

International Conferences

“New Developments in Sheet Metal Forming”
May 4th / 5th May 2010

“Hydroforming of Sheets, Tubes and Profiles ”
6th May 2010

Conference Chairman: Prof. Dr.-Ing. M. Liewald MBA

“New Developments in Sheet Metal Forming”

4th / 5th May 2010

This International Conference gives a review of new developments in sheet metal forming. Aim of this conference is to present the state-of-the-art in sheet metal forming from a practical and scientific point of view. Furthermore market tendencies are displayed as well as future prospects on relevant manufacturing processes.

9.00

Prof. Dr.-Ing. M. Liewald MBA

Institute for Metal Forming Technology (IFU), Universität Stuttgart

Welcome and Introduction

9.15

Dr. sc. techn. D. Hundt, President,

Bundesvereinigung der deutschen Arbeitgeberverbände (BDA)

Germany - Centre of Innovative Industries in the Heart of Europe

- **Economical state of today**
- **Economic challenges**
- **Future of the “MINT” Initiative**
- **Outlook: Europe**

9.40

**Dr. V. Chaillou, COO
ESI Group, France**

The Challenge of the Virtual Manufacturing Chain to Achieve End to End Virtual Prototyping

- **Software Development for Virtual Manufacturing**
- **Stamping Simulation**
- **Chaining of Simulation Disciplines**

10.05

**Dipl.-Ing. J. Bleher, Managing Director
TRUMPF Laser- und Systemtechnik, Germany**

New Developments in the Process Chain Warmforming

- **Warmforming**
- **Hot forming**
- **Laser cutting**
- **Induction**
- **Laser machining**
- **Hot forming solutions**

Innovations Management / Innovations Research

11.00

**Prof. Dr.-Ing. Dr.-Ing. E.h. D. Spath, Director,
Institute for Human Factors and Technology Management, Universität Stuttgart**

From Evolutionary to Revolutionary Innovations

- **People need a future**
- **Future needs innovation**
- **Innovation needs research**
- **Accelerating innovation processes**
- **New approaches in innovation management**

11.25

**Prof. Dr.-Ing. B. Scholz-Reiter, Managing Director
BIBA - Bremer Institut für Produktion und Logistik GmbH, Universität Bremen, Germany**

Sustainable Ramp-Up Management in SMEs of the Automotive Electronic Industry

- **Ramp-Up Management**
- **Production Networks**
- **Knowledge Management**

11.50

Prof. Dr.-Ing. habil. B. Awiszus, Head of Chair

Ostfalia University of Applied Sciences, Fachhochschule Braunschweig

Integrated Simulation Process Chains in the Vehicle Development

- **Integrated process simulation**
- **Mapping of simulation results**
- **Interface definition**
- **Storage of simulation data in a product data management system**
- **Development of reference processes and workflows**
- **Module cockpit - status lights**

12.15

Dipl.-Ing. K. Aida, President & CEO

AIDA Engineering Ltd., Japan

Servo Press Technology - Innovation, Strategy and Efficiency - New Developments in Japan and Europe

- **Servo presses**
- **Latest developments**
- **Innovations**
- **Energy management**
- **Data transfer**
- **Reduction of tryout time**

Materials and Forming Processes

2.15

**Dr. W. Kubli, CEO & President
Autoform, Switzerland**

More Efficient Processes by Comprehensive Digital Process Planning

- **Geometry based process plan**
- **Cost optimization**
- **The ideal process**
- **Robust forming processes**
- **Digital tryout support**

2.40

**Dr.-Ing. J. Overrath, Member of the Executive Board
ThyssenKrupp Sofedit SAS**

Current Trends in the Material and Manufacturing Development for Hot Stamping Parts

- **Hot stamping**
- **Material development**
- **Tailored tempering**
- **Process technology**

3.05

Dr.-Ing. M. Sindel, Quality Assurance Materials Engineering, Head Aluminium Technology, Audi AG, Germany

Quality Requirements for Sheet Metal Components in Automotive Light Weight Construction at Audi

- **Material requirements**
- **Design requirements**
- **Process chain**
- **Quality**
- **Aluminium alloys**

3.30

Dipl.-Ing. U. Kneiphoff, Senior Engineer, ThyssenKrupp Steel Europe

Advanced Forming Technologies with Innovative Steel Grades, InCar Prototyping Report

- **T³ Profil forming process**
- **New multiphase steel grades**
- **Magnesium flat sheet products**
- **Prototyping**

Lightweight Construction

4.30

**Dr.-Ing. K.-H. Füller, Manager Metals, Forming Technologies
Daimler AG**

Lightweight Design with Metals – Challenge for Forming Technologies

- **Lightweight**
- **Steel**
- **Aluminium**
- **Magnesium**
- **Titan**
- **New process chains**

4.55

**Dipl.-Ing. N. Koch, Group Leader
Adam Opel GmbH, Germany**

Thin Sheet Strategy at Opels

- **Blank thickness reduction**
- **Weight reduction**
- **Surface defects**
- **High strength materials**
- **Strain hardening**
- **Pre-straining**

5.20

**Prof. Dr.-Ing. H. Hoffmann, Head of Institute
Institute for Metal Forming and Casting, TU München, Germany**

Process Stability of Magnesium AZ31 Shearing

- **Magnesium**
- **Shearing**
- **Experimental tool for heated shearing**
- **Continuous stroke**
- **Mechanisms of flaking**

Wednesday 5th May, 2010

Tools

8.30

**Prof. Dr.-Ing. K. Roll, Manager,
Daimler AG, Germany**

Innovative Methods for the Design of Forming Tools in Automotive Manufacturing - Status Report

- **Outline of the BMBF project IMAUF**
- **Elastic tool elastic machine**
- **Approaches regarding structure optimisation**
- **Geometry compensation**
- **Potential concerning quality and cost**

8.55

**Dipl.-Ing. C. W. Eckard, Managing Director
CES Eckard GmbH, Germany**

Weight Optimisation of Large Stamping Tools by Using Force Flow Methods

- **Weight optimisation**
- **Force flow method**

9.20

**Dr.-Ing. B. Haller, Head Die Design
Audi Hungaria Motors Kft, Hungary**

Design Accompanied Die- and Press Simulation

- **Collision verification**
- **Securing number of strokes**
- **Reduction first assembly time**
- **Optimisation of the motion sequence of the transfer**

9.45

**Dipl.-Ing. S. Huhn, Software Product Manager
Forming Technologies Deutschland GmbH**

On Process Planning Methodologies for Sheet Metal Stampings

- **Process planning**
- **Tool cost estimation**
- **Progressive dies**
- **Transfer dies**
- **Forming feature recognition**

Warm Forming, High Strength Steel

2.10

**Dipl. Ing. (FH) R. Kelsch MBA, Head Technology
voestalpine Polynorm GmbH & Co. KG**

New Developments in Heat Supported Forming of Aluminium Sheet Metal

- **Forming techniques**
- **Heating technologies**
- **Aluminium alloys 5xxx, 6xxx, 7xxx**
- **Examples, improvements**

2.35

**Prof. Dr. T. Altan, Director
Engineering Research Center for Net Shape Manufacturing (ERC/NSM), Ohio State University,
USA**

Challenges in Forming Advanced High Strength Steels

- **Springback**
- **Formability**
- **Flow stress**

3.00

**Dr.-Ing. E. Schaeper, Forming Customer Support
ArcelorMittal, Germany**

Prediction of the Formability of Hot Stamped Parts

- **Hot stamping**
- **Numerical simulation**
- **Formability limits**
- **Laser welded solutions**
- **Press hardened steels Usibor**

Robust Processes

4.00 pm

**Dipl.-Ing. W. Wiedenmann, Area Manager Sales and Marketing,
Andritz Kaiser GmbH**

Increase of Production Output with Servo Presses - Limits and Chances

- **Overview of actual servo drive technology of presses**
- **Report of delivered facilities**
- **Chances and limits of the servo technique**
- **Short presentation of new innovations**
- **Estimation of general market development**

4.25

Dipl.-Ing. A. Emrich

**Group Leader Simulation & VR, Die & Stamping Manager Quality & Strategy
Adam Opel GmbH, Germany**

Validation of the Robustness of Sheet Metal Forming in Simulation

- **Process robustness**
- **Reduction of scatter**
- **Target results**
- **Stochastic analysis, DoE**

4.50
Prof. Dr.-Ing. M. Liewald MBA, Director
Institute for Metal Forming Technology (IFU), Universität Stuttgart, Germany

Detection and Closed-loop Control of Local Part Wall Stresses for Optimisation of Deep Drawing Processes

- **Deep drawing**
- **Closed-loop control**
- **Sensors**
- **Part wall stress**
- **FEA**
- **Optimisation**

5.15

Close

“Hydroforming of Sheets, Tubes and Profiles”

6th May 2010

This International Conference gives a review of new developments in hydroforming technology. Aim of this conference is to present the state-of-the-art in hydroforming technology from a practical and scientific point of view. Furthermore market tendencies are displayed as well as future prospects on relevant manufacturing processes.

9.00

Prof. Dr.-Ing. M. Liewald MBA

Institute for Metal Forming Technology (IFU), Universität Stuttgart

Welcome and Introduction

9.15

Prof. Dr.-Ing. M. Liewald MBA

Institute for Metal Forming Technology (IFU), Universität Stuttgart

State-of-the-Art and Recent Developments in Hydroforming in Europe

9.40

Dipl.-Ing. P. Freytag, Managing Director

Salzgitter Hydroforming GmbH & Co. KG

Hydroforming - Manufacturing and Development from a Serial Production Producers Perspective

- **Market development**
- **Specific material characteristics**
- **Tolerances in serial production**
- **New applications and features**

10.05

**Dr. S. Geißler, Managing Director
fischer Hydroforming GmbH, Germany**

Increase of Benefit of Hydroforming Process by Integration of Additional Process Steps

- **Joining by hydroforming**
- **Cutting by hydroforming**
- **Bending by hydroforming**
- **Cost advantage**
- **Efficient manufacturing**
- **Additional benefit by hydroforming**

11.00

**Dipl. Ing. C. Merten, Product Manager
Schuler SMG GmbH & Co. KG.**

EXFREE - Expansions Free IHP, a Process Variant with New Applications

- **Origin and description**
- **Compared with conventional IHP**
- **Process flow and equipment**
- **Applications and examples**

11.25

Prof. Dr. G. Liu, Assistant to Dean

Harbin Institute of Technology, Harbin, PR China

Hydroforming of Thin-Walled Tubular Parts of Stainless Steel and Aluminium Alloy

- **Hydroforming of Y-shaped tube**
- **Approaches to avoiding wrinkling and cracking for thin-walled tube**
- **Finite element analysis on effects of preforming and loading path on plastic deformation, wrinkles and thickness distribution, etc.**
- **Forming limit of small radii on components with various cross-sections**

11.50

Prof. Dr. S. Kivivuori, Professor

Aalto University School of Science and Technology, Espoo, Finland

Research Based Innovations for Tube Hydro Forming Process, Products and Materials Testing

- **Tube hydro forming**
- **Process innovation**
- **Product innovation**
- **Materials research**

12.15

**Dr. A. Mentella, VM Support Engineer
ESI Italia**

New Potential Application for Tube and Sheet Hydroforming in Furnishing and Household Hardware

- **Tube hydroforming**
- **Double sheet hydroforming**
- **Flexible manufacturing**
- **Low volume production**

2.15

**Dr.-Ing. A. Hauger, Head Division Body
Muhr und Bender KG, Germany
Dipl.-Ing. H.-W. Scholz, Head Development Axis, Components Chassis
Volkswagen AG, Germany**

Hydroforming of Tailor Rolled Tubes Using the Example of Axle Components

- **Flexible Rolling for Tailor Rolled Tubes**
- **Design layout**
- **Process chain and production tolerances**
- **Lightweight design with adjusted metal sheet thicknesses**
- **Deriving part families**
- **Outlook for complex components and spaces**

2.40

Prof. Dr.-Ing. B. Engel

Institute for Production Technology and Machine Tools, Universität Siegen, Germany

Tube Bending - Process Variable for Hydroforming

- **Free-form bending**
- **Machine and tooling concept**
- **Process window**
- **Forming strategy**

3.05

Prof. Dr.-Ing. Dipl. Wirtsch.-Ing P. Groche, Director

Institute for Production Engineering and Forming Machines Technische Universität Darmstadt, Germany

Customised Material for Hydroforming

- **Potentials by the use of customised material**
- **Manufacture for customised material**
- **Subsequent processing through tube hydroforming**
- **Subsequent processing through sheet hydroforming**

4.00

Dipl.-Ing. C. Bolay, Scientific Assistant

Institute for Metal Forming Technology (IFU), Universität Stuttgart, Germany

Enhanced Process for Double Sheet Hydroforming

- **Die concept**
- **FEA and process control**
- **Die design**
- **Experimental investigations**

4.25

Dr.-Ing. S. Wagner

Institute for Metal Forming Technology, Universität Stuttgart, Germany

Die Concepts for Hydroforming of Low Volumes

- **Die design, costs**
- **Addendum design**
- **Process combination**

5.40

Closing Remarks: Prof. Dr.-Ing. M. Liewald MBA

Guided Tours to Industrial Companies

3rd May 2010

Audi AG, Neckarsulm

Läpple Werkzeugbau GmbH, Heilbronn

Daimler AG, Sindelfingen

TRUMPF Werkzeugmaschinen, Ditzingen

Participation Fee

You can apply for each of the following conferences:

Sheet Metal Forming, 4th/5th May	2 days 890.- €
Hydroforming, 6th May	1 day 490.- €
Sheet Metal- and Hydroforming, 4th – 6th May	3 days 1280.- €

Venue

**The International Conference takes place in
the Schwabenlandhalle in Fellbach (near Stuttgart)**

Tainer Str. 7, 70734 Fellbach