

ORGANIZED BY

Swedish-German Centre of Excellence for Hot Sheet Metal Forming of High-Performance Steel, CHS², Kassel/Luleå
(www.ltu.se/tfm/chs2)



2008

SUPPORTED BY

Centre for Metal Forming Technologies, METAKUS, Baunatal, Germany
(www.metakus.de)

Centre for High Performance Steel, CHS, Luleå, Sweden
(www.ltu.se/inst/tfm/chs)

Aktionslinie Hessen-Nanotech of the Hessian Ministry of Economics,
Germany (www.hessen-nanotech.de)

Svensk Verktygsteknik, Luleå, Sweden (www.svenskverktygsteknik.com)

Transregional Collaborative Research Centre SFB/TR TRR30, Germany
(www.transregio-30.com)

CONFERENCE SECRETARY

Nicolas Saba
University of Kassel
Chair of Metal Forming Technology
Kurt-Wolters-Strasse 3
D - 34125 Kassel, Germany

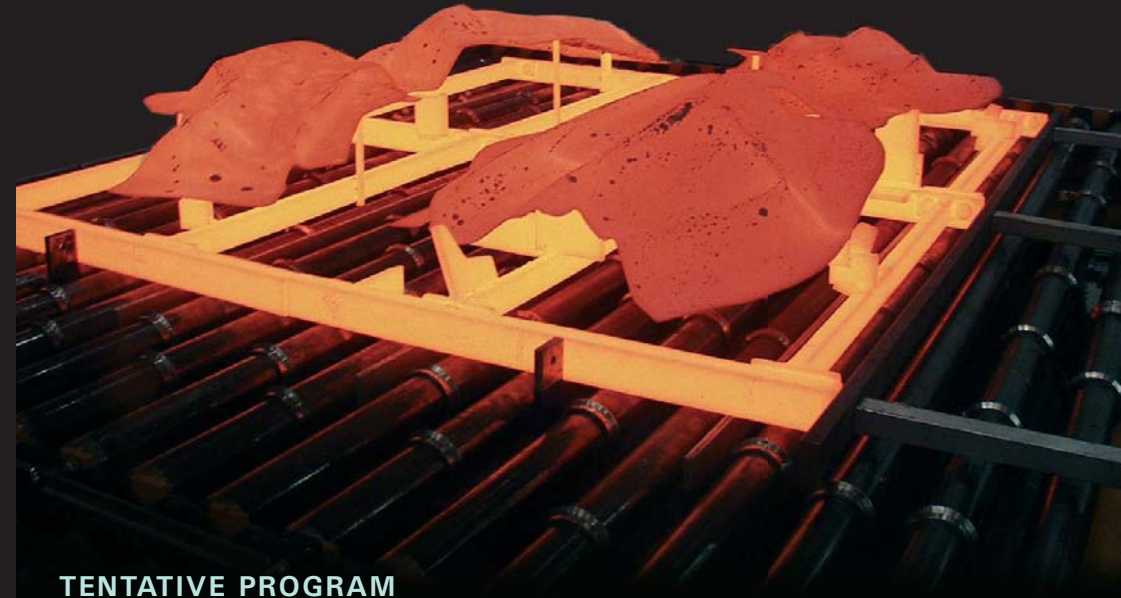
fon: +49 (0) 561 - 804 - 1976

fax: +49 (0) 561 - 804 - 2706

email: saba@uni-kassel.de

1st INTERNATIONAL CONFERENCE

on Hot Sheet Metal Forming
of High-Performance Steel



TENTATIVE PROGRAM

October 22th to 24th, 2008 – Kassel, Germany

SCOPE

Dear Colleagues,

The ongoing demand towards the application of high-performance steel and, beyond that, towards steel parts with tailored properties leads inevitably to a demand for improved metal forming technologies. Among these technologies, hot sheet metal forming is gaining increasing importance. The technological reason for that can be seen in the ability not only to improve formability at elevated temperatures but especially in the potential of simultaneous control of complex micro structures during thermo-mechanical processing. This of course involves challenges

in terms of tailored properties through optimisation of varying micro structure over the overall part geometry.

As the first in a series of international conferences, to be alternatively held in Kassel and in Luleå, CHS² 2008 will highlight these multiple aspects from a scientific as well as from an industrial viewpoint. Therefore, we cordially invite you to take part in the first assembly of this new arising technological society.

Kurt Steinhoff, Mats Oldenburg,
Braham Prakash

CONFERENCE FEE

Registration before June 30, 2008: _____ 790.00 Euro
Registration after June 30, 2008: _____ 850.00 Euro
Presenting authors and CHS² board members: _____ 250.00 Euro

The conference fee includes the participation in the lectures, exhibition, technical tour and the social events as well as course material.

At our websites **www.metform.de** or **www.ltu.se/tfm/chs2** you can find a registration form to be downloaded. Please mail or fax the duly filled and signed registration form to the conference secretary. Alternatively, you can take this page from the booklet; fill in the form on the back side and send it to the conference secretary by post.

SCIENTIFIC ADVISORY BOARD

- Prof. Pentti Karjalainen, Oulu University, FIN
- Prof. Ralf Kolleck, Graz University of Technology, AUT
- Prof. Marion Merklein, Friedrich-Alexander University Erlangen-Nuremberg, GER
- Prof. Mats Oldenburg, Luleå University of Technology, SWE
- Prof. Braham Prakash, Luleå University of Technology, SWE
- Prof. Kurt Steinhoff, University of Kassel, GER
- Prof. Rüdiger Weißner, Volkswagen AG, GER

INDUSTRIAL ADVISORY BOARD

- Otto Buschsieweke, Benteler Automobiltechnik GmbH, GER
- Dr. Theodor R. Gräbener, Theodor Gräbener GmbH & Co. KG, GER
- Dr. Philipp Hein, Arcelor Mittal, FRA
- Martin Jonsson, Gestamp-HardTech, SWE
- Dr. Franz-Josef Lenze, ThyssenKrupp Steel + Dr. Dirk Sauer, ThyssenKrupp Umformtechnik GmbH, GER
- Uwe Paar, Volkswagen AG, GER
- Ulrich Schoof, Dr. Eike Gücker, Dr. Göran Berglund, Linde + Wiemann GmbH KG, GER
- Rolf Schwartz, Schwartz GmbH, GER
- Dr. Dirk Stahl, Gestamp Automoción, ESP
- Isaac Valls Angles, Rovalma S.A., ESP

CONFERENCE SECRETARY

Nicolas Saba
University of Kassel
Chair of Metal Forming Technology
Kurt-Wolters-Strasse 3
D - 34125 Kassel, Germany

fon: +49 (0) 561 - 804 - 1976
fax: +49 (0) 561 - 804 - 2706
email: saba@uni-kassel.de

More information on registration:
www.ltu.se/tfm/chs2 or www.metform.de



REGISTRATION

for the 1st International Conference on Hot Sheet
Metal Forming of High-Performance Steel on
October 22th to 24th, 2008 – Kassel, Germany

fax: +49 (0) 561 804 2706

University of Kassel
Chair of Metal Forming Technology
Nicolas Saba
Kurt-Woilters-Strasse 3
D - 34125 Kassel, Germany

Registration before June 30: 790.00 €
Registration after June 30: 850.00 €
Presenting authors and CHS²
board members: 250.00 €

Titel	First Name	Last Name
Organization		
Address	City	
Phone	Fax	
Email		
Date	Signature	

The conference fee is payable immediately after registration.
Please use only one registration form per participant.



CANCELLATION

Charge of cancellations within 1 month to the opening day of the conference: charge 245.00 Euro.
No refunds on cancellations received after September 22, 2008.

KINDLY SUPPORTED



Svensk Verktygsteknik
www.svenskverktygsteknik.com



Centrum för Högpresterande Stål
www.ltu.se



SFB
www.transregio-30.de



Hessisches Ministerium
für Wirtschaft, Verkehr
und Landesentwicklung

Hessen Nanotech

Aktionslinie Hessen-Nanotech of the Hessian Ministry of Economics
www.hessen-nanotech.de

METAKUS

Metakus
Anwendungszentrum Metallformgebung
www.metakus.de



VENUE

OCTOBER 21th

To book your accommodation, please contact the Grand Hotel LA STRADA by September 9, 2008 under the keyword "CHS 2". An early accommodation is advisable since the room allocation is limited. More hotels near by the railway station Kassel-Wilhelmshöhe are listed below.

Grand Hotel moderne LA STRADA

Raiffeisenstraße 10

D - 34121 Kassel

fon: +49 (0) 561 - 20 90 0

fax: +49 (0) 561 - 20 90 500

email: reservation@lastrada.de

www.lastrada.de



18:00 Early Registration at Grand Hotel LA STRADA

19:00 Welcome Reception | room: blue 1 at Grand Hotel LA STRADA



ACCOMMODATION

Hotels near by the railway station Kassel-Wilhelmshöhe:

Penta Hotel Kassel

34131 Kassel | fon: +49 (0) 561 933 90

Schlosshotel Wilhelmshöhe

34131 Kassel | fon: +49 (0) 561 308 80

Kurparkhotel

34131 Kassel | fon: +49 (0) 561 318 90

Hotel Schweizer Hof

34131 Kassel | fon: +49 (0) 561 936 90

Hotel Astoria

34119 Kassel | fon: +49 (0) 561 728 30

InterCity Hotel Kassel

34121 Kassel | fon: +49 (0) 561 938 80

Hotel Chassalla

34121 Kassel | fon: +49 (0) 561 927 90

Further hotel accommodations:

>> www.kassel-tourist.de <<

EZ = Single Room; DZ = Double Room





08:30 Registration

09:30 Opening Session

09:45 KEYNOTE 1: Simulation of the Micro Structure Evolution in a Press Hardened Component

M. Oldenburg, P. Salomonsson, P. Åkerström, G. Bergman
(Luleå University of Technology, Gestamp Hardtech AB)

10:15 Coffee Break

10:30 SESSION 1: Materials I | CHAIRMAN: Philipp Hein (Arcelor Mittal)

10:30 Development Tendencies as to Processing of Press Hardening under Application of Coated Steel

F. J. Lenze, S. Sikora, J. Banik, D. Sauer (ThyssenKrupp Steel AG,
ThyssenKrupp Umformtechnik GmbH)

10:50 Tailor Made Tool Materials for the Present and Upcoming Tooling Solutions in Hot Sheet Metal Forming

I. Valls, B. Casas, N. Rodríguez, D. Latre (Roalma, S.A.)

11:10 Wet Chemical Coating Materials for Hot Sheet Metal Forming – Anti Scaling and Corrosion Protection

S. Goedicke, S. Sepeur, G. Frenzer, C. Breyer (NANO-X GmbH)

11:30 GP4M / CP4M – One Tool Steel for Different Concepts of Hot Sheet Metal Forming Tools

T. Henke, C. Escher (Dörrenberg Edelstahl GmbH)

12:00 Lunch

13:00 SESSION 2: Process Design I | CHAIRMAN: Ralf Kolleck (Graz University of Technology)

13:00 Investigations on Forming Limits within Hot Stamping

J. Lechler, M. Merklein (Friedrich-Alexander University Erlangen-Nuremberg)

13:20 Conductive Heating System for Hot Sheet Metal Forming

B.-A. Behrens, S. Hübner, M. Demir (Leibniz University Hannover)

13:40 High Temperature Tribological Studies on Surface Engineered Tool Steel and High Strength Boron Steel

J. Hardell, B. Prakash (Luleå University of Technology), K. Steinhoff
(University of Kassel)

14:00 Press Hardening Technology Successfully Established in the Market

J. Aspacher (Schuler SMS GmbH & Co. KG)

14:20 Industrial Application of Hot Forming Process Simulation

R. Erhardt, J. Böke (Benteler Automobiltechnik GmbH)

14:40 SESSION 3: Modeling & Simulation I | CHAIRMAN: Dirk Stahl (Gestamp Automoción)

14:40 Modeling Hot Sheet Metal Forming

A. Shapiro (LSTC USA)

15:00 Numerical Process Design of Hot Stamping Processes Based on Optimized Thermo-Mechanical Characteristic

H. Karbasian, A. Brosius, E. Tekkaya (Dortmund University of Technology)

15:20 Simulation Based Development of a Hot Forming Process Layout

M. Kerausch, T. Schönbach (AutoForm Engineering GmbH)

OCTOBER 22th

- 15:40 **A new Approach for a Thermo-mechanical Coupled Simulation of the Hot Stamping Process**
K. Kassem-Manthey, H. Spiess, K. Wolf (GNSmbH, Fraunhofer SCAI)
- 16:00 **Simulation of Hot Stamping Processes**
M.D. Riera, M. Coussirat, A. Guarmo, I. Valls, D. Casellas (Technical University of Catalonia, Centre Diagnòstic Industrial i Fluidodinàmica CDIF, ROVALMA, S.A.)
- 16:20 **Coffee Break**
- 16:35 **SESSION 4: Process Design II / Products | CHAIRMAN:** Rüdiger Weißner (Volkswagen AG)
- 16:35 **Functional Wear Resistant Tool Surfaces For Hot Metal Forming Processes**
W. Tillmann, E. Vogli, I. Baumann, F. Hoffmann (Dortmund University of Technology)
- 16:55 **Evaluation of the Crash Appropriateness by a New Material**
T. Laumann (BMW Group)
- 17:15 **Press Hardened Components from Kassel – Chances and Challenges**
U. Paar, H. H. Becker, M. Alsmann (Volkswagen AG)
- 17:35 **Hot Stamped Components with “Soft Zones”– Simulation and Validation of Material Properties and Product Performance**
D. Berglund, K. Amundsson, L-O. Hellgren (Gestamp R&D, Volvo Cars, Saab Automobile AB)
- 17:55 **End of day 1**
- 20:00 **Conference banquet**
During this banquet dinner a special event will be performed.

OCTOBER 23th

OCTOBER 23th

- 09:00 **KEYNOTE 2: The History of Hardening of Boron Steel in Northern Sweden**
Göran Berglund (Accra Teknik AB)
- 09:20 **SESSION 5: Materials II | CHAIRMAN:** Marion Merklein (Friedrich-Alexander University Erlangen-Nuremberg)
- 09:20 **Tool Performance in Cutting of Hot Stamped Steels**
I. Picas, R. Hernández, D. Casellas, B. Casas, I. Valls (CTM-Technological Center, Rovalma S.A.)
- 09:40 **Hot Forming of Work Hardened Steel**
M. Maikranz-Valentin, N. Saba, U. Weidig, R. Weißner, K. Steinhoff (University of Kassel)
- 10:00 **Press-hardening of Hot-dip Galvanized 22MnB5: A Stable and Reproducible Process**
K. Knezar, T. Manzenreiter (Voestalpine Stahl GmbH)
- 10:20 **Hot Sheet Metal Forming – R&D along the Process Chain inside the Salzgitter Group**
M. Braun (Salzgitter Mannesmann Forschung GmbH)
- 10:40 **Coffee Break**
- 11:00 **SESSION 6: Process Design III | CHAIRMEN:** Franz-Josef Lenze (ThyssenKrupp Steel), Dirk Sauer (ThyssenKrupp Umformtechnik GmbH)
- 11:00 **Experimental Investigation of Friction and Wear in Hot Stamping of USIBOR 1500P**
C. Dessain, P. Hein, J. Wilsius, L. Penazzi, C. Boher, J. Weikert (ArcelorMittal R&D Automotive Applications, CROMeP Ecole des Mines d’Albi Carmaux, METAKUS)



11:20 Hybrid Method for Low Pressure Forming of Boron Alloyed Steels
L. Vadillo, A. Mangas, B. González, M. Gutiérrez, J. I. Zarazua, U. Paar (TECNALIA Automoción, Volkswagen AG)

11:40 Alternative Heating Concepts for Hot Sheet Metal Forming
R. Kolleck, R. Veit, H. Hofmann, F. J. Lenze (Graz University of Technology, ThyssenKrupp Steel AG)

12:00 Roller Hearth Furnaces for Press Hardening
R. Schwartz, H. Lehmann (Schwartz GmbH)

12:20 Lunch

13:20 KEYNOTE 3:
Martin Jonsson (Gestamp-HardTech AB)

13:40 SESSION 7: Modeling & Simulation II | CHAIRMAN: Pentti Karjalainen (Oulu University)

13:40 Recent Advances in Hot Forming Simulation with LS-DYNA
D. Lorenz, A. Haufe (DYNAmore GmbH)

14:00 Experimental and Numerical Evaluation of the Heat Transfer Coefficient in Press Hardening
P. Salomonsson, M. Oldenburg, P. Åkerström, G. Bergman, (Luleå University of Technology, Gestamp Hardtech)

14:20 Thermo-mechanically Coupled Analysis: the Next Step in Sheet Metal Forming Simulation
I. Neubauer, K. Hübner, T. Wicke (simufact engineering gmbh)

14:40 Validation of a Material Model for Process Simulation in Hot Stamping
B.-A. Behrens, P. Olle (Leibniz University Hannover)

15:00 Finite Element Simulation of Warm Forming of Interstitial Free (IF) Steel and Study the Effect of Blank Temperature on Thickness Distribution and Drawability
S. Kumar Singh (GRIET, Bachupally, Hyderabad)

15:20 Coffee Break

15:40 SESSION 8: Process Design IV | CHAIRMAN: Otto Buschsieweke (Benteler Automobiltechnik GmbH)

15:40 Determination of Frictional and Thermal Characteristics for Hot Stamping with Respect to a Numerical Process Design
M. Merklein, J. Lechler, T. Stöhr (Friedrich-Alexander University Erlangen-Nuremberg)

16:00 Multi Stage Thermo-Mechanical Process Strategies in Hot Sheet Metal Forming
J. Weikert, M. Ohlwein, K. Steinhoff (METAKUS, University of Kassel)

16:20 CAE Based Hot Press Forming Die Design
H.G. Kim, H.S. Son, T.H. Kim, B.K. Choi, M.K. Park, Y.R. Cho and S.H. (POSCO Technical Research Laboratories)

16:40 Potential of Hot-formed Graded Profiles in Car Body Structures
U. Schoof, E. Gücker, G. Berglund (Linde + Wiemann GmbH KG, ACCRA Teknik AB)

17:00 Hot Stamping Technology moves on
H. Kömpf (NEFF-Pressen, Walter Neff GmbH)

OCTOBER 23th

Luleå, Sweden from June 15th to 17th, 2009

OCTOBER 24th

17:20 Closing Session. End of Conference

19:15 Bus transfer from LA STRADA to METAKUS

19:30 Get-together at METAKUS

Hourly Shuttle-Service between Grand Hotel LA STRADA and METAKUS (Emder Str.1, 34225 Baunatal, Germany)

OCTOBER 24th | TECHNICAL TOUR

09:30 Shuttle-Service to VW

The technical tour will give the participants a unique chance to experience the industrial application of hot sheet metal forming processes. However, this tour not only includes a visit to the press hardening production at the Volkswagen works in Kassel but beyond that a comprehensive overview over one of the world's largest production sites for numerous high-quality automotive components.

13:00 Approx. End of tour

ANNOUNCEMENT

CHS² Conference 2009

Please note that the 2nd International Conference on Hot Sheet Metal Forming of High-Performance Steel will take place at "Kulturens Hus" at Luleå, Sweden, from June 15th to 17th, 2009.

CONFERENCE PROCEEDINGS

The conference proceedings will be published in a book format. Additionally, selected papers will be published in an international journal.

EXHIBITION

Various possibilities for exhibition and/or advertisement are offered. For further information please contact the conference secretary.

The programme is subject to changes until the beginning of the conference.

