAPS	Institute FAPS
03:15 PM	Coffee Break	
	Session 5: Battery Production II Hegelsaal 1	Session 6: Lifecycle Assessment I Hegelsaal 2
	Prof. Christiansen, Fraunhofer IKTS (DE)	Session Chair: Prof. Döpper, Frank, Fraunhofer IPA (DE)
03:45 PM	An Introduction to Cold Atmospheric Plasma Spraying for the Copper Coating of Ceramic Solid Electrolytes for Solid State Batteries	Sustainable manufacturing practices: A systematic analysis and guideline for assessing the industrial Product Carbon Footprint
	Institute FAPS	Institute FAPS
04:15 PM	Unlocking Industrial Potential of High- Speed Gluing for Battery Manufacturing	EV battery remanufacturing based on System Lifecycle Management enabled by the Digital Thread Graph
	TU Berlin	SAP
04:45 PM	Comparison of Longitudinal Wrinkle Formation During Calendering of NMC811 and LFP Cathodes	Increased Sustainability and Productivity in High-Performance Tapping for Electric Powertrain Components
	Karlsruhe Institute of Technology	TU Dortmund
05:15 PM	End of Conference Day One	
07:30 PM	Evening Reception at Rauchbierbrauerei Sch	nlenkerla

 $[\]ensuremath{^{\star}}$ Session chairs and scheduled sessions are subject to change.

TIME SCHEDULE - DETAILED - DAY TWO

Thursday, 6 June 2024

08:30 AM	Welcome Coffee	
	Session 1: Electric Drives Production II Hegelsaal 1	Session 2: Production Systems I Hegelsaal 2
	Session Chair: Prof. Urban, Nico, TH Deggendorf (DE)	Session Chair: Prof. Schuh, Günther, RWTH Aachen University (DE)
08:45 AM	Cost reduction in hairpin stator production using a variant-flexible tool for twisting flat copper conductors RWTH Aachen University	Establishing a Machine Learning based Visual Inspection System for the End-of- Line-Inspection on the Example of an Automotive Supply Use-Case Fraunhofer IGP
09:15 AM	A Review of Electromagnetic Simulation and Modeling Approaches for the Research on Axial Flux Synchronous Machines	Value Innovations in E-Automotive Production Systems - Applying Blue Ocean Strategy to Build the Factory of the Future
	University of Stuttgart IEW	FH Dortmund
09:45 AM	Comprehensive Review and Systemization of the Product Features of Axial Flux Machines	Blockchain-Enabled Traceability for Transparency and Data Integrity in Slurry Mixing for Lithium-Ion Battery Cell Production
	RWTH Aachen University	Karlsruhe Institute of Technology
10:15 PM	Coffee Break	
	Session 3: Power Supply & Transfer II Hegelsaal 1	Session 4: Power Electronics Production II Hegelsaal 2
	Prof. Parspour, Nejila, University of Stuttgart (DE)	Prof. Jung, Marco, Hochschule Bonn-Rhein- Sieg
10:45 PM	tbd	Ultrasonic welding of leadframe based mold modules on AMB substrates in the emobility
	Akerman, P., Siemens Mobility	Goth, C., Vitesco
11:15 PM	tbd	Laser structuring of stamping grids enables efficient production of media tight connectors for battery packs, power electronics and cooling systems for edrives
	Wendt, A., Electreon	KERN-LIEBERS

11:45 PM	tbd	Laser Welding of Metal Ceramic Substrates with Green Laser Wavelength for E-Mobility Power Electronics
	Kuschnerus, M., Altana	TRUMPF
12:15 PM	Lunch Break in Foyer Ground Floor	
01:00 PM	Scientific Poster Session in Foyer	
	Measurement Technology in Industrial Low Vo Procedure, Institute FAPS	ltage DC grids - Requirements and Selection
	Session 5: Battery Production I Hegelsaal 1	Session 6: Lifecycle Assessment II Hegelsaal 2
	Session Chair: Prof. Dietrich, Franz, Technische Universität Berlin (DE)	Session Chair: Prof. Beitinger, Gunter, Siemens (DE)
01:45 PM	Penetration tests on battery electrodes to estimate the nominal gap of battery calenders	Sizing of Electric Ferry Production Based on Simulated Demand and Potential CO2 Savings in the CEP Logistics Sector
	Karlsruhe Institute of Technology	Fraunhofer IGP
02:15 PM	Investigation on Defects of Battery Pouch Cell Housing	Repair of defective contact points in hairpin stator production using laser welding
	Karlsruhe Institute of Technology	RWTH Aachen University
02:45 PM	Laser cutting technology exploits the productive and automated disassembly of EOL automotive battery packs	Cost Modell for Agile Battery Cell Manufacturing
	TRUMPF	Karlsruhe Institute of Technology
03:15 PM	Coffee Break	
03:25 PM	Closing Keynote: tbd	
03:55 PM	Best Paper Award and Closing Words: Prof. Franke, Jörg, Friedrich-Alexander-Universität Erlangen-Nürnberg (DE)	
04:30 PM	End of Conference Day Two	

^{*} Session chairs and scheduled sessions are subject to change.

PARTICIPANTS

(ENTHAACHEN UNIVERSITY	The Chair of Production Engineering of E-Mobility Components (PEM) at RWTH Aachen University stands for pioneering research and innovation in the field of electromobility. The PEM team is developing the production processes of electric vehicles and their individual components. An equally important focus is on recycling and the development and safety of batteries. In all areas, application-oriented research projects are complemented by numerous industrial collaborations.
C ALTANA	The ALTANA Group develops and produces high-quality, innovative specialty chemical products. Our four divisions BYK, ECKART, ELANTAS and ACTEGA set global standards in their markets. With innovative products, we are already enabling technologies of the future that make life easier, safer and more convenient.
electron Charging the way forward	Electreon is the leading provider of wireless charging solutions for electric vehicles (EVs). We deliver cost-effective, end-to-end charging infrastructure and services, including dynamic charging wireless Electric Roads, to fleet operators via flexible business models to accelerate electric vehicle adoption.
FAPS	The Institute for Factory Automation and Production Systems (FAPS) of the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), innovates drive concepts and the related production technologies. These developments are aimed to be transferred from scientific findings to industrial applications. The key activities of the E Drive Center are the analysis and optimization of the production-oriented construction and the production process design of components and systems for electrical drives. Furthermore, the manufacturing and testing processes are addressed for the components of inductive charge electric vehicles. The center supports the automotive industry in the increasing usage of electric drive systems for the vehicles, and it improves the knowledge transfer in the field of electric drive technology in Bavarian industries.
Fraunhofer	Fraunhofer IEE conducts research in the fields of energy economics and energy systems technology. It develops solutions for economic and technical problems in the transformation of energy supply systems. Our research focuses aggregate the necessary skills to realize the business areas. They include the skills and experience of our scientists, their equipment with laboratories and test facilities, their networking in the scientific community as well as patents and IPRs.
Fraunhofer	The Fraunhofer Institute for Large Structures in Production Engineering IGP in Rostock focuses its research on tasks in the field of production and manufacturing of large structures. On the basis of applied research, concepts for product and process innovations are developed and realized for many future industries such as shipbuilding and steel construction, energy and environmental technology, rail and commercial vehicle construction as well as mechanical and plant engineering within the framework of research and development projects with our cooperation partners.
Fraunhofer	The Fraunhofer IISB in Erlangen specializes in wide-bandgap semiconductors and efficient power electronics. Here, material and component expertise merges with complex system development, especially for electromobility and sustainable energy supply.
Fraunhofer IKTS	As a research and technology service provider, Fraunhofer IKTS develops modern high-performance ceramic materials, industry-relevant manufacturing processes and prototype components and systems in complete production lines up to pilot scale. The research portfolio also includes expertise in materials diagnostics and testing. Testing methods in the fields of acoustics, electromagnetics, optics and microscopy make a significant contribution to the quality assurance of products and systems.
iew	The institute's research work focuses on two main areas: electrical machines and contactless energy transmission. Both areas are key topics in the field of electromobility. The scientists at iew are researching the design of electric motors with very high torque density and position-tolerant inductive charging systems. The aim is to develop highly efficient components for electric vehicles of the future.
KERN-LIEBERS GROUP OF COMPANIES	KERN-LIEBERS, a medium-sized family business based in south-west Germany, is a global technology leader in the manufacture of highly complex parts and assemblies with a focus on springs and stamped parts. The KERN-LIEBERS Group develops and manufactures precision steel strip and wire products of the highest quality at over 40 locations worldwide.
SAP	SAP stands at the forefront of enterprise software solutions, revolutionizing how businesses operate and succeed in a digital world. With a global footprint, SAP empowers organizations across various industries by providing cutting-edge software for business processes, analytics, and information management. Their commitment to innovation extends to cloud computing, artificial intelligence, and sustainable enterprise solutions, enabling companies to achieve operational excellence and adapt to the ever-evolving market demands. SAP's collaborative approach with its vast ecosystem of partners and customers fosters co-innovation, ensuring that its solutions are at the forefront of technology trends and business needs. Through its dedication to helping businesses run better, SAP is shaping the future of industry, making it more efficient, resilient, and sustainable.
SCHAEFFLER GRUPPE	Schaeffler is a leading global manufacturer in the automotive and industrial sectors, specializing in the development and manufacture of precision components and systems for engines, transmissions and chassis as well as rolling and plain bearing solutions. With a strong focus on research and development, Schaeffler drives innovation to increase the efficiency, reliability and sustainability of vehicles and machines. Schaeffler is committed to the mobility of the future by developing solutions for electric mobility, digitalization and renewable energies. Schaeffler's global presence and

	commitment to excellence secure it a leading position in the market, with the aim of driving technological progress and contributing to a greener world.
\$ schlaeger	Schlaeger is a competent manufacturer of mechatronic components in the fields of actuators and sensors for customers in the international automotive, electrical engineering and medical industries. For 30 years, the company has been supplying major Tier 1 suppliers worldwide with millions of units. The modern company designs customized and innovative solutions for each customer and manufactures everything from prototypes to large-scale production at the highest level of cleanliness.
SIEMENS	With around 86,000 employees and several thousand trainees, Siemens is one of the largest private employers and training companies in Germany. As a leading technology group with a focus on industry, infrastructure and mobility, we are shaping the transition to the digital age together with our customers and partners.
Technische Universität Berlin	At the Institute for Machine Tools and Factory Management our research and teaching activities are geared towards the technology and management of industrial factory operations and encompass both the development of process technologies and production facilities as well as their information technology modeling. Scientists are currently working on the "digital factory" in twelve interdisciplinary fields. The aim is to map and network product development, production planning and production using information technology in such a way that product development and life cycles can be simulated, verified and optimized end-to-end.
TRUMPF	Cutting, welding, marking, surface processing - more and more experts in production technology appreciate the flexibility, versatility and cost efficiency of lasers as a tool. At TRUMPF, you will find the right laser for every task. We advise and support you on how to build your smart factory step by step by networking your lasers with software, machines and services, thus equipping yourself for the digital future of your production.
VILESCO	Vitesco Technologies is a leader in developing innovative, efficient powertrain technologies for sustainable mobility. Specializing in electrification solutions, Vitesco enables the automotive industry to reduce emissions and transition towards electric vehicles. Their portfolio includes electric drives, electronic controls, sensors, and actuators, all designed to enhance vehicle performance and efficiency. With a commitment to innovation and sustainability, Vitesco Technologies plays a crucial role in shaping the future of transportation, making it cleaner and more sustainable. Through partnerships and a focus on advanced technologies, Vitesco is at the forefront of driving the automotive industry towards a greener future.
WAFIOS []	WAFIOS is a global leader in the manufacturing of wire and tube processing equipment, renowned for its innovative engineering and precision machinery. Specializing in a wide range of machines for bending, forming, straightening, cutting, and welding, WAFIOS supports industries ranging from automotive to construction with high-quality solutions. Their commitment to technology advancement ensures that clients benefit from machines that optimize production efficiency, enhance product quality, and reduce operational costs. With a history rooted in tradition yet focused on the future, WAFIOS continues to set industry standards through continuous research and development. Their global network and comprehensive service offerings guarantee customer support from initial consultation through to after-sales services, making WAFIOS a trusted partner in shaping the future of wire and tube processing.
wbk institut for Produktionstechnic	The wbk Institute of Production Engineering at KIT focuses on application-oriented research in production technology, emphasizing areas like electromobility, hybrid lightweight construction, and additive manufacturing. It investigates adapting traditional production methods to new materials and designs scalable systems for future factories. With advanced facilities, the wbk offers excellent conditions for research, aiming to integrate process, system, and automation understanding towards networked factories. Engaging in joint projects with industrial partners, the institute develops solutions for a broad spectrum of production technology challenges, preparing for the future of manufacturing.

BECOME A SUPPORTER

Are you interested in supporting E|PTS 2024 and presenting your company or organization? E|PTS 2024 is the ideal platform for the individual advertising of your innovative products and services. For further information, please contact Benedikt Scheffler (phone: +49 162 2423573; e-mail: benedikt.scheffler@faps.fau.de)

REGISTRATION

Please register online via the registration formula at www.e-pts.de. After we have received your registration, we will send you a confirmation and an invoice, which we would ask you to settle before the event begins. In the event of cancellations received after 31 May 2024 the full participation fee will be billed. However, a replacement participant can be designated. The event organizer reserves the right to change the time of the whole event or individual parts of it or to alter or cancel it at short notice.

CONFERENCE FEE

Standard Fee	1195,00 €
Reduced Fee*	795,00 €
One Day Fee	795,00 €

CONTACT



Benedikt Scheffler

Conference Coordination, Exhibition, Sponsorship, Organization, Registration, Scientific Guidance

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VENUE



E|PTS 2024 is scheduled to be held at the Congress Centrum Bamberg, Germany. To cater to your accommodation needs, we have made arrangements with various hotels located throughout the city. The event takes place at the Konzert- und Kongresshalle Bamberg, Mußstraße 1, 96047 Bamberg.

EVENING RECEPTION

All participants of E|PTS 2024 are invited to the E|PTS 2024 Evening Reception on 5 June 2024, 7:30 PM. Detailed technical discussions are guaranteed and accompanied by a regional menu. The event will take place at Rauchbierbrauerei Schlenkerla, Dominikanerstraße 6, 96049 Bamberg.

www.e-pts.de

^{*} Reduced fee for international program committee members, speakers (including one paper), participating co-authors and university members. Fees will be charged for additional paper.