



ForTech Bulk 2022

Forming Technology Network of Bulk Metal Forming



Forming Technology Network of Bulk Metal Forming

ForTech *Bulk* 2022

May 18th – May 19th, 2022 in Stuttgart, Germany

Organized by the Institute for Metal Forming Technology, University of Stuttgart

Homepage: www.ifu.uni-stuttgart.de/en/fortech/

Conference Programme



University of Stuttgart
Germany



A background graphic consisting of a complex network of interconnected nodes and lines. The nodes are represented by small circles, some of which are solid black and others are light gray. The lines connecting them are thin and black, creating a dense web of connections. The overall style is clean and modern, typical of a corporate or technology-themed presentation.

Networking on a new level.

A complex network diagram with black and grey nodes connected by lines, serving as a background for the top half of the page.

CONTENT

Welcome Message

4

Program Schedule

5

Contact Information

10



ForTech
Bulk 2022

Forming Technology Network of Bulk Metal Forming

Welcome Message

Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA

Head of Institute
Institute for Metal Forming Technology
University of Stuttgart

Chair of the ForTech Bulk 2022



Dear Colleagues, Dear Members of the Bulk Metal Forming Community, Dear Friends,

I feel deeply honored to invite you to join the International hybrid conference “Forming Technology Network Bulk - ForTech Bulk 2022” being organized on May 18th -19th 2022 in Stuttgart, Germany. The venue is succeeding the very well-known International Conference “NEW DEVELOPMENTS IN FORGING TECHNOLOGY”, which in the past was held in a two years period in Fellbach near Stuttgart/ Germany since 1978. The focus of the new ForTech Bulk 2022 conference will be put on personal networking, meeting, discussing and presenting hot topics of today around forgings: Digitization, sustainability and new manufacturing concepts in forging technology. So, we hope that this refreshed series of venues in forging technology will follow the great success of our former conference sequence!

What changed in cold and warm bulk forging during recent years? Sustainability, circular economy, importance of CO₂ emission and digitization in the forging community meanwhile gain similar importance as newest developments in technology regarding materials, newest routes in forging processes, tool and die design etc. For that reason, the new concept of ForTech Bulk 2022 Conference aims on efficient networking and exchange of knowledge between speakers, guests, researchers and shop floor technicians. In May our event will take place on the new research campus ARENA2036 of the University of Stuttgart.

The conference promises to be an exciting experience in the mentioned fields and will provide an excellent opportunity to get in touch with bulk metal forming experts from around the world. You are also invited to visit the metal forming lab of the hosting Institute for Metal Forming Technology (IFU) on the evening between both conference days. So, we look forward to welcoming you in person at our conference in Stuttgart in May 2022.

Sincerely

Mathias Liewald

Program Schedule

May 18th - May 19th, 2022



**ForTech
Bulk 2022**
Forming Technology Network of Bulk Metal Forming

First Conference Day

CET

May 18th, 2022

11:00 - 12:50

Welcome to the ARENA2036

–
Check-in at COVID-test center

12:50 - 13:00

Opening of Conference

by Univ.-Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA,
*Institute for Metal Forming Technology (IFU),
University of Stuttgart*

Session: Strategic Opening Lectures

13:00 - 13:30

“Quo vadis Bulk Metal Forming?”

by Hon.-Prof. Dr.-Ing. Ekkehard Körner

13:30 - 14:00

“German forging industry – economic situation and outlook”

by Dipl.-Kfm. Holger Ade,
Industrieverband Massivumformung e. V.

14:00 - 14:30

“European CO₂-Reduction Strategies for Passenger and Light-Duty Vehicles”

by Univ.-Prof. Dr.-Ing. Michael Bargende,
*Institute of Automotive Engineering (IFS),
University of Stuttgart*

14:30 - 15:00

Coffee break | Exhibition

Session: Approaches in Digitization of Forging Processes

15:00 - 15:25 **“Improve OEE with good technical data – targeted and provable”**

by Dr.-Ing. Jörg Stahlmann,
ConSenses GmbH

15:25 – 15:50 **“Increasing performance through IoT and AI-based plug & play solutions in metal forming”**

by Valentin Kaltenbach,
Kaltenbach.Solutions GmbH

15:50 - 16:15 **“Concept of a digitized start-up phase of a two-stage cold extrusion process”**

by Univ.-Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA,
Jonathan Böhm,
*Institute for Metal Forming Technology (IFU),
University of Stuttgart*

16:15 - 16:40 **“Machine Learning for Production Processes: Bringing the Technology into Production”**

by Univ.-Prof. Dr. Thomas Bäck,
divis intelligent solutions GmbH

16:40 – 17:05 **“Integration of optical sensors into load-bearing structures: opportunities and challenges”**

by Nassr Al-Baradoni,
*Institute for Production Engineering and Forming Machines,
Technical University of Darmstadt*

17:05 - 17:10 **Conclusion**

by Univ.-Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA,
Institute for Metal Forming Technology (IFU)

17:10 - 18:00 **Transfer to IFU**

approx. 18:00 **Informal Get Together**
at the Institute for Metal Forming Technology (IFU),
Holzgartenstraße 17,
70174 Stuttgart

Second Conference Day

CET

May 19th, 2022

7:00 - 9:00

Welcome to the ARENA2036

–
Check-in at COVID-test center

9:00 - 9:05

Opening/Welcome

by Univ.-Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA,
*Institute for Metal Forming Technology (IFU),
University of Stuttgart*

Session: Forging Processes and Sustainability

9:05 - 9:30

“Forgings move the World – what moves the Forging World?”

by Dr.-Ing. Hans-Willi Raedt,
prosimalys GmbH

9:30 - 9:55

“Innovative heat treatment utilising heat from hot forming.”

by Dr.-Ing. Matthias Schneider,
Musashi Bockenau GmbH Und Co. KG

9:55 - 10:20

“Prediction of microstructure evolution in hot forging and heat treatment using a mean-field material model”

by Lukas Kertsch,
Fraunhofer Institute for Mechanics of Materials (IWM)

10:20 - 10:45

Coffee break | Exhibition

10:45 - 11:10

“Ironing of Splines with superposition of tensile and compressive stress”

by Dr.-Ing. Nadezda Missal,
Felss Systems GmbH

11:10 - 11:35

“Advanced and intelligent forging tool design for increased sustainability in semi-warm and warm bulk forging processes”

by Isaac Valls,
Rovalma S.A.

11:35 - 12:00	“Industrial Wireless Tracking Tools of Cold Forging Dies for Industry 4.0 Systems: RFID & QR Code Applications” by Fatih Kocatürk, <i>Norm Civata San. ve Tic. A.Ş.</i>
12:00 - 12:25	“Forging goes Digital with Schuler” by Hartmut Kussmaul, <i>Schuler Group</i>
12:25 - 13:15	Lunch break Exhibition
13:15 - 13:40	Guided tour through the ARENA2036 by Dr. Clemens Ackermann, ARENA2036 e.V.
13:40 - 14:05	-will follow soon - by Sebastian Frank, <i>LASCO Umformtechnik GmbH</i>
14:05 - 14:30	-will follow soon - by Klaus Schreiner, <i>Hatebur GmbH</i>
14:30 - 14:55	“Virtual Forging Process Design” by Dr.-Ing. Michael Muckelbauer, Guris Europe GmbH
14:55 - 15:20	“Forging simulation is a building brick of Industry 4.0” by Dr.-Ing. Hans-Willi Raedt, <i>prosimalys GmbH</i>
15:20 - 15:40	Coffee break Exhibition

Session: Young Researcher Contributions

15:40 - 16:00 **“Representative Volume forecast of forged components needed in Volkswagen Group until 2030”**

by Nicolas Rose,
Univ.-Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA
*Institute for Metal Forming Technology (IFU),
University of Stuttgart*

16:00 - 16:20 **“Application of Reinforcement Learning for the optimized design of open-die forging processes”**

by Niklas Reinisch,
*Institute of Metal Forming (IBF),
RWTH Aachen*

16:20 - 16:40 **-will follow soon -**

by Tim Lehnert,
*Fraunhofer Institute for Machine Tools & Forming Technology,
University of Chemnitz*

16:40 - 17:00 **“Beneficial application of preforming in order to manufacture spur and face gears by means of cold forging”**

by André Weiß,
*Institute for Metal Forming Technology (IFU),
University of Stuttgart*

17:00 **Conference Closing**

by Univ.-Prof. Dr.-Ing. Dr. h. c. Mathias Liewald MBA,
*Institute for Metal Forming Technology (IFU),
University of Stuttgart*

Contact Information

Organizer

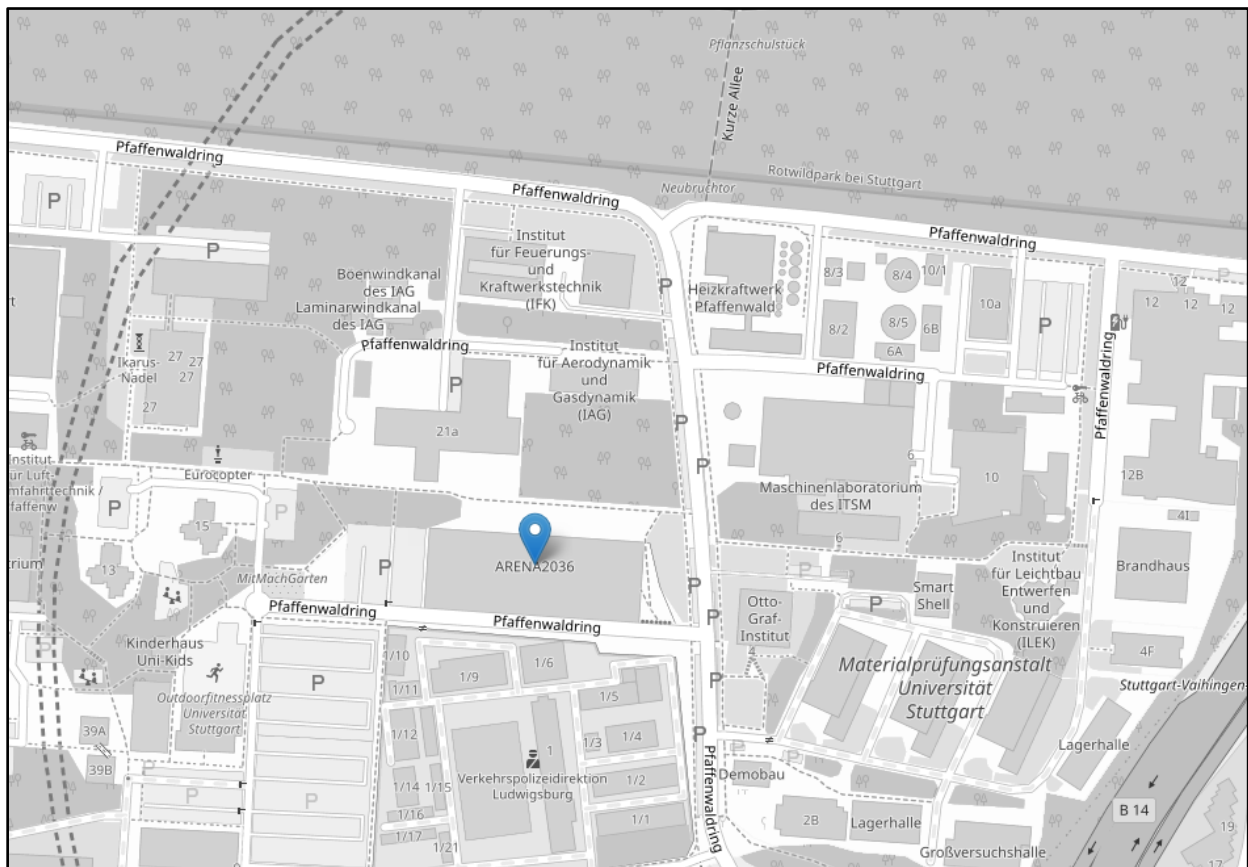
Institute for Metal Forming Technology (IFU),
University of Stuttgart
Holzgartenstraße 17
70174 Stuttgart, Germany



Conference site

ARENA2036 e.V.
Pfaffenwaldring 19
70569 Stuttgart, Germany
ARENA2036

Directions





**The
Forming Technology Network
of Bulk Metal Forming 2022**

ForTech Bulk 2022



Universität Stuttgart