

AWK AACHENER
WERKZEUGMASCHINEN **2017**
KOLLOQUIUM May 18 - 19

Internet of Production for Agile Enterprises
May 18-19, 2017



The Conference at a Glance

CONCEPT

Lectures and Plenary Speeches

“Our lectures unite the expertise of the panel of experts from Industry and Research. These panels were compiled specially for each lecture.”

Break-Out Sessions & Tour of the Institutes

„Experience the highlights of the Internet of Production live in Aachen!”

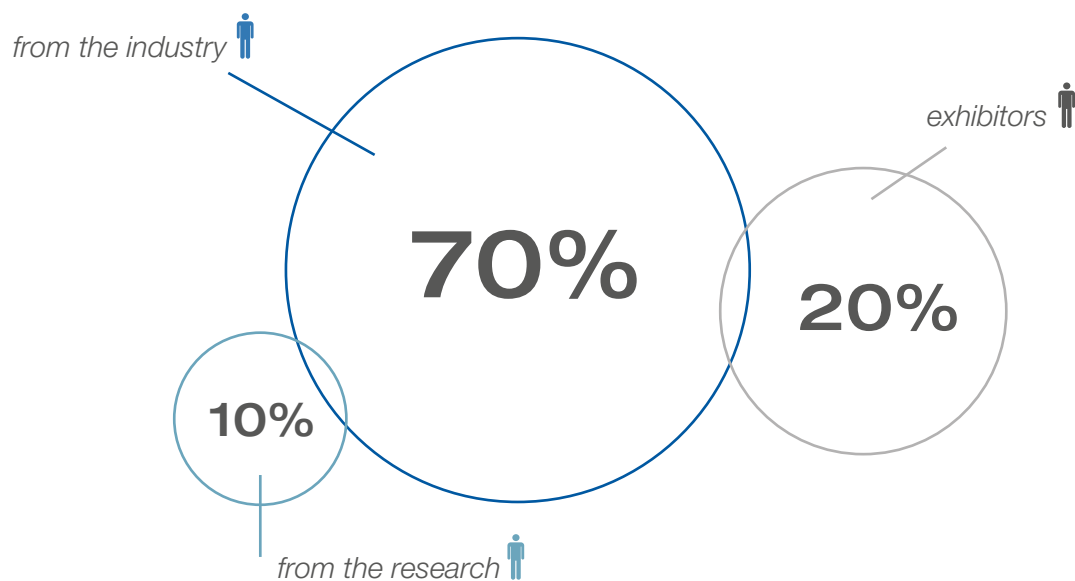
Industrial Exhibition

„The Who is Who of the manufacturing industry!”

Evening Reception

„You can expect a varied stage programme“

WHO WILL I MEET?



Greeting

AWK 2017

“Internet of Production for Agile Enterprises”

is the guiding theme of the AWK Aachen Machine Tool Colloquium 2017 that will be held for the 29th time from May 18-19.

Visit us in Aachen and find out how we develop the “Internet of Production” as a key element of the Industry 4.0 together with other experts from science and industry.

The term ‘Internet of Production’ describes the real-time capable and secure availability of information at any time and any place. Generated information is becoming a multilateral and high-volumed shadow of production. Pattern recognition is made possible through precise and continuous data analysis, thus allowing the system to make forecasts and support decisions on the way to a controlled production.

The significant potential to add value with the use of Internet of Production lies in its ability to learn from the collected data systematically. Agile and highly iterative product development as well as the fast and flawless implementation of change requests during series production become possible. The competitive advantage through information, aggregated in real-time, allows for new dimensions of adaptation capability and agility in terms of implementation.

The AWK 2017 offers you various approaches and strategies in terms of the Internet of Production in two parallel series of talks. They include technical and keynote presentations as well as six plenary speeches from science and industry. Benefit from our technical lectures which have traditionally been developed specifically for the AWK according to a unique concept of intensive collaboration between industry experts and researchers of the Laboratory for Machine Tools and Production Engineering (WZL) and the Fraunhofer Institute for Production Technology (IPT).

As a special highlight we will present the first series production electric automobile e.GO Life that we have developed utilising Industry 4.0 technologies. Furthermore, we will open Europe’s largest research cluster for production technology covering 30.000 square meter on the RWTH Aachen Campus as well as the brand new RWTH Aachen Business School.

The colloquium is a meeting point for more than 1,000 German and international experts who exchange their ideas on the implementation of specific solutions during the congress as well as at the accompanying industrial exhibition and at the guided tours of the institutes. In the course of the congress 2017 you will have the unique opportunity to visit the RWTH Aachen Campus.

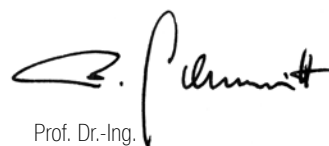
The 29th AWK will reveal the unexploited potential on a successful path into the future: Join us!



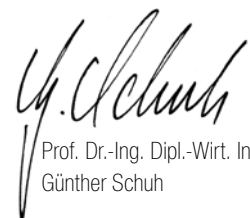
Prof. Dr.-Ing.
Christian Brecher



Prof. Dr.-Ing. Dr.-Ing. E.h. Dr. h.c. Dr.
h.c. Fritz Klocke



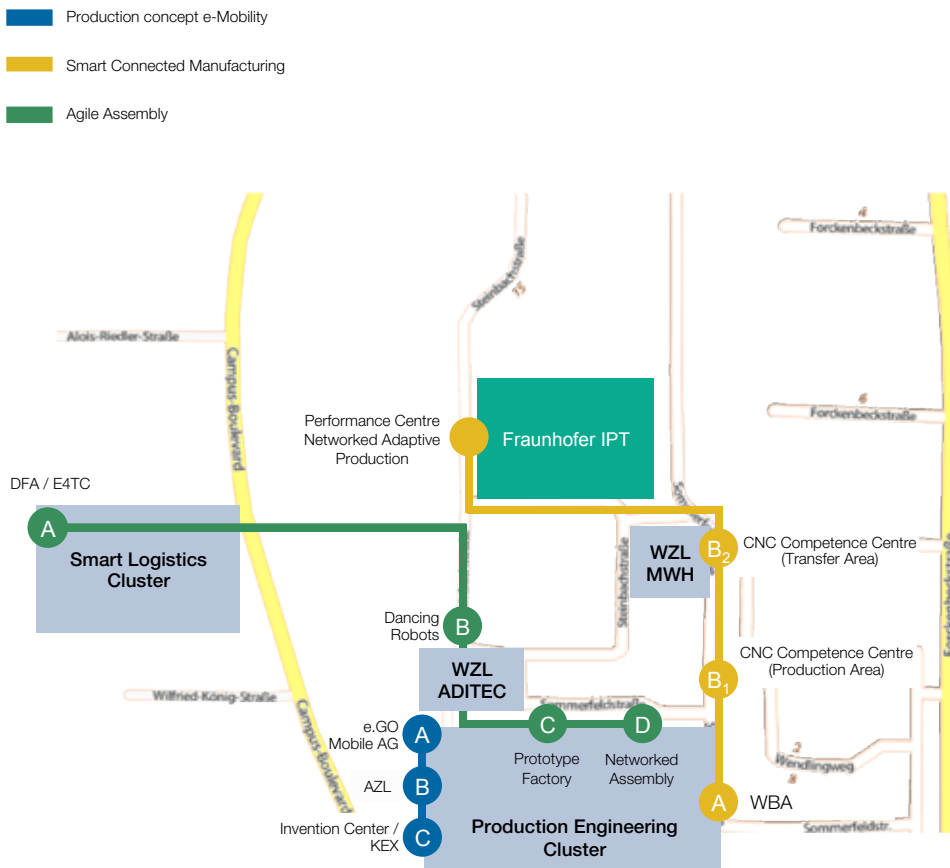
Prof. Dr.-Ing.
Robert Schmitt



Prof. Dr.-Ing. Dipl.-Wirt. Ing.
Günther Schuh

Top-Level Research at First Hand

Take the opportunity to experience live the highlights of the Internet of Production in Aachen and participate in the inspection of our test stands as well as in the Breakout Sessions.



The Breakout Sessions



Production Concept e-Mobility

Production concepts for electro-mobility from the initial idea to the implementation will be presented at the Cluster for Production Technology. Additionally, the Invention Center will show you how an inspirational working environment in combination with an expert network and method knowledge can spark innovation. The Aachen Center for Integrated Lightweight Construction (AZL) will display how lightweight components for electro-mobility can be manufactured suitable for large-series production using a single production cell unit. The e.GO Mobile AG, an RWTH Aachen spin-off for electro-mobility, will reveal its pre-series production of the e.GO Life model which is designed to be extremely cost-efficient. To achieve this goal a pragmatic degree of automation and a reduced number of handling activities per component are the guiding principles throughout the production area.



Smart Connected Manufacturing

Smart Connected Manufacturing will show you the advantages of a connected production. The WBA Tool Making Academy Aachen will present automated, digital and connected systems in single or small batch production using the example of tool making. The Industry 4.0 approaches with their focus on chipping production are refined, tested and implemented by the CNC Competence Center in order to fit existing production processes. Furthermore, the Fraunhofer Performance Center of Connected, Adaptive Production will display how the manufacture and maintenance of complex components can be achieved with consistent connection and digitisation of the production environment at the example of its pilot production line for blisks (blade integrated disks).

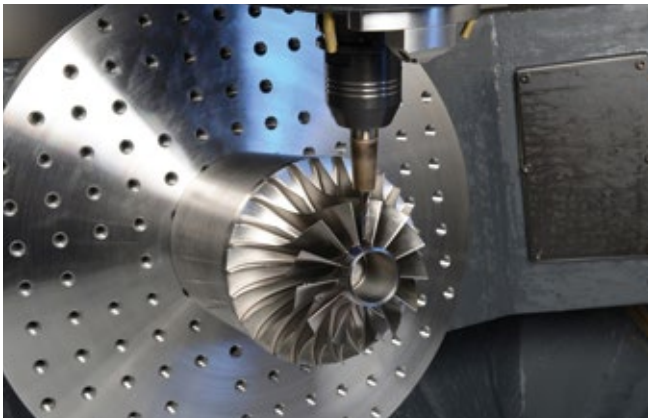


Agile Assembly

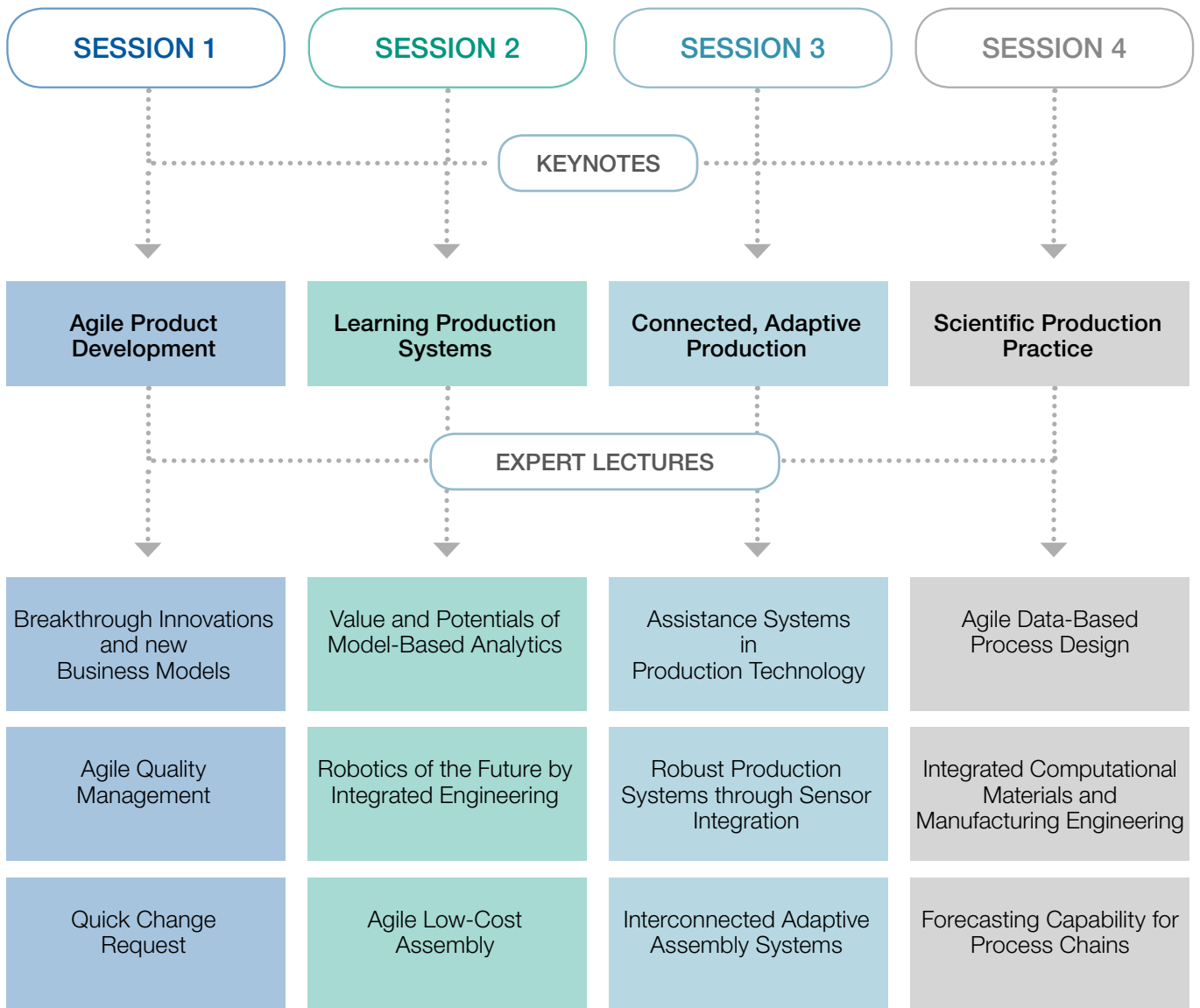
It is the consistency of digital data as well as adapted production resources that allow for agile assembly. The demonstration factory and the European 4.0 Transformation Center will present you how development and production processes can become more transparent and agile by the tracking of order processing, a digital shadow of production and quick change requests. Additionally, the 'Dancing Robots' will showcase their robot-based welding process on an e.GO kart frame. At our ramp-up factory we realise agile assembly with the use of autonomous vehicles, an innovative controlling and management system, autonomous equipment and a fixture construction specialised in additive manufacturing processes. The connected assembly will demonstrate the concept of 'Free Float Flawless', the connection of all resources in production such as robots, self-driving platforms, measuring and control systems as well as the final product along with its assembly components.

Tour of Institutes

Throughout the AWK you will have plenty of opportunities to get to know our research institutes. On both days of the event following the presentation schedule, we open the doors for you to take a look at our halls, laboratories and testing areas. They are currently located at WZL and Fraunhofer IPT and two more testing areas in Aachen. We provide you with a shuttle service to the locations, so that you will be able to get a deep insight into our numerous test benches.



The Colloquium



Programme Day 1

09.00

Welcome

Prof. Dr. Günther Schuh, WZL of RWTH Aachen / Fraunhofer IPT
Marcel Philipp, Lord Mayor of the City of Aachen

09.10

Introduction

Prof. Dr. Günther Schuh, WZL of RWTH Aachen / Fraunhofer IPT

09.30

Plenar 1.1: Agile Enterprise

Dr. Stefan Hartung, Robert Bosch GmbH

10.00

Plenar 1.2: Digital Enterprise for Discrete Industries

Dr. Jan Mrosik, Siemens AG

10.30

Coffee Break and Visit of the Industrial Exhibition

11.00

Plenar 1.3: Artificial Intelligence in the Internet of Production

Prof. Dr. Sabina Jeschke, IMA/ZLW & IfU of RWTH Aachen

11.30

Panel Discussion: Dr. Stefan Hartung, Dr. Jan Mrosik, Prof. Dr. Sabina Jeschke

Moderation: Prof. Dr. Fritz Klocke, WZL of RWTH Aachen / Fraunhofer IPT

12.00

SESSION 1

Moderation: Prof. Dr. Gisela Lanza,
Karlsruhe Institute of Technology
Keynote: Agile Product Development
Prof. Dr. Günther Schuh,
WZL of the RWTH Aachen / Fraunhofer IPT

SESSION 2

Moderation: Prof. Dr. Alexander Verl,
University of Stuttgart
Keynote: Learning Production Systems
Prof. Dr. Christian Brecher,
WZL of the RWTH Aachen / Fraunhofer IPT

12.30

Lunch Break and Visit of the Industrial Exhibition

13.45

SESSION 1

Breakthrough Innovations and new Business Models
Dr. Christine Haller, Daimler AG

Agile Quality Management
Prof. Dr. Thomas Preß, P3 group mbH

Quick Change Request in Production Operation
Dr. Bastian Franzkoch, Ortlinghaus-Werke GmbH

SESSION 2

Value and Potentials of Model-Based Analytics
Dr. Marcus Queins, Dörries Scharmann Technologie GmbH

Robotics of the Future by Integrated Engineering
Dr. Axel Peters, BROETJE Automation GmbH

Interconnected Adaptive Assembly Systems
Prof. Dr. Achim Kampker, StreetScooter GmbH

15.00

Transfer Eurogress / Campus Melaten / Karl-Friedrich-Straße / Rotter Bruch

15.30

Opening of the Cluster Production Technology of the RWTH Aachen Campus and of the RWTH Business School

16.15

Tour of the Institutes and Breakout Sessions

19.00

Evening Reception

Programme Day 2

09.00

Welcome

Prof. Dr. Ernst Schmachtenberg, Rector of RWTH Aachen
Prof. Dr. Günther Schuh, WZL of RWTH Aachen / Fraunhofer IPT

09.15

Plenar 2.1: IT-Security 4.0

Prof. Dr. Claudia Eckert, Chair of IT Security at TU Munich

09.45

Coffee Break and Visit of the Industrial Exhibition

10.25

SESSION 3

Moderation: Prof. Dr. Dirk Biermann,
TU Dortmund

Keynote: Connected, Adaptive Production

Prof. Dr. Fritz Klocke,
WZL of RWTH Aachen / Fraunhofer IPT

SESSION 4

Moderation: Prof. Dr. Berend Denkena,
Leibniz University Hannover

Keynote: Scientific Production Practice

Prof. Dr. Robert Schmitt,
WZL of RWTH Aachen / Fraunhofer IPT

10.55

SESSION 3

Assistance Systems in Production Technology

Dr. Christoph Bönsch, KOMET GROUP GmbH

Robust Production Systems through Sensor Integration

Bernd Essig, MAPAL Dr. Kress KG

Interconnected Adaptive Assembly Systems

Dr. Andreas Schreiber,
PHOENIX CONTACT GmbH & Co. KG

SESSION 4

Agile Data-Based Process Design

Philipp Reusch, Reusch Rechtsanwälte

Integrated Computational Materials and Manufacturing Engineering

Prof. Dr. Kai-Uwe Schröder, SLA of RWTH Aachen

Forecasting Capability for Process Chains

Herbert Johann, ZF Friedrichshafen AG

12.10

Lunch Break and Visit of the Industrial Exhibition

13.25

Plenar 2.2: Strengthening the Economy's Innovation Potential

Prof. Dr. Christoph M. Schmidt, RWI – Leibniz Institute of Economic Research

13.55

Plenar 2.3: Organisational Ambidexterity

Prof. Dr. Ann-Kristin Achleitner, Chair of Entrepreneurial Finance at TU Munich

14.25

Panel Discussion: Prof. Dr. Claudia Eckert, Prof. Dr. Christoph Schmidt, Prof. Dr. Ann-Kristin Achleitner

Moderation: Prof. Dr. Günther Schuh, WZL of RWTH Aachen / Fraunhofer IPT

14.45

Perspective

Prof. Dr. Günther Schuh, WZL of RWTH Aachen / Fraunhofer IPT

15.00

Transfer Eurogress / Campus Melaten / Karl-Friedrich Straße / Rotter Bruch

15.15

Tour of the Institutes and Breakout Sessions

17.00

End of Event

Plenum

The hosts



**Prof. Dr.-Ing.
Christian Brecher**
Chair of Machine Tools at WZL
and Head of the Department
for Production Machines at
Fraunhofer IPT



**Prof. Dr.-Ing. Dr.-Ing. E.h.
Dr. h.c. Dr. h.c. Fritz Klocke**
Chair of Manufacturing
Technology at WZL and Head
of the Department for Process
Technology at Fraunhofer IPT



**Prof. Dr.-Ing.
Robert Schmitt**
Chair of Metrology and
Quality Management at WZL
and Head of the Department
for Production Quality and
Metrology at Fraunhofer IPT



**Prof. Dr.-Ing. Dipl.-Wirt. Ing.
Günther Schuh**
Chair of Production
Engineering at WZL and
Head of the Department for
Technology Management at
Fraunhofer IPT

Plenum

Plenary Speakers



Prof. Dr. Ann-Kristin Achleitner
Chair of Entrepreneurial Finance at
the Technical University of Munich (TUM)

Ann-Kristin Achleitner has been holding the Chair of Entrepreneurial Finance since 2001. She is a member of the supervisory boards of Linde AG, Deutsche Boerse AG, Muenchener Rueckversicherungs-Gesellschaft AG and serves on the board of directors of ENGIE SA.



Prof. Dr. Claudia Eckert
Director of the Fraunhofer Institute for
Applied and Integrated Security (AISEC)
and Chair of IT Security at the
Technical University of Munich (TUM)

Claudia Eckert has been Director of the Fraunhofer Institute for Applied and Integrated Security AISEC since 2009. Since 2008 she has been Professor at the Chair for IT-Security at the Technical University of Munich. Mrs. Eckert is a member of Programme Committees of scientific conferences and journals as well as various scientific advisory boards.



Dr. Stefan Hartung
Executive Director of
the Robert Bosch GmbH

Dr. Stefan Hartung is a member of the board of management of Robert Bosch, responsible for the Energy and Building Technology business sector, with its Security Systems, Thermotechnology, and Global Services Solutions divisions as well as for the Robert Bosch Smart Home GmbH subsidiary.



Prof. Dr. Christoph M. Schmidt
President of the RWI –
Leibniz Institute for Economic Research

Christoph M. Schmidt received his Ph.D. at Princeton University, and graduated with the degree of Dr. rer. pol. habil. at the University of Munich. Since 2002 he has been president of RWI. Since 2009 he has been member of the German Council of Economic Experts, since March 2013 he has been its chairman.



Dr. Jan Michael Mrosik
CEO of Digital Factory Division
Siemens AG

Dr. Jan Mrosik has been Chief Executive Officer of the Siemens Digital Factory Division since June 2016. He holds a doctorate in electrical and industrial engineering, has served Siemens in a variety of capacities over the last 20 years. Prior to his current role, Jan Mrosik was CEO of the Energy Management Division of Siemens AG.



Prof. Dr. Sabina Jeschke
Head of the Cybernetics Lab IMA/ZLW & IfU
at the RWTH Aachen University

Sabina Jeschke has been head of the Cybernetics Lab IMA/ZLW & IfU at the RWTH Aachen University, faculty of mechanical engineering since 2009. Previous stages include the Berlin University of Technology, NASA/California, GATECH/Atlanta and University of Stuttgart. She is chairwoman of the board of management of the VDI Aachen and member of the supervisory board of the Körber AG. She is a member and consultant of numerous committees and commissions, alumni of the German National Academic Foundation (Studienstiftung des deutschen Volkes), IEEE Senior and Fellow of the RWTH Aachen University.

Speakers

Speakers



Dr. Christoph Bönsch
KOMET GROUP GmbH
CEO



Dr. Axel Peters
BROETJE Automation GmbH
Executive Vice Präsident (CTO)



Bernd Essig
MAPAL Dr. Kress KG
Management Development –
Mechatrical Systems



Prof. Dr. Thomas Prefi
P3 group mbH
CEO



Dr. Bastian Franzkoch
Ortlinghaus-Werke GmbH
Director Operations



Dr. Marcus Queins
Dörries Scharmann Technologie GmbH
Director Technology



Dr. Christine Haller
Daimler AG
Senior Manager Business Innovation



Philipp Reusch
Reusch Rechtsanwälte
Founding partner/Attorney-at-Law
(Germany)



Herbert Johann
ZF Friedrichshafen AG
Director Car Powertrain Technology
Toolshop and Measurement



Dr. Andreas Schreiber
PHOENIX CONTACT GmbH & Co. KG
Director Business & Product Innovation



Prof. Dr. Achim Kampker
StreetScooter GmbH
CEO



Prof. Dr. Kai-Uwe Schröder
RWTH Aachen University
Head of Institute of Structural Mechanics
and Lightweight Design

Moderators



Prof. Dr. Dirk Biermann
Head of Institute of Machining Technology
at TU Dortmund University



Prof. Dr. Gisela Lanza
Head of Institute of Production Technologies
at the Karlsruhe Institute for Technologies

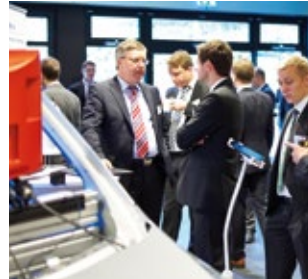


Prof. Dr. Berend Denkena
Head of Institute of Production Engineering
and Machine Tools at Leibniz University
Hannover



Prof. Dr. Alexander Verl
Head of Institute for Control Engineering of
Machine Tools and Manufacturing Units at
Stuttgart University

Industrial Exhibition



Within the framework of our exclusive industrial exhibition we will present you the latest products and approaches concerning production technology. Take the opportunity and join in the conversation with our exhibitors about their products and services. Furthermore experience the unique network character of the Aachen Machine Tool Colloquium (AWK) and meet renown and interesting new partners.

Please do not hesitate to join the exhibitors or sponsors and benefit from the renown of this event of the Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University and the Fraunhofer Institute for Production Technology IPT!

Further information at www.awk-aachen.de

List of Exhibitors – Industrial Exhibition AWK 2014

Alicona Imaging GmbH	gbm mbH	P3 Ingenieurgesellschaft mbH
Apprimus Verlag	GF Machining Solutions	Produktion NRW Cluster Maschinenbau / Produktionstechnik
Capgemini Deutschland GmbH	Houghton Deutschland GmbH	PROTECA Integrative Produktionstechnologie Aachen
Carl Zeiss Industrielle Messtechnik GmbH	IG Metall – Bezirk NRW	PRS Technologie Gesellschaft mbH
Complexity Management Academy GmbH	igus @ GmbH	Roschiwal + Partner Ingenieur GmbH
DMG MORI SEIKI Academy GmbH	Industrie- und Handelskammer Aachen	RWTH Aachen Campus GmbH
DMW Maschinen- und Werkzeugbau GmbH	ISCAR Germany GmbH	Schaeffler Technologies GmbH & Co. KG
Dörries Scharmann Technologies GmbH – Starrag Group	JAKOB Antriebstechnik GmbH	SCHNEEBERGER GmbH
DR. JOHANNES HEIDENHAIN GmbH	Karrierepool – WZL Aachen PS GmbH	Schuh & Co. GmbH
DR. WITTE & PARTNER GMBH	Kennametal Shared Services GmbH	Siemens AG
Elabo GmbH	Kistler Instrumente GmbH	Stratasys GmbH
EPLAN Software & Service GmbH & Co. KG	KOMET Group GmbH	StreetScooter Research GmbH PTC
Exapt Systemtechnik GmbH	Lean Enterprise Institut GmbH	t+h ingema ingenieurgesellschaft mbH
Exzellenzcluster „Integrative Produktionstechnik für Hochlohnländer“	Lenord, Bauer & Co. GmbH	TSUBAKI Kabelschlepp GmbH
Fastems GmbH	MARPOSS GmbH	TÜV-Rheinland GmbH
FIR e. V. an der RWTH Aachen	Modell Aachen GmbH	WBA Aachener Werkzeugbau Akademie GmbH
Fraunhofer-Institut für Produktionstechnologie IPT	M.TEC GmbH	Werth Messtechnik GmbH
Freundeskreis des WZL der RWTH Aachen e.V.	NIKON Metrology GmbH	WZL der RWTH Aachen, Abteilung Produktmanagement und Abteilung Organisationsentwicklung
Fritz Dräxlmaier GmbH & Co. KG	OTT-Jakob Spanntechnik GmbH	WZLforum an der RWTH Aachen
Fuchs Petrolub SE	Parametric Technoloy GmbH	
	PHOENIX CONTACT GmbH & Co. KG	

Venue and Organisers

Congress and Evening Reception



The Eurogress Aachen hosts large national and international congresses. It offers room for all kind of events: concerts and musicals, exhibitions, fairs, conferences, theatre shows and much more.

About us



Fraunhofer-Institute for Production Technology IPT

The Fraunhofer-Institute for Production Technology IPT develops production system solutions, focusing on the development of new production processes and production metrology as well as the associated plant and machining concepts. The institute also offers quality, technology and purchasing management with which to assist established companies in introducing new technologies. The Fraunhofer IPT's clients and cooperation partners come from all areas of the production industry, in particular the field of air and space technology, the automotive industry and its suppliers, tool and die makers, precision mechanics and optics industries as well as the machine tool industry.



The Laboratory for Machine Tools and Production Engineering WZL

The Laboratory for Machine Tools and Production Engineering WZL of the RWTH Aachen University has been involved in research and consultancy projects of a fundamental nature that work towards the needs of the industry since 1906. The WZL develops innovative, practical solutions to ensure that businesses develop successfully. The WZL aims to cover the whole field of production engineering by working on a wide range of topics from strategy, innovation, production and quality management to control, machine, production, measuring and gear technology.

Organisational Matters

Date

May 18-19, 2017

Venue

Eurogress Aachen
Monheimsallee 48
52062 Aachen

Participation Fee

1.250,- €

The participation fee includes: lecture programme, admissions to the industrial exhibition, tour of the institutes, conference proceedings, shuttle buses and meals on both days and at the reception. Fees for scientific events are not subject to VAT.

Evening Reception for Participants' Partners

Participation Fee 70,- €

This covers: dinner, drinks and entertainment on May 18, 2017.

Cancellation

In the event of a cancellation before April 30, 2017 the participation fees will be reimbursed minus an administration fee of 150,- €. Cancellations made after May 1, 2017 are non-refundable.

Registration

Please register on our website www.awk-aachen.de

Alternatively, you can register via the attached application form and send it filled out to us by post or fax. Once you have registered, you will receive an invoice via email. If you register on the website, you can pay directly by card as well. If you are registering from abroad, please use the website and pay by credit card.

Contact

Fraunhofer IPT
Steinbachstraße 17
52074 Aachen
Germany

Phone +49 241 80 236-14

Fax +49 241 80225-75

info@awk-aachen.de

www.awk-aachen.de

Hotel & Directions

aachen tourist service e.v.

Phone +49 241 18029-50-51

Fax +49 241 18029-30

booking@aachen-tourist.de

www.aachen-tourist.de

You will find a contingent of rooms below:

www.awk-aachen.de

More details about hotels and directions are available at

www.aachen-congress.de/hotels/awk

Registration Form

Aachener Werkzeugmaschinen-Kolloquium 2017 | May 18 - 19, 2017

I hereby register for the AWK 2017 for the participation fee of 1.250- €

Via mail or fax +49 241 8904-6500 or on www.awk-aachen.de

Preferred lecture session

on May 18, 2017

- Agile Product Development
- Learning Production Systems

on May 19, 2017

- Networked, Adaptive Production
- Scientific Production Practice

For accompanying partner

- Evening Reception on May 18, 2017 | 70,- €

Last Name*

First Name*

Title

Company / Institute*

Street / Post office box*

Zip code / Town*

Phone*

E-Mail*

Accompanied by* (if registered)

Signature*

Date*

*Input requested

I hereby agree that my name and business address will be registered. Exclusively for the purpose of the organisation of the seminar my name and address will be electronically processed and saved. The information will be used to deliver similar offers to your address unless you request not to:

- also by E-Mail
- just by E-Mail