

# **New Developments in Sheet Metal Forming**

# **New Developments in Hydroforming**

**2020**

Published by  
Mathias Liewald



INSTITUTE FOR METAL FORMING TECHNOLOGY  
OF THE UNIVERSITY OF STUTT GART



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## IMPRINT

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Conference Proceedings of selected papers prepared for the  
**International Conference on “New Developments in Sheet Metal Forming”**  
intended to be held in Fellbach, Germany, on **May 12th-13th, 2020**.  
Due to regulations directed by local authorities to avoid further spread of the COVID-19  
virus, the organisers of the venue were not allowed to hold this conference in 2020.

All contributions included in this conference proceedings are published as written by  
indicated authors. Contents and orthography of contribution do belong into scope of  
responsibility of respective author or authors.

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## Preface

The International Conference “New Developments in Sheet Metal Forming” in Stuttgart / Germany is organized every second year alternating with the International Conference “New Developments in Forging Technology”. Main goal of both conferences is to join engineers and specialists in metal forming technologies from industry and scientists from universities on a common communication platform. Debates and discussions revealing diverging opinions and perspectives on newest trends in metal forming technology, analyses of current state of the art as well as targets to be reached in research and development in the field of sheet metal forming technologies are highly appreciated during both days of this year’s conference.

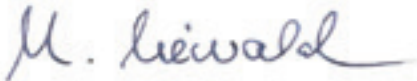
The Institute for Metal Forming Technology (IFU / Stuttgart / Germany) annually organizes this venue in collaboration with Forschungsgesellschaft Umformtechnik mbH (FGU / Stuttgart / Germany). For many years, the concept of conference has focused on an effective transfer of scientific results into value added chains of producing companies, which are quite active in forging and such dedicated market segments. The presented topics of selected papers of the conference therefore have to be evaluated in the context of current research activities in sheet metal forming, hot forming, and tool design in Europe, the United States, and Asia. Finally, contributions during the conference also intend to present strategic issues of more general topics in production of sheet metal components to external specialists and to figure out the recent state of the art on an international level.

Within the scope of this two-day conference, experts from both universities and industrial companies will present their papers. The topics presented include running investigations and projects being launched in several European and Asian sheet metal forming companies, suppliers of semi-finished products, press machine manufacturers and software vendors addressing their newest achievements. Thus, participants i.e. readers of proceedings respectively, can expect an adequate mix of practical-oriented and theoretical contributions and papers. Stimulated by several contributions supplied by partners of the hosting institute, this year special attention is paid to present and to publish modern practical solutions in sheet metal forming linked with new approaches to integrate sensors into forming equipment such as forming tools or presses in order to control process development during series production. Therefore, one session of the conference is dedicated to the topic “Digitalization in / of Production”.

Hopefully collection of released papers may meet the expectations of our regular guests and conference attendees to take as much as possible into their own day-to-day work. Unfortunately in 2020 it was not allowed to arrange international conferences because of further spread of the virus COVID-19 during spring and summer months, hopefully we will meet again in 2022.

I would like to thank all authors for contributing and feeling inspired to publish this proceedings at least electronically! I am sure that this collection of papers potentially being presented on May 12th-13th, 2020 in the Schwabenlandhalle in Fellbach / Germany will be dispatched widely and will be available to all international experts involved.

Sincerely yours,

A handwritten signature in blue ink that reads "M. Liewald". The signature is fluid and cursive, with a long horizontal stroke at the end.

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

# Table of Contents

Preface V  
*Prof. Dr.-Ing. Dr. h. c. M. Liewald MBA*



## International Conference “New Developments in Sheet Metal Forming”

### 1. Strategic Opening Lectures

Smart Press Shop GmbH & Co. KG – efficient, innovative and flexible 1  
*U. Kreth, H. Rothe – Schuler Group*

Mobility of the Future: Sustainable, safe, exciting 15  
*Dr.-Ing. S. Hartung – Robert Bosch GmbH*

### 2. Sourcing in Asia

Press Dies – Sourcing in Asia 25  
*A. Lipp – Austermann Process Management Partners*

Successfully Sourcing Tools in China 33  
*Dr.-Ing. V. Steininger – Chinese European Tooling Competence AG*

The Strategic Sourcing and Future Development Trends of Dies 41  
for Car Body Manufacturing in China  
*S. You, X. Yang, X. Yuan, N. Hong – Chongqing Ping Wei Auto Science  
and Technology Co., Ltd.;*  
*Dr. Zhang – Chongqing Jiepin Technology Co., Ltd.*

### 3. Springback and Press Part Tolerance Management

The Digital Stamping Process – Bridging the Gap from Component to Car Body 61  
*R. Schmidt – AutoForm Engineering GmbH*

DoE-based Tolerance Analysis for Sheet Metal Parts 71  
considering Manufacturing Processes  
*H. Zheng, Dr.-Ing. F. Litwa – Mercedes-Benz AG*

Using FE Process Chain Simulations to improve the Dimensional Accuracy 83  
of Car Body Assemblies made of Sheet Metal Components  
*F. Schuler – voestalpine AG;*  
*Prof. Dr.-Ing. M. Liewald MBA – IFU Universität Stuttgart*

#### **4. Digitalization in/of Production**

Process Monitoring and Real Time Algorithmic for Hot Stamping Lines <i>C. Palm, Dr. R. Vollmer, J. Aspacher – Schuler Pressen GmbH</i>	93
Data-Driven Tool Wear Classification with a Convolutional Neural Network in Punching Machines <i>S. Nießner – TRUMPF GmbH + Co. KG; Prof. Dr.-Ing. M. Liewald MBA – IFU Universität Stuttgart</i>	101
Digitalization – and then? <i>T. Schäuble – TRUMPF Werkzeugmaschinen GmbH + Co. KG; A. Schenek – IFU Universität Stuttgart</i>	109
Digital Methods for the Development and Maintenance of Forging Machines <i>N. Trier, S. Neubauer – LASCO Umformtechnik GmbH</i>	117

#### **5. Future Workplace in Production**

Development of a Human-centered Industry 4.0 Philosophy – The Future of Production Work <i>M. Kandler, Prof. Dr.-Ing. G. Lanza, C. Krahe – wbk Karlsruher Institut für Technologie</i>	123
--	-----

#### **6. Material and Material Modelling**

On the Numerical Prediction of Properties in the Process Simulation of High Strength Materials <i>M. Merten, Dr.-Ing. T. Klöppel, Prof. Dr.-Ing. A. Haufe – DYNAmore GmbH</i>	135
Challenges in the simulative Consideration of the Aluminium Hardening induced by the KTL Furnace <i>Dr. D. Koch, Prof. Dr. A. Haufe – DYNAmore GmbH – Material Competence Center; Dr. C. Wilking, C. Liebold – DYNAmore GmbH; Dr. M. Feucht, Dr. S. Roller – Mercedes-Benz AG</i>	141

#### **7. Young Researchers Elevator Pitches**

Increase of Cutting Surface Quality by geometrical Modification of the Punch Nose Radius <i>S. Senn, Prof. Dr.-Ing. M. Liewald MBA – IFU Universität Stuttgart</i>	151
Process Design for the Forming of Hat Shaped Sheet Metal Parts with Alternating Blank Draw-in <i>R. Radonjic, Prof. Dr.-Ing. M. Liewald MBA – IFU Universität Stuttgart</i>	163
Digital Process Planning for the Production of Sheet Metal Components as Prototypes and small Series with Stretch Forming and incremental Sheet Metal Forming <i>R. Schmitz, Dr.-Ing. D. Bailly, Prof. Dr.-Ing. G. Hirt – IBF RWTH Aachen University</i>	173



## 8. Modern Simulation Software, Press Technology and Innovative Manufacturing Processes

MN Coil Servicecenter GmbH – Innovative HSC Manufacturing Process Reduces Edge Crack Sensitivity of Blanks and Enables New Sheet Metal Component Spectra	181
Men at Work GmbH – User report Fütterer Werkzeugbau GmbH – Volume Simulation for Sheet Metal Forming – „Total Control“	189
synchropress GmbH – synchropress®: the next Level	195



## International Conference “New Developments in Hydroforming”

### 1. Opening Lectures Hydroforming

CAE-based Optimization of Tube Hydroforming Processes – Balancing Quality and Cost Criteria	205
<i>G. Moncelsi, L. Krauss – AutoForm Engineering GmbH</i>	

### 2. New Processes in Hydroforming

Some Ideas for the further Development of Hydroforming Process Chains	213
<i>Prof. Dr.-Ing. W. Homberg – LUF Paderborn</i>	
Geometry Calibration of Ultra High Strength Steel Parts at Room Temperature using High pulsed Power Processes	221
<i>Dr. G. Avriilaud – BMAX; G. Brund – ArcelorMittal</i>	

### 3. Hot Forming of Tubes

Development of a new Tool for Tube Hydroforming using Induction Heating	233
<i>D. Wohlfarth, Prof. Dr.-Ing. M. Liewald MBA – IFU Universität Stuttgart</i>	

### 4. Hydroforming Machines, Process Management and Equipment

Integrated Process and Equipment of Double-sided Pressure Hydroforming for Large-sized Al-alloy Shells	241
<i>Prof. PhD W. Liu, Prof. PhD S. Yuan – Harbin Institute of Technology</i>	



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## Software Solutions for Sheet Metal Forming

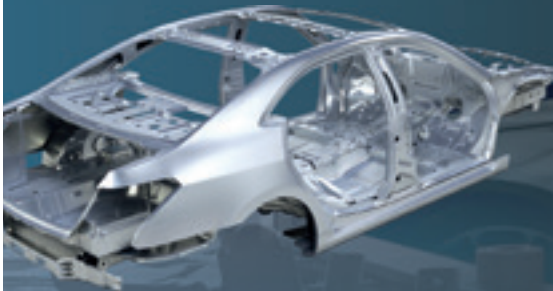
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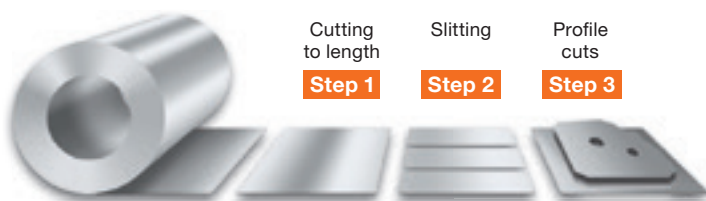
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\* Compared to laser cutting. For more information, see paper.



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