



Fraunhofer
IWU

FRAUNHOFER INSTITUTE FOR
MACHINE TOOLS AND
FORMING TECHNOLOGY IWU

Chemnitz, November 10–11, 2015

5TH ICAFT 2015 / 22ND SFU 2015
**EFFICIENCY IN FORMING
TECHNOLOGY BY INTEGRATED
APPROACH TO PROCESS CHAINS**



Program

ICAFT 2015
International Conference on
Accuracy in Forming Technology





The German industry is moving towards new ways of production: driven by increasing individualization of products and by the possibilities created by digital networking, the challenge arises to generate efficient and flexible process chains that can be adapted dynamically. This challenge requires more than ever not to investigate individual technologies and process steps separately from one another, but to consider the complete value added chain as an entity.

We cordially invite you to Chemnitz to participate in the 5th International Conference on Accuracy in Forming Technology ICAFT 2015, which focuses on the topic "Efficiency in Forming Technology by Integrated Approach to Process Chains".

As usual the conference is taking place in connection with the Saxon Conference on Forming Technology SFU, and it is supported by the International Academy for Production Engineering CIRP. From November 10 to 11, 2015, top-level speakers from science and industry present their latest developments and approaches, contributing to achieve competitive value-added chains in the field of forming technology.

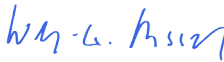
In addition to interesting lectures, the highlights of the event include presentations during "Forming Live" in the testing facilities of Fraunhofer IWU.

Take this conference as an opportunity to receive new impulses, to exchange your ideas with other experts and to establish valuable contacts.

We are looking forward to personally welcoming you to Chemnitz in November.



Prof. D. Landgrebe



Prof. W.-G. Drossel



Prof. M. Putz

Board of directors

Fraunhofer Institute for Machine Tools and Forming Technology IWU

PROGRAM

TUESDAY, NOVEMBER 10, 2015

8.00 am Registration

PLENARY SESSION

EFFICIENCY IN FORMING TECHNOLOGY

- 9.00 am **Welcome and Introduction**
Landgrebe, D., Executive Director of Fraunhofer IWU,
Germany
- 9.10 am **Welcome Address**
Geiger, J., Head of Department Research and Tech-
nology of the Saxon State Ministry for Science and
the Arts SMWK, Germany
- 9.20 am **Welcome Address**
Ludwig, B., Mayor of City Chemnitz, Germany
- 9.30 am **Welcome Address**
van Zyl, A., Rector of Technische Universität Chemnitz,
Germany
- 9.40 am **Drivers and Challenges on the Path Towards
Industry 4.0**
Neugebauer, R., President of Fraunhofer-Gesellschaft,
Germany
- 10.05 am Coffee Break



PLENARY SESSION (CONT.)

EFFICIENCY IN FORMING TECHNOLOGY

- 10.35 am **AUDI Tool Shop – Taking the Next Step Into the Digital Dimension**
Spindler, J., AUDI AG, Germany
- 11.00 am **TR Forging of Crank Shafts**
Bömcke, A., Schmiedag GmbH, Germany
- 11.25 am **Lightweighting in Automotive Industry Using Sheet Metal Forming – Advances and Challenges**
Altan, T., The Ohio State University, USA
- 11.50 am **Towards Efficient, Interconnected and Flexible Value Chains – Innovations from Research Production Technologies**
Landgrebe, D., Fraunhofer IWU, Germany
- 12.15 pm Lunch

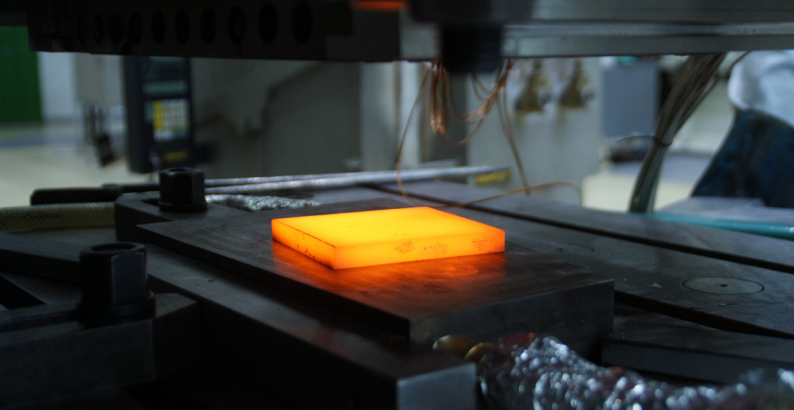
PROGRAM

TUESDAY, NOVEMBER 10, 2015

SESSION A1

SHEET METAL FORMING I

- 1.15 pm **Keynote**
Renaissance of Hydroforming – Solutions for Current Challenges in Lightweight Construction, Exhaust Systems and Chassis, Suitable not only for Vehicle Construction
Freytag, P., Salzgitter Hydroforming GmbH & Co. KG, Germany
- 1.40 pm **Highly Flexible Forming Technologies – Approach for Rising Diversity of Variants**
Weise, D., Fraunhofer IWU, Germany
- 2.05 pm **Integration of Press Hardening with Cold Trimming**
Kaftanoglu, B., Atilim University, Turkey
- 2.30 pm **Tooling Flexibility = Flexibility in Forming Technology?!**
Kräusel, V., Technische Universität Chemnitz, Germany
- 2.55 pm Coffee Break



SESSION B 1

BULK METAL FORMING I

- 1.15 pm **Keynote**
Potentials of Aluminum Alloy UHC Steel for Components Manufactured by Bulk Metal Forming
Behrens, B.-A., Leibniz Universität Hannover, Germany
- 1.40 pm **Innovation, Research and Technology**
Development from the Point of View of Engine Manufacturer Rolls-Royce
Tammineni, S. V., Rolls-Royce Plc., Great Britain
Popp, M., Fraunhofer IWU, Germany
- 2.05 pm **Ressource Efficiency in Bulk Metal Forming – Selected Strategies**
Muckelbauer, M., CDP Bharat Forge GmbH, Germany
- 2.30 pm **Development of Hybrid Material Composites for Marine Diesel Engine Components with High Thermal Loads**
Jentsch, E., Technische Universität Bergakademie Freiberg, Germany,
Wagner, A., Fraunhofer IWU, Germany
- 2.55 pm Coffee Break

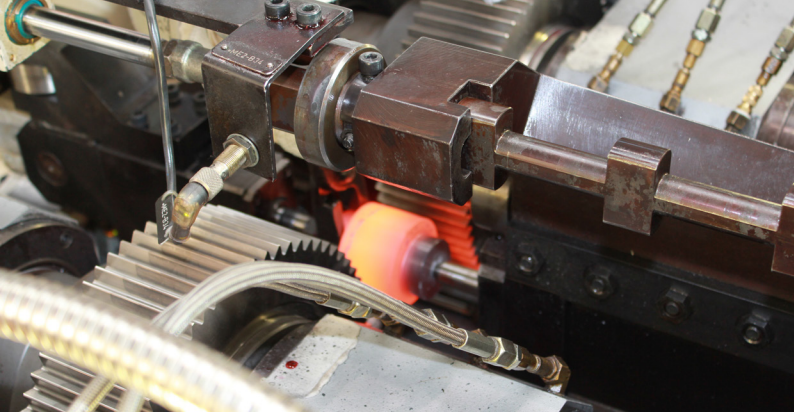
PROGRAM

TUESDAY, NOVEMBER 10, 2015

SESSION A2

SHEET METAL FORMING II

- 3.25 pm **Keynote**
A New Approach for the Visioplastic Stress Analysis for Material Characterization
Brosius, A., Technische Universität Dresden, Germany
- 3.50 pm **Precision Cutting: Opportunities and Cost Advantages**
Stahl, K., Gräbener Presssysteme GmbH & Co. KG, Germany
- 4.15 pm **Conduction Heating in Form Hardening Opens Up Numerous New Opportunities**
Behrens, B.-A., Leibniz Universität Hannover, Germany
- 4.40 pm **Forming of New Generation AHSS Using Servo Presses**
Kaftanoglu, B., Atilim University, Turkey



SESSION B2

BULK METAL FORMING II

- 3.25 pm **Keynote**
Sustainability at Hirschvogel
Maurer, O., Hirschvogel Umformtechnik GmbH,
Germany
- 3.50 pm **GBQ Microfinish of Forged Engine Components**
Witt, T., Neuteq-Europe Limited, Great Britain
- 4.15 pm **Rolling – A Versatile Process of Massive Forming**
Erleben, S., LASCO Umformtechnik GmbH, Germany
- 4.40 pm **Innovative Manufacturing Route for Realizing
Alternative Drive Concepts**
Popp, M., Fraunhofer IWU, Germany

FORMING LIVE

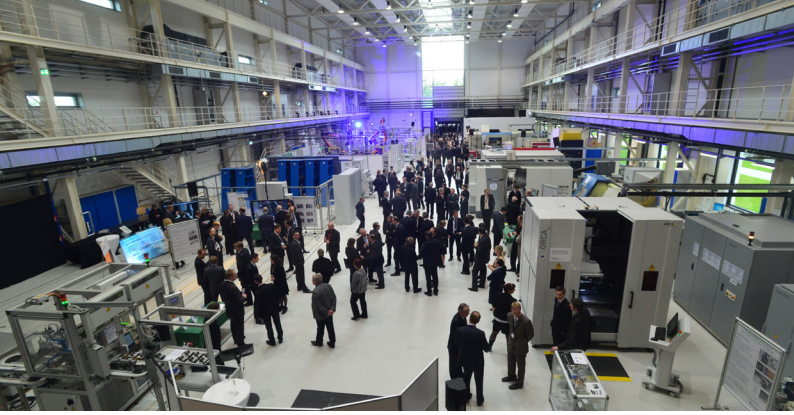
TUESDAY, NOVEMBER 10, 2015

5.10 pm **Forming Live**

Presentations on the E³ Production Campus of Fraunhofer IWU

- Model Process Chain Sheet Metal Forming
- Flexible Sheet Production (Blanking, Bending, Joining)
- Tempered Incremental Forming
- High-Speed Joining of Hot Stamping Steel
- Forming Gear Production
- Efficient Process Chains for the Production of Powertrain Components
- Innovative Machine Solutions for Quality Improvement of Cross Rolling
- Modular Servo Press Concept

6.00 pm Transfer to the hotels



7.30 pm **Networking Dinner (Entrance from 7.00 pm)**
in the Large Foyer of Stadthalle Chemnitz

Please be invited to join the speakers and participants for the Networking Dinner for good conversations, discussions and to make some valuable contacts.

Additionally you will experience the following highlights:

- The awarding of the “Saxon Prize for Forming Technology”
- Postersession “Efficiency in Forming Technology”
- Networking Dinner
- Social Program

PROGRAM

WEDNESDAY, NOVEMBER 11, 2015

SESSION A3

SHEET METAL FORMING III

- 9.00 am **Keynote**
Manufacturing of Innovative Aluminum Components by Combining Tailor Heat Treated Blank Technique and Shear Cutting Operation
Merklein, M., Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
- 9.25 am **Flexible Manufacturing Concepts for Resource Efficient Use of Tools and Production Equipment**
Fischer, T., Tower Automotive Holding GmbH, Germany
- 9.50 am **Efficient Production of Press-Hardened Components Due to Optimization of Geometry and Integrated Process Monitoring**
Skrikerud, M., Koroschetz, C., AP&T AB, Sweden
- 10.15 am Coffee Break



SESSION C1

JOINING I

- 9.00 am **Keynote**
**The Door Sidecrash Beam in the New BMW i8:
Application of a Press Hardened 7XXX Aluminum
Alloy Panel**
Reinstettel, M., BMW AG, Germany
- 9.25 am **Virtual Joining Factory – Integration of Micro-
structure Evolution in the Manufacturing
Process Chain Simulation**
Beyer, U., simufact engineering GmbH, Germany
- 9.50 am **Investigation of the Flange Length Behavior
in Hemming Processes Through Numerical
Simulations**
Umasankar, R., Mercedes Benz Research and
Development India Private Limited/Daimler AG, India
- 10.15 am Coffee Break

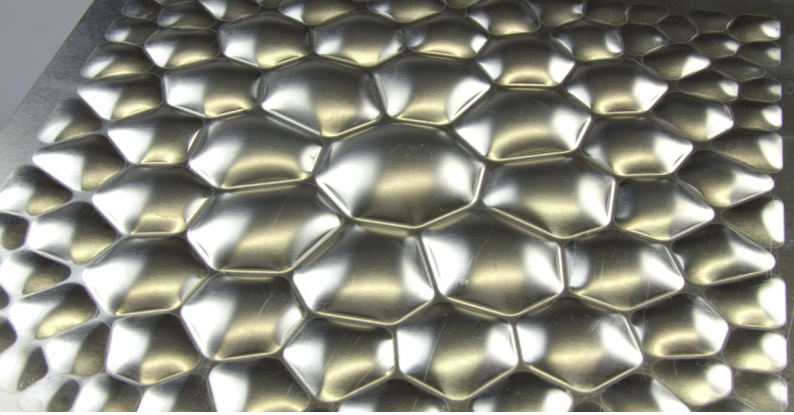
PROGRAM

WEDNESDAY, NOVEMBER 11, 2015

SESSION D

SEMI-FINISHED PRODUCTS

- 10.45 am **Keynote**
Magnesium – An Old Lightweight Material with New Property Profile
Kawalla, R., Technische Universität Bergakademie Freiberg, Germany
- 11.10 am **Holistic Evaluation of Process Chains for Resource Efficient Manufacturing of Hybrid Structures**
Symmank, C., Technische Universität Chemnitz, Germany
- 11.35 am **Resource and Material Efficient Forming by Hexagonal 3D-Structuring for Lightweight and Crash Relevant Applications**
Mirtsch, F., Dr. Mirtsch Wölbstrukturierung GmbH, Germany
- 12.00 pm **Novel Process Chains for Products of Ultra-High Strength Steels**
Mašek, B., University of West Bohemia in Pilsen, Czech Republic
- 12.25 pm Lunch



SESSION C2

JOINING II

- 10.45 am **Keynote**
Process Chain Simulation at AUDI Tool Shop
Poelmeyer, J., AUDI AG, Germany
- 11.10 am **Methods for Efficient Development of Hemming Machines: From Process Simulation to Ramp-Up**
Hecht, B., Volkswagen AG, Germany
- 11.35 am **Numerical Representation of a Complete Body Construction Process Chain, Focusing on New Approaches for Integrating the Drying Process**
Ackert, P., Fraunhofer IWU, Germany
- 12.00 pm **Understanding Whole Shape Variability of Stamped Sheet Metal Parts for Root Cause Analysis**
Gerbino, S., University of Molise, Italy
- 12.25 pm Lunch

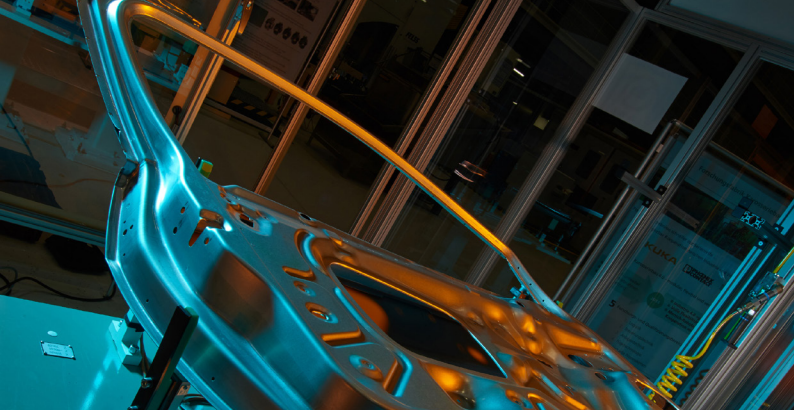
PROGRAM

WEDNESDAY, NOVEMBER 11, 2015

SESSION E

TOOLS

- 1.25 pm **Keynote**
Business Success by Efficient Use of Forming Technology in Design, Production and Assembly
Löffler, K., TRUMPF Laser- und Systemtechnik GmbH, Germany
- 1.50 pm **New AWEBA Tool Technology for Economic Processing of Magnesium Directly from the Coil – Ready for Serial Production**
Aurich, T., AWEBA Werkzeugbau GmbH Aue, Germany
- 2.15 pm **TEBIS – Process Solutions for Reducing Machine Downtime and Tryout Effort**
Galozy, S., TEBIS – Technische Informationssysteme AG, Germany
- 2.40 pm **Comprehensive Digital Process Planning with AutoForm – The Virtual Process Chain in the Tool Shop**
Schönbach, T., AutoForm Engineering Deutschland GmbH, Germany
- 3.05 pm Coffee Break



SESSION F

MACHINE TOOLS

- 1.25 pm **Keynote**
Industry 4.0 in the Construction of Automatic Punching Presses and Forming Presses
Kaiser, S., ANDRITZ Kaiser GmbH, Germany
- 1.50 pm **Sustainable Success by Short Process Chains**
Wunderlich, J., Profiroll Technologies GmbH, Germany
- 2.15 pm **From First Draft to Serial Production: Hot Stamping Part Design and Feasibility Study with Respect to Functionality and Optimization of Production Costs**
Aspacher, J., Schuler Pressen GmbH, Germany
- 2.40 pm **Resource-Efficient Press Technology**
Blau, P., Fraunhofer IWU, Germany
- 3.05 pm Coffee Break

PROGRAM

WEDNESDAY, NOVEMBER 11, 2015

PLENARY SESSION 2

INDUSTRY 4.0, MACHINE, CONTROL

- 3.35 pm **Keynote**
Forming the Future with Industry 4.0
Kübert, T., Bosch Rexroth AG, Germany
- 4.00 pm **Stamping Plant 4.0 – Data Mining for the Investigation and Prediction of Quality Issues in Manufacturing Car Body Parts**
Purr, S., BMW Plant Regensburg, Germany
- 4.25 pm **Virtual Commissioning, Presented at an Example of a Ring Rolling Plant**
Gober, N., SMS Meer GmbH, Germany
- 4.50 pm **Forming for Resource-Efficient Industry 4.0**
Marré, M., FELSS Systems GmbH, Germany
- 5.15 pm **Closing Remarks**
Landgrebe, D., Fraunhofer IWU, Germany

WELCOME RECEPTION AND INDUSTRIAL EXHIBITION

Welcome Reception

On the eve of the conference, on November 9, 2015, we cordially invite you for a Welcome Reception at the Panorama Restaurant in the premises of the Mercure Congress Hotel. The participation fee amounts 10 Euro.

Industrial Exhibition

Take advantage of the opportunity to present your company and its products. The conference accompanying industrial exhibition will take place at the event location Virtual Reality Technikum of Fraunhofer IWU. This exposed event hall, which is directly linked to the venue, offers all participants excellent access to this exhibition.

More information about the industrial exhibition are available on our website www.iwu.fraunhofer.de/en/ICAFT2015. Please register until the latest October 28, 2015.

GENERAL INFORMATION

Registration and Participation Fee

The participation fee amounts 680 Euro and includes the conference attendance, catering, conference proceedings as well as the networking dinner on November 10, 2015. If you register until September 18, 2015 you will get the early bird rate of 590 Euro.

Please register online on www.iwu.fraunhofer.de/en/ICAFT2015 or by the fax form, which also can be found online, until **October 28, 2015**. Your registration will be confirmed by e-mail.

Payment Terms

The participation fee can be paid by bank transfer or by credit card. If registered at the conference office, the total amount must be paid on-site (by cash or credit card). Cancellations received until October 28, 2015 will get the participation fee refunded minus 100 Euro processing costs. After October 28, 2015 there is no pay back possible. The full participation fee needs to be paid. The conference materials will be mailed. The change of participant is free of charge.

Chairman

Prof. Dr.-Ing. Dirk Landgrebe
Executive Director
Fraunhofer Institute for Machine Tools
and Forming Technology IWU

Conference Location

Fraunhofer Institute for Machine Tools
and Forming Technology IWU
Reichenhainer Strasse 88
09126 Chemnitz, Germany

Contact

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Conference Languages

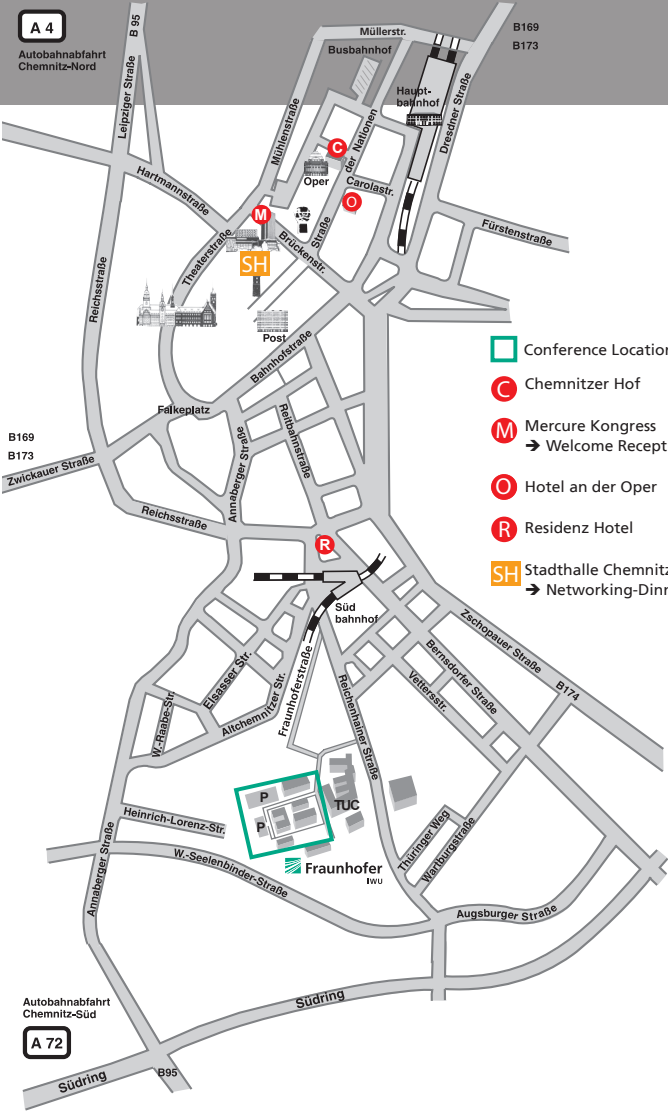
Conference languages are German and English (simultaneous translation).

CITY MAP

A 4

Autobahnabfahrt Chemnitz-Nord

B169
B173



- Conference Location
- C Chemnitzer Hof
- M Mercure Kongress
→ Welcome Reception
- O Hotel an der Oper
- R Residenz Hotel
- SH Stadthalle Chemnitz
→ Networking-Dinner

Autobahnabfahrt Chemnitz-Süd

A 72

B95

HOTELS

Accommodation

Please make your reservation directly with the hotels by using the code "SFU 2015".

Chemnitzer Hof****

Single Room: 66,00 Euro

Phone: +49 371 6840

www.guennewig.de/chchemni

Hotel an der Oper****

Single Room: 65,00 Euro

Phone: +49 371 6810

www.hoteloper-chemnitz.de

Mercure Kongress***

Single Room: 63,00 Euro

Phone: +49 371 6830

www.mercure-hotel-chemnitz.de

Residenz Hotel****

Single Room: 58,00 Euro

Phone: +49 371 35510

www.residenz-hotel-chemnitz.de

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