

AWK'21

INTERNET OF PRODUCTION TURNING DATA INTO VALUE

Aachen | June 10-11, 2021



The Conference

Aachen Machine Tool Colloquium 2021

Ensuring availability of data, information and knowledge at any time and in any place is one of the most important claims of the Industry 4.0. But what added value do manufacturing companies really gain from the enormous amount and variety of recorded data? Which analytical tools and algorithms offer reliable predictions and enable continuous control of a resilient production?

With the motto

Internet of Production – Turning Data into Value

the 30th Aachen Machine Tool Colloquium, which will take place on June 10-11, 2021 at the Eurogress in Aachen, will show the added value of an overall networked production on the example of proven success stories. Speakers from leading companies of different industries will talk in jointly compiled expert lectures about the aspects of digitization they will continue to pursue for the production of the future.

The highly renowned conference with the aim of reflecting the latest developments in production technology is both a network event and an information hub: in exchange with more than 1,300 participants from various disciplines and with a highly qualified program of lectures and guided tours to the host research institutions, the AWK'21 offers a globally unique insight into the trends in applied research and development for specialists and executives from industry and science who want to shape the production of tomorrow.



Prof. Dr.-Ing.
Thomas Bergs MBA



Prof. Dr.-Ing.
Christian Brecher



Prof. Dr.-Ing.
Robert Schmitt



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

Cooperation Partner



The **Fraunhofer Institute for Production Technology IPT** combines knowledge and experience from all areas of production technology. Located in Aachen, we offer customers and partners applied research and development for networked, adaptive production. We do not only understand production in its individual steps, but also consider the entirety of the processes and the interconnections among various elements of the process chain. Our range of services is oriented towards the current challenges of specific industries, technologies and product areas such as tool and die making, the optical industry, turbomachinery manufacturing, life sciences engineering and lightweight production technology.

For more than 100 years, the **Laboratory for Machine Tools and Production Engineering (WZL) at RWTH Aachen University** has been renowned for pioneering research and successful innovations in the field of production technology worldwide. Led by the four professors Thomas Bergs, Christian Brecher, Robert Schmitt and Günther Schuh, the WZL conducts research on the sustainable design of production in high-wage countries within six areas: production technology, machine tools, production systems, transmission technology, production metrology and quality management. In cooperation with industry partners from various sectors, the WZL develops solutions for a broad range of production related topics in publicly funded as well as bilateral projects.

The AWK'21

The AWK'21 is presented by the four directors of the Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University and the Fraunhofer Institute for Production Technology IPT:



**Prof. Dr.-Ing.
Thomas Bergs MBA**

Holder of the Chair of Manufacturing Process Technology at the WZL and Head of the Process Technology department at the Fraunhofer IPT



**Prof. Dr.-Ing.
Christian Brecher**

Holder of the Chair for Machine Tools at the WZL and Head of the Production Machines department at the Fraunhofer IPT



**Prof. Dr.-Ing.
Robert Schmitt**

Holder of the Chair of Production Metrology and Quality Management at the WZL and Head of the Production Quality and Metrology department at the Fraunhofer IPT



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

Holder of the Chair for Production Systems at the WZL and Head of the Technology Management department at the Fraunhofer IPT

Plenary Speakers

Our lecture program with twelve expert lectures and four keynotes is complemented by plenary lectures given by renowned leaders of globally operating companies. As the first plenary speakers, we would like to introduce to you:



Prof. Dr.-Ing. Katja Windt

Member of the Managing Board,
SMS group GmbH



Ronnie Leten

Chairman of the Board of
Directors,
Telefonaktiebolaget
L.M. Ericsson (publ)



Bazmi Rizwan Husain

Chief Technology Officer (CTO),
ABB Ltd

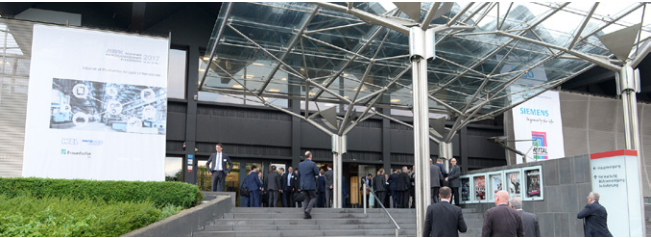


Dr.-Ing. Stefan Spindler

Member of the Executive
Board, Industrial,
Schaeffler AG

Program

Thursday, June 10, 2021



Welcome and Introduction

Plenum 1

Session 1

Architecture of a Networked Adaptive Production

- Holistic Automation – Added Value of an Integrated End-to-End Connectivity
- Value Capture – How to Successfully Implement Data-Driven Business Models in Manufacturing Companies
- Individual Manufacturing Process Chains in Tooling by Data-Driven and Model-Based Forecast Methods

Session 2

The Digital Twin in Manufacturing

- Always Beta – DevOps for Cyber-Physical Products
- Sustainability in Production
- Future Assembly with Distributed Sensor Services

**Guided Tours to the Institutes and Breakout Sessions
on RWTH Aachen Campus**

Evening Reception

Friday, June 11, 2021



Welcome

Plenum 2

Session 3

Analytics in Production

- Functional Backtracing in Process Chains – A Model- and Data-Based Approach
- Predictive Quality – Data Analytics in Manufacturing Companies
- Worldwide Lab – Guaranteed Productivity Increase through Networked Learning

Session 4

Business Models in the Internet of Production

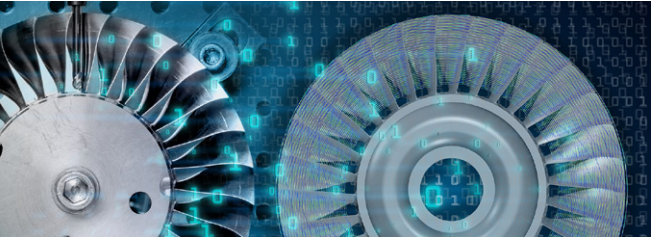
- Looking 4.0-ward: What the Internet of Production will Mean to Employability and the Future of Work
- Monetization of Production Data
- New Business Models for Machine Tools

Plenum 3

Outlook

**Guided Tours to the Institutes and
Breakout Sessions
on RWTH Aachen Campus**

The Sessions



Session 1: **Architecture of a Networked Adaptive Production**

An efficient infrastructure is the key to a networked, adaptive production. The Internet of Production provides the framework for this consistent, secure and efficient architecture, which is based on the sovereignty of the collected data. It helps us in answering the questions: What are the performance features of such an infrastructure and what does a scalable implementation look like within the production environment? Which components enable a real-time supply of information along the entire process chain? And how can these components be integrated into production without significant additional costs?

Session 2: **The Digital Twin in Manufacturing**

In manufacturing companies, context-based data models and digital value chains have been discussed for a long time. Still, there are many open questions left that will be addressed in this session by using sophisticated manufacturing examples and suitable data models for real products: What defines the additional value of the data concerning the real product? When is the cost of data preparation and storage worthwhile? Are constantly changing product life cycles manageable and economical? How can digital transformation support sustainable production?



Session 3:

Analytics in Production

Model-based data analyses contextualize live-recorded production data by merging it with specific machine models and thus enrich it with manufacturing domain knowledge. This way, a digital image of the component, machine and process is created that can be used for process-parallel quality prediction, increased productivity and intelligent data feedback. In addition, context-sensitive databases are used to analyze effects that occur across several components, thus unlocking the potential of AI methods.

Session 4:

Business Models in the Internet of Production

In the future, data-based business models will determine competition due to the converging performance of competing products. The Subscription business model, which requires reinterpretation in the context of Industry 4.0, promises a high potential for success in machinery and plant engineering. In this context, the Internet of Production is the main technological enabler, allowing efficient and trouble-free operation with correct accounting. Both the platform-driven data economy and future working methods represent interface topics for shaping value creation.

Attendance

Venue

Eurogress Aachen
Monheimsallee 48
52062 Aachen
Germany

Participation fee

Per person € 1,350

Tickets that have already been purchased for AWK'20 remain valid.

The conference fee includes the participation and the lecture program, the industrial exhibition, visits to the institutes, conference documents, bus transfer, catering on both days and the participation in the evening event (including VAT).

Please note that the conference participation can only be booked including the evening event.

The participation fee for accompanying persons for the evening event on June 10, 2021 is € 85 (including VAT).

Registration

Please register on our website www.awk-aachen.de.
Alternatively, you can register by filling out the attached application form and send it to us via post or fax.

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Registration Form

I hereby register for the AWK'21 for the participation fee of € 1,350,-

Preferred lecture session on June 10, 2021*

- ☐ Architecture of a Networked Adaptive Production
- ☐ The Digital Twin in Manufacturing

Preferred lecture session on June 11, 2021*

- ☐ Analytics in Production
- ☐ Business Models in the Internet of Production

For accompanying partner

- ☐ Evening Reception on June 10, 2021 € 85,-

Last Name*

First Name*

Title

Company/Institute*

Street/ Post office box*

Zip code/Town*

Phone*

E-mail*

Accompanied by

*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

Signature*

Date*

AWK'21

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