



"Integrative  
Production Technology  
for High-Wage Countries"

**Host**

Aachen Machine Tool Colloquium  
Fraunhofer Institute for Production Technology IPT  
Laboratory for Machine Tools and Production  
Engineering WZL of the RWTH Aachen

**Organization**

Fraunhofer IPT  
Steinbachstr. 17  
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Germany

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PROGRAM

**WZL**  
**RWTHAACHEN**

 **Fraunhofer**  
IPT

# AWK 2011

## Competitive Factor Production Engineering – The Aachen Approach

Turbulent economic times place great demands on production technology, particularly in terms of vigilance and perseverance. At the same time, they also represent an opportunity for the production industry in western high-wage countries to demonstrate its unique strengths through the use of integrative product/process design and the deployment of qualified staff. The ability to set the right course now will not only safeguard a company's future competitiveness but will also make an important contribution to the prosperity of Europe.

The 27th Aachen Machine Tool Colloquium 2011 is addressing these challenges under the heading

### “Integrative Production Technology for High-Wage Countries”

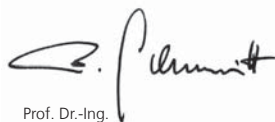
On May 26 and 27, 2011, renowned experts and speakers will be presenting their business strategies, technologies, concepts and experiences to an audience of around 1000 guests from the fields of industry and business, science and politics. 16 lectures in four sessions and six plenary lectures will inform about the current state of the production technology and highlight the promising perspectives for the future. We also offer visitors to the conference the opportunity to take a closer look at the research activities carried out in the machining facilities and laboratories at the WZL and Fraunhofer IPT.



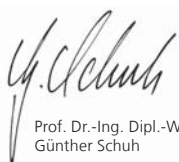
Prof. Dr.-Ing.  
Christian Brecher



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



Prof. Dr.-Ing.  
Robert Schmitt



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

## The AWK 2011

will be presented by the four directors of the Laboratory for Machine Tools and Production Engineering WZL of the RWTH and the Fraunhofer Institute for Production Technology IPT:



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



**Prof. Dr.-Ing. Dr.-Ing. E.h. Dr. h.c.  
Dr. h.c. Fritz Klocke**  
Executive Director of Fraunhofer IPT

Chair of Manufacturing Technology  
at WZL and Head of the Depart-  
ment for Process Technology at  
Fraunhofer IPT



**Prof. Dr.-Ing. Robert Schmitt**  
Managing Director of WZL

Chair of Metrology and Quality  
Management at WZL and Head  
of the Department for Production  
Quality and Metrology at Fraun-  
hofer 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

# Lecture program

## First-hand expertise

Top speakers from the fields of industry and science will be presenting the latest production technologies and business opportunities.

Four sessions of lectures will provide the participants with answers to the main questions related to sustainable production technology:

- How can autonomous production systems improve the flexibility of a company?
- How can the efficient use of resources also be economic?
- What are the technological challenges for production companies associated with tomorrow's products?
- How can versatile production systems bring mass production back to high-wage countries?

### What makes the AWK unique:

Every speaker represents a whole team of chosen experts, who elaborated the answers to these and other questions relevant to you.

# Plenary speakers



## Developments in the Global Economy – Opportunities for Germany

Prof. Dr. Dr. h.c. Hans-Werner Sinn  
Chair of Economics and Public Finance,  
Ludwig-Maximilians-University Munich,  
ifo Institute for Economic Research



## Sustainable Value Creation – Challenge and Opportunity for Production Technology

Prof. Dr.-Ing. Siegfried Russwurm  
Member of the Managing Board of Siemens AG  
CEO Sector Industry



## Resource-Efficient Production as a Driver for Innovation

Prof. Dr.-Ing. habil. Prof. E.h. Dr.-Ing. E.h. Dr. h.c. Reimund Neugebauer  
Fraunhofer Institute for Machine Tools and Forming Technology IWU; Institute for Machine Tools and Production Processes, Chemnitz University; President of the German Academic Society for Production Engineering



## Lasting Successful – Sustainable Corporate Governance and Brand Management

Dr.-Ing. Stefan Nöken  
Member of the Executive Board, Hilti AG



## The Mobility of Tomorrow Becomes Reality – How New Technologies Change an Entire Branch

Dr.-Ing. Peter E. Rieth  
Continental AG  
Member of the Management Board  
Division Chassis & Safety and Senior Vice President  
Systems & Technology

# Program

Thursday, May 26, 2011

	<b>Plenary Session Driver of Innovation: Integrative Production Technology</b>		
9:00	Welcome: Production Technology – Industrialization for the Future Prof. Dr.-Ing. Robert Schmitt		Eurogress
	Welcome Statements		
9:20	Integrative Production Technology for High-Wage Countries Prof. Dr.-Ing. Christian Brecher		
9:35	Developments in the Global Economy – Opportunities for Germany Prof. Dr. Dr. h.c. Hans-Werner Sinn		
10:25	Break		
10:50	Sustainable Value Creation – Challenge and Opportunity for Production Technology Prof. Dr.-Ing. Siegfried Russwurm		
11:30	Resource-Efficient Production as a Driver for Innovation Prof. Dr.-Ing. habil. Prof. E.h. Dr.-Ing. E.h. Dr. h.c. Reimund Neugebauer		
12:10	Lunch		
	<b>Session 1 Self-Optimizing Production</b>	<b>Session 2 Green Production</b>	
13:30	High Resolution Production Management	Eco <sup>2</sup> Production – From Life-Cycle Assessment to Competitive Advantage	Eurogress
14:05	Model-Based Control for Flexible Manufacturing Processes	Resource Efficiency in Machine Tool Manufacturing	
14:40	The Potential of Cognitive Systems in Production Technology	Sustainable Production	
15:15	Shuttle bus to the institutes		
15:15	Tour of Fraunhofer IPT, WZL and WZLforum Break-out Session RWTH Aachen Campus      Break-out Session Electromobility/eLab		Institutes
19:00	Admission to reception at the Eurogress		

# Program

Friday, May 27, 2011

	Session 3 Integrative Production	Session 4 Scalable Production	
9:00	Emotional Product Design – The Value of Perceived Product Quality	Synchronization in Industrial Tool Manufacture	Eurogress
9:35	Lean Innovation with Commonality Models	Reliable Adaptive Process Chains	
10:10	Break		
10:40	Integrative Design of Technology, Product and Manufacturing	Transformable Assembly Systems – Opportunity for a Challenging Future	
11:15	Hybrid Production Technology	Reference Systems for Versatile Production	
11:50	Precision Manufacturing in the Century of the Photon	Series Production of Large-Scale Parts	
12:30	Lunch		
Plenary session Entrepreneurial Action-Taking			
14:00	Introduction into the Plenary Session Prof. Dr.-Ing. Robert Schmitt		Eurogress
14:10	Lasting Successful – Sustainable Corporate Governance and Brand Management Dr.-Ing. Stefan Nöken		
14:50	The Mobility of Tomorrow Becomes Reality – How New Technologies Change an Entire Branch Dr.-Ing. Peter E. Rieth		
15:30	Outlook		
until 17:00	Industrial exhibition in the foyer	Tour of Fraunhofer IPT, WZL and WZLforum	

# Specialist lectures

Thursday, May 26, 2011

## Session 1 Self-Optimizing Production

### Chaired by

Prof. Dr.-Ing. habil. Peter Nyhuis  
Institute of Production Systems and Logistics,  
Leibniz University Hannover

- 13:30 High Resolution Production Management**  
Experts: Dr. T. Hartmann (TTS Tooltechnic Systems), Prof. A. Kampker (WZL), A. Keseberg (PSI), Prof. H. Lödding (IPMT, TU Hamburg-Harburg), T. Potente (WZL), Dr. C. Reuter (Freudenberg Simmerringe), Prof. G. Schuh (Fraunhofer IPT/WZL), Prof. V. Stich (FIR)
- 14:05 Model-Based Control for Flexible Manufacturing Processes**  
Experts: Dr. S. Gerloff (MTU Aero Engines), J. Herberger (Yamazaki Mazak), Prof. F. Klocke (Fraunhofer IPT/WZL), H. Randecker (TBT Tiefbohrtechnik), Dr. E. Schäfers (Siemens), Prof. A. Trächtler (Heinz Nixdorf Institut, Uni Paderborn), Dr. G. Wälder (Etel), Dr. G. Wirtz (WZL)
- 14:40 The Potential of Cognitive Systems in Production Technology**  
Experts: Prof. C. Brecher (Fraunhofer IPT/WZL), Dr. G. Hammann (Trumpf), Dr. W. Herfs (WZL), Dr. R. Koeppel (KUKA Roboter), Dr. L. Pauly (Siemens), Dr. F. Possel-Dölken (Phoenix Contact), Prof. A. Verl (Fraunhofer IPA, ISW Uni Stuttgart)

## Session 2 Green Production

### Chaired by

Prof. Dr.-Ing. habil. Prof. E.h. Dr.-Ing. E.h. Dr. h.c. Reimund Neugebauer  
Fraunhofer Institute for Machine Tools and Forming Technology IWU; Institute for Machine Tools and Production Processes IWP, Chemnitz University; President of the German Academic Society for Production Engineering (WGP)

- 13:30 Eco<sup>2</sup> Production – From Life-cycle Assessment to Competitive Advantage**  
Experts: C. Blankertz (Siemens), S. Ehrhardt (Miele), Dr. B. Franzkoch (WZL), C. Hammers (Fraunhofer IPT), M. Kaminski-Nissen (Hewlett-Packard), Dr. T. Löffler (TU Chemnitz), Prof. E. Müller (TU Chemnitz), B. Münks (Teekanne), D. Rohrmus (Siemens), M. Röwekamp (Miele), Prof. R. Schmitt (Fraunhofer IPT/WZL), Prof. G. Schuh (Fraunhofer IPT/WZL)
- 14:05 Resource Efficiency in Machine Tool Manufacture**  
Experts: H. Bode (Schaeffler Technologies), Prof. C. Brecher (Fraunhofer IPT/WZL), Dr. S. Hansch (EMCO Maier), Dr. N. Hennes (Dörries Scharmann Technologie), S. Bäumler (WZL), Dr. D. Prust (Chiron-Werke), C. Thoma (Maschinenfabrik Herkules), P. Wagner (Gebr. Heller Maschinenfabrik), Dr. S. Witt (Waldrich Siegen Werkzeugmaschinen), Dr. T. Würz (VDW)
- 14:40 Sustainable Production**  
Experts: Dr. J. Brühl (Bosch Rexroth), Dr. C. Hein (Audi), Dr. C. Herrmann (PE International), Dr. P. Jahns (Effizienz-Agentur NRW), Dr. M. Kleinjans (Daimler), Prof. F. Klocke (Fraunhofer IPT/WZL), D. Lung (WZL), Dr. A. Werner (BMW)

# Specialist lectures

Friday, May 27, 2011

## Session 3 Integrative Production

### Chaired by

Prof. Dr.-Ing. Jürgen Gausemeier  
Heinz Nixdorf Institute, University of Paderborn

Prof. Dr.-Ing. Berend Denkena  
Institute of Production Engineering and Machine  
Tools, Leibniz University Hannover

- 9:00 Emotional Product Design – The Value of Perceived Product Quality**  
Experts: P. Beaujean (WZL), Dr. R. Grob (Daimler), K. von Häfen (Festo), E. Köbler (Heidelberger Druckmaschinen), Prof. R. Schmitt (Fraunhofer IPT/WZL), R. Seitz (Gildemeister), Prof. M. Wagner (Braunwagner Design)
- 9:35 Lean Innovation with Commonality Models**  
Experten: J. Arnoscht (WZL), Dr. M. Leiters (Porsche), G. Pokraka (CLAAS), Dr. S. Schöning (MAG CORCOM), Prof. G. Schuh (Fraunhofer IPT/WZL), Dr. J. Schulz (Aesculap)
- 10:40 Integrative Design of Technology, Product and Manufacturing**  
Experts: P. Kitzer (3M), Dr. M. Meinecke (Alstom Power), Dr. C. Schaller (BSH), Prof. G. Schuh (Fraunhofer IPT/WZL), Dr. P. Weber (BMW), M. Wellensiek (Fraunhofer IPT), Dr. C. Zeppenfeld (MAN Diesel & Turbo)
- 11:15 Hybrid Production Technology**  
Experts: Prof. C. Brecher (Fraunhofer IPT/WZL), Dr. W. Bundschuh (Scheuermann + Heilig), Dr. D. Deutges (A. Monforts Werkzeugmaschinen), Dr. M. Emonts (Fraunhofer IPT), Dr. C. Eppler (Chiron-Werke), W. Erlenmaier (Trumpf), L. Probst (Alzmetall), Dr. R. Schmidt
- 11:50 Precision Manufacturing in the Century of the Photon**  
Experts: Dr. M. Achtsnick (Berliner Glas), Prof. C. Brecher (Fraunhofer IPT/WZL), Dr. H. Lauth (Fresnel Optics), Dr. K. Schmidt (LT Ultra), Dr. C. Wenzel (Fraunhofer IPT)

## Session 4 Scalable Production

### Chaired by

Prof. Dr.-Ing. Jan C. Aurich  
Institute of Manufacturing Engineering and Production Management, University of Kaiserslautern

Prof. Dr.-Ing. Alexander Verl  
Fraunhofer Institute for Manufacturing Engineering and Automation IPA; Institute for Control Engineering of Machine Tools and Manufacturing Units University of Stuttgart

- 9:00 Synchronization in Industrial Tool Manufacture**  
Experts: Dr. W. Boos (WZL), M. Breme (Audi), Dr. C. Hinsel (Hirschvogel), H. Johann (ZF Sachs), U. Schoof (Linde + Wiemann), Prof. G. Schuh (Fraunhofer IPT/WZL), Dr. K. Stoffel (Rathgeber), W. Vette (Audi)
- 9:35 Reliable Adaptive Process Chains**  
Experts: Dr. S. Altmüller (Leitritz Turbinenkomponenten), Dr. T. Bergs (Fraunhofer IPT), W. Börsch (StaragHeckert), Prof. F. Klocke (Fraunhofer IPT/WZL), B. Kriegl (MTU Aero Engines), Y. Murtezaoglu (ModuleWorks/Aixpath), C. Siebenwurst (Siebenwurst Werkzeugbau)
- 10:40 Transformable Assembly Systems – Opportunity for a Challenging Future**  
Experts: Dr. M. Esser (WZL), F. Hasse (Phoenix Contact), Prof. R. Müller (WZL), Dr. T. Rochlitz (Getrag Ford), Dr. U. Siewert (Dürr), J. Walther (Bosch Rexroth)
- 11:15 Reference Systems for Versatile Production**  
Experts: Dr. F. Demeester (NIKON Metrology), Dr. M. Dresselhaus (Reis Robotics), Dr. I. Essel (MAN Truck & Bus), Dr. B. Pause (MAG Hüller Hille), P. Jatzkowski (WZL), Prof. P. Plapper (FSTC, Uni Luxemburg), Prof. R. Schmitt (Fraunhofer IPT/WZL), H. Voss (Premium Aerotec)
- 11:50 Series Production of Large-Scale Parts**  
Experts: C. Gorgels (WZL), Prof. F. Klocke (Fraunhofer IPT/WZL), Dr. G. Martel (Gleason-Pfauter), Dr. W. Michel (Bosch Rexroth), Dr. A. Mundt (Liebherr-Verzahnentechnik), Dr. M. Queins (Dörries Scharmann Technologie), G. Roobaert (Hansen Transmissions), R. Thalacker (Schaeffler)

# Industrial exhibition



## Production in Europe: a showcase of industrial companies

In addition to the lecture sessions, you will have the opportunity to visit the industrial exhibition held in the Eurogress foyer. Well-known European companies will be presenting their products and services under the title "Production in Europe".

Become a sponsor, participate in the exhibition with your own stand, demonstrate your products or use our advertising media to promote your company in front of top-class experts and managers!

You will find detailed information about the industrial exhibition at:

[www.awk-aachen.de](http://www.awk-aachen.de)

Or contact us directly at the following address:

Werkzeugmaschinenlabor WZL der RWTH Aachen  
Stefan Tönissen  
Steinbachstrasse 19  
52074 Aachen  
Germany  
Phone +49 241 80-20392  
[ausstellung@awk-aachen.de](mailto:ausstellung@awk-aachen.de)

# Tour of institutes



## A close-up on top-level research: tours of the WZL and Fraunhofer IPT

During the AWK, participants will have plenty of time to visit WZL, Fraunhofer IPT and WZLforum. Our doors are open on both days for tours of the machinery halls, laboratories and testing facilities.

You will be given information on current trends and research issues in the fields of:

- Mechanical engineering and plant construction
- Tool manufacture
- Tooling technology
- Automotive engineering
- Aerospace engineering
- Energy efficiency in production technology
- Information technology
- Optics
- Micro-technology and precision technology
- Life science and biotechnology

As a particular highlight, we are offering two break-out sessions during the tour of the institutes to allow participants to learn more about the "Electromobility/eLab" project and the "RWTH Aachen Campus" that is currently under construction.

# Social activities



## See the sights: cultural highlights for partners accompanying our participants

Persons accompanying conference participants can take part in the following 2-day cultural program:

### Thursday, May 26, 2011

- Guided tour of Liège
- Lunch at a typical Belgian brasserie
- Tour of the "Val Dieu" abbey in Aubel

### Friday, May 27, 2011

- "Fountain tour" through Aachen city center
- Coffee and cake in the revolving tower "Belvedere" on top of the Lousberg, Aachen



## Get-together: an elegant dinner and exciting entertainment

The traditional reception on May 26, 2011 is another of the AWK's highlights: the staff from our institutes will entertain you with great dedication, personal effort and professionalism, beaming a different light on the topic of production technology.

# About us



## Fraunhofer IPT

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

## WZL

Since 1906, the Laboratory for Machine Tools WZL at the RWTH Aachen has been involved in research and consultancy projects of a fundamental nature and in work oriented towards the needs of industry. 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 technology and metrology.

## Participation fee

For registration

until March 31, 2011 € 920,-  
from April 1, 2011 € 990,-

The participation fee includes: lecture program, admission to the industrial exhibition, tour of the institutes, conference proceedings, shuttle buses, meals on both days and at the reception.

Fees for scientific events are not subject to VAT.

## Cultural program for participants' partners

Participation fee € 60,-

This covers: sightseeing, lunch and drinks on May 26 and 27, 2011.

## Reception for participants' partners

Participation fee € 50,-

This covers: dinner, drinks and entertainments on May 26, 2011.

## Cancellation

In the event of a cancellation before April 30, 2011, the participation fees will be reimbursed minus an administration charge of € 150. Cancellations made after May 1, 2011 are non-refundable.

## Check-in and documentation

You are welcome to check-in and pick up your conference documentation on May 25, 2011 between 5 and 10 pm in the Aachen Eurogress.

## Registration & Payment

Please register via our web page:  
[www.awk-aachen.de](http://www.awk-aachen.de)

If you prefer, you can also send us your details, either by post or by fax, using the registration form.

Once you have registered, you will receive an invoice via email. If you register through the web page, you can pay directly by credit card.

If you are registering from abroad, please use the web page and pay by credit card.

## Venue

Eurogress Aachen  
Monheimsallee 48  
52062 Aachen  
Germany  
[www.eurogress-aachen.de](http://www.eurogress-aachen.de)

## Hotel & Directions

You can make hotel reservations via our web page [www.awk-aachen.de](http://www.awk-aachen.de) or with the help of the local tourist office (please quote "AWK 2011"):

aachen tourist service e.V.  
Phone +49 241 18029-50 / -51  
Fax +49 241 18029-30  
[incoming@aachen-tourist.de](mailto:incoming@aachen-tourist.de)  
[www.aachen-tourist.de](http://www.aachen-tourist.de)

More details about directions are available at [www.awk-aachen.de](http://www.awk-aachen.de)

## Conference Language

The conference is held in German. We offer simultaneous interpretation in English throughout all lectures.