CHS² – 2015

5th International Conference on

HOT SHEET METAL FORMING OF HIGH-PERFORMANCE STEEL

MAY 31st until JUNE 3rd 2015

TORONTO, ONT., CANADA

TENTATIVE PROGRAM

UNIKASSEL VERSITÄT

LULEÅ UNIVERSITY OF TECHNOLOGY

AIST ASSOCIATION FOR IRON & STEEL TECHNOLOGY

SCOPE

Press hardening was invented in the early 1970s, with automotive applications beginning a decade later. However, in the past 10 years, press hardened ultrahigh-strength steel has become one of the most important drivers in contemporary lightweight car body design.

Today, more than 200 hot stamping production lines are in operation worldwide, and hundreds of millions of parts are produced on all continents every year. What started as a niche technology has developed into a mainstream area in lightweight design.

To maintain this positive trend and harness the full potential of this technology, further innovation in press hardening steel (PHS) technology is essential. Research and development, at both the academic and industrial levels, is one of the most important prerequisites for continuing innovation.

The Swedish German Centre of Excellence for Hot Sheet Metal Forming of High-Performance Steel (CHS²), the University of Kassel (Germany) and the Luleå University of Technology (Sweden) established a unique worldwide competence network to meet the future challenges of hot sheet metal forming technology.

One of CHS²'s network activities involves organizing the biannual CHS² conference series. With four very successful conferences since the initial conference in 2008, CHS² has grown into the leading platform for scientific exchange in PHS technology, constituting the most important meeting point for the international scientific community in the field.

The 5th International Conference on Hot Sheet Metal Forming of High-Performance Steel, CHS² 2015, invites specialists from all over the world to enter this unique exchange platform and to benefit from each other's experience and expertise. Topics like microstructure evolution, deformation, thermal properties, failure, surface coatings and steel substrates will share the same focus as heat transfer, high-temperature tribology, thermal processing, process monitoring, modeling, simulation and, of course, new PHS part generations and design principles.

ORGANIZING COMMITTEE

Prof. Kurt Steinhoff
University of Kassel, Germany

Prof. Mats Oldenburg
Luleå University of Technology, Sweden

Prof. Braham Prakash
Luleå University of Technology, Sweden

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CONFERENCE SECRETARY

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Updated information can be found on the conference homepage www.chs2.eu

www.CHS2.eu

www.AIST.org

REGISTRATION

The Registration for the 5th International Conference on Hot Sheet Metal Forming of High-Performance Steel – CHS² 2015 is open now!

Register before 31 March 2015 to receive a discounted rate.

Online-registration: **www.AIST.org**

ORGANIZED BY

CHS² will be organized in cooperation with the **Association for Iron & Steel Technology (AIST)**, a non-profit organization with 16,500 members worldwide. AIST is recognized as a global leader in networking, education and sustainability programs for advancing iron and steel technology.

CHS 2015 will be co-located with the **10th International Conference on Zinc and Zinc Alloy Coated Steel Sheet (Galvatech 2015)**, the premier international forum for the presentation and discussion of new and emerging technologies for processing and performance of zinc-coated steel sheet.

Galvatech 2015 and CHS² 2015 will feature special joint sessions on the state of the art coated steel dedicated for hot stamping applications. Cross-conference access will be possible for all participants for both conferences. In addition, a vendor exposition will be open for all attendees and participants.

Visit **www.AIST.org** for more information.

VENUE

Sheraton Centre Toronto

Venue for the conference will be Sheraton Centre Toronto located in Toronto, Ontario, Canada and is near all of Toronto's attractions.

Sheraton Centre Toronto
123 Queen Street West
Toronto, Ontario, Canada

www.sheratontoronto.com

Toronto is the most populous city in Canada and the provincial capital of Ontario. It is located in Southern Ontario on the northwestern shore of Lake Ontario.

HOUSING & TRAVEL

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Please visit **AIST.org** for more Information.

SUNDAY, May 31, 2015

04:00 p.m. – 06:00 p.m. Pre-Registration, Sheraton Centre Toronto
05:00 p.m. – 06:30 p.m. Welcome Reception

MONDAY, June 1, 2015

08:30 a.m.	**Opening Session – Welcome Speech** Prof. Kurt Steinhoff, University of Kassel, Germany; Prof. Mats Oldenburg, Luleå University of Technology, Sweden; Prof. Braham Prakash, Luleå University of Technology, Sweden	
08:40 a.m.	**Opening Speech** N.N.	
	Conference Room A (200 – 250 persons) **A**	**Conference Room B (150 – 200 persons)** **B**
09:00 a.m.	**Tailored Properties I** **A1**	**Hydrogen Embrittlement** **B1**
09:00 a.m.	**Partial Tempering of Press Hardened Steels by Direct Flame Impingement – the Review of an Alternative Approach for Tailored Properties** Zimmermann, F.; Spörer, J. (BMW AG, Dingolfing, GER); Volk, W. (UTG – Technische Universität München, Garching, GER)	**Investigating the Interaction Between Hydrogen and Press Hardened Materials** Weczera, J.; Sunderkötter, C.; Plath, A. (Volkswagen AG, Group Research, Wolfsburg, GER); Rhode, M. (BAM Federal Institute for Materials Research and Testing, Berlin, GER); Jüttner, S. (Institute of Materials and Joining Technology, Otto von Guericke Universität Magdeburg, GER)
09:20 a.m.	**Laser Softening of Press Hardened Steel in High Volume Production** Schaefer, M.; Harrer, T. (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, GER); Schuoecker, D.; Aichinger, J. (Oberösterreichisches Laserzentrum e.V., Gmunden, AUT)	**Influence of Microstructures on Hydrogen Embrittlement Susceptibility of Hot Stamped Ultrahigh Strength Components** Senuma, T.; Takemoto, Y. (Okayama University, Okayama, JPN)
09:40 a.m.	**Hot Forming and Subsequent Cooling Outside the Press for Adjusted Tailored Properties of 22MnB5 Steel Sheets** Behrens, B.-A.; Schrödter, J.; Moritz, J.; Gaebel, C.M. (Institute of Forming Technology and Machines, Leibniz Universität Hannover, GER); Maier, H.J.; Nürnberger, F.; Wolf, L. (Institute of Materials Science, Leibniz University of Hanover, GER)	**Impact of Nb Microalloying on the Hydrogen Embrittlement of Press Hardening Steel** Bian, J. (Niobium Tech Asia, SGP); Mohrbacher, H. (NiobelCon bvba, Schilde, BEL); Zhang, S. (College of Mechanical Engineering, Jingzhou, CHN); Lu, H.; Wang, W. (CITIC Metal Co., Ltd, Beijing, CHN); Zhang, Y.; Wang, L. (University of Science and Technology, Beijing, CHN)

10:00 a.m.	**Refreshment Break**	
10:20 a.m.	**Coatings I*** **A2***	**Formability & Failure** **B2**
10:20 a.m.	**Effects of Depth of Surface Crack on Fatigue Property in Zn-Ni Coated Press Hardened Steel** Nakagawa, K.; Nakagaito, T.; Yokota, T.; Seto, K.; Yoshitake; A. (JFE steel corporation, Chiba, JPN)	**Flow Curve Determination for Hot-Sheet-Metal Forming Processes Using a Hot-Gas-Bulge-Test** Braun, A.; Bambach, M.; Hirt, G. (Institute of Metal Forming, RWTH Aachen University, GER); Storz, J. (Institute for Fluid Power Drives and Controls, RWTH Aachen University, GER)
10:40 a.m.	**Micro-Crack Investigation in Zinc Coating Layer on Boron Steel Sheet in Hot Press Forming Process** Seok, H.-H.; Mun, J.-C. (Pusan National University, KOR); Lim, O.-D. (AutoGen, Gyeonggi Do, KOR); Kang, C.-G. (Pusan National University Engineering Research Center for Net Shape and Die Manufacturing, KOR)	**Effect of Scale Thickness on Formability in Hot Stamping of Boron Alloyed Steel** Yanagida, A.; Komatsu, E.; Ozaki, R. (Tokyo Denki University, JPN); Azushima, A. (Yokohama National University, JPN)
11:00 a.m.	**Microstructural Features of Liquid Metal Embrittlement Cracks in Zn-Coated 22MnB5 Press Hardening Steel** Kang, H.; Cho, L.; Lee, C.; Cooman, B.C. (Graduate Institute of Ferrous Technology, Pohang University of Science and Technology, KOR)	**The Effect of Isolated Deformation Modes on the Appearance of Cracks in Hot Stamped Zinc-Coated Boron Steel** Pujante, J.; Casellas, D. (Fundació CTM Centre Tecnològic, Manresa, ESP); Ademaj, A. (University of Kassel, Chair of Metal Forming Technology, GER); Schwinghammer, H.; Kurz, T. (Voestalpine Stahl GmbH, Linz, AUT); Hensen, G. (Tata Steel R&D, IJmuiden, NED)
11:20 a.m.	**Characteristics of Crack Evolution in Al-Si Coating under Different Deformation Conditions** Wang, K.; Liu, P.; Wang, Z.; Liu, Y.; Zhu, B.; Zhang, Y. (State Key Laboratory of Materials Processing and Die and Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)	**A New Technique for Determining Forming Limit Diagrams for Hot Stamping** Li, X.; Feng, L. (Shougang Research Institute of Technology, Beijing, CHN); Li, N.; Lin, J.; Balint, D. (Imperial College London, GBR)

MONDAY, June 1, 2015

12:00 p.m.	Lunch	
01:20 p.m.	**Modeling & Simulation I** A3	**Process Design I** B3
01:20 p.m.	**Microstructure-Based Modeling of Ductile Failure – Application to Components with Tailored Properties** Östlund, R.; Oldenburg, M. (Luleå University of Technology, SWE)	**Mechanical Link Servo Press for Improved Hotforming Capability** Maki, T. (Amino North America Corporation, St. Thomas, ON, CAN); Amino, M. (Amino Corporation, Fujinomiya, Shizuoka, JPN)
01:40 p.m.	**Implementation of a Failure Criterion for Axial Crush of Fully Hardened Boron Steel** Kortenaar, L.t.; Omer, K.; Bardelcik, A.; Worswick, M. (University of Waterloo, ON, CAN); Detwiler, D.; Malcolm, S. (Honda R&D Americas Inc., Raymond, OH, USA); Soldaat, R. (ArcelorMittal – Dofasco, Hamilton, ON, CAN)	**Production Control and Optimization of Hot Stamping Line** Wang, L.; Wang, Q.; Meng, J.; Wang, Y.; Zhang, Y. (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong, University of Science and Technology, Wuhan, CHN); Yao, X. (Dongguan Hot-stamping Technology Co., Ltd., Dongguan, CHN)
02:00 p.m.	**Prediction of localisation and failure in Thermo-Mechanical Forming Simulation** Bergman, G.; Berglund, D. (Gestamp HardTech AB, Luleå, SWE)	**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, Waghäusel, GER)

	Conference Room A (200 – 250 persons) A	Conference Room B (150 – 200 persons) B	Conference Room C approx. 30 persons C
02:20 p.m.	**Tailored Properties II** A4	**Tribology I** B4	**TUTORIAL: PHS Process Monitoring – Skills & Methods for Professionals** C1
02:20 p.m.	**Study on Fracture in Heat Affect Zones in the Vicinity of Spot-Welds in a Steel with Tailored Material Properties** Golling, S.; Östlund, R.; Oldenburg, M. (Luleå University of Technology, SWE)	**Parameters Influencing Adhesive Wear Behavior within Hot Stamping Operations** Wieland, M.; Merklein, M. (Institute of Manufacturing Technology, Friedrich-Alexander University of Erlangen-Nuremberg, GER)	 **Prof. Dr. Kurt Steinhoff** (University of Kassel, Chair of Metal Forming Technology, GER)
02:40 p.m.	**Fracture Resistance of Tailor Tempered Microstructures Obtained by Different Press Hardening Conditions** Casellas, D. ; Lara, A. (Fundació CTM Centre Tecnologic, Manresa, ESP); Oldenburg, M. (Luleå University of Technology, SWE)	**Tribological Studies of Hot Work Tool Steel and Coated Boron Steel using a Simulative Tribometer and Field Tests** Mozgovoy, S.; Hernandez, S.; Hardell, J.; Prakash, B. (Luleå University of Technology, SWE); Pujante, J.; Vilaseca, M.; Ramirez, G.; Casellas, D. (Fundació CTM Centre Tecnologic, Manresa, ESP)	
03:00 p.m.	**Partial Hardening of New Press Hardenable Steel Grades** Marten, T.; Block, H.; Tröster, T. (University of Paderborn, Chair of Automotive Lightweight Construction (LiA), GER)	**Analysis of the Tribological Performances of New Tool Steels in Hot Stamping Applications** Ghiotti, A.; Bruschi, S.; Medea, F. (University of Padua, ITA); Hamasaiid, A. (Rovalma S.A., Rubí, ESP)	
03:20 p.m.	Refreshment Break		

03:40 p.m.	**Product Properties** A5	**Heating & Cooling I** B5
03:40 p.m.	**Crevice Corrosion of Patch Reinforcements of Hot Stamping Steels** Jönsson, M.; Levander, L.; Berglund, D. (Gestamp, Luleå, SWE)	**Experimental Measurements of the Dynamics of Austenitization and Evolution of the Al-Si Coating of 22Mnb5 Blanks Undergoing Rapid Heating** Chester, N.; Leung, J.; Daun, K.; Wells, M. (University of Waterloo, ON, CAN)
04:00 p.m.	**Side Impact Crash Behavior of Press-Hardened Steels-Correlation with Mechanical Properties** Larour, P.; Pichler, A.; Kurz, T. (voestalpine Stahl GmbH, Linz, AUT); Naito, J. (Kobe Steel Ltd., Mechenical Engineering Research Laboratory, Takatsukadai, Nishi-Ku Kobe, JPN); Murakami, T. (Kobe Steel, Ltd, Material Research Laboratory, Takatsukadai, Nishi-Ku Kobe, JPN)	**PACEFLAME – a Versatile Tool to Boost Efficiency in Hot Forming Processes** Bors, M. (Linde AG, Unterschleißheim, GER)
04:20 p.m.	**Multi-Axial Deformation Behavior of Hot Formed Structures at High Strain Rates** Weiß, N.; Marten, T.; Block, H.; Tröster, T. (University of Paderborn, Chair of Automotive Lightweight Construction (LiA), GER)	**Stabilisation of Hardness of Product in Hot Stamping Using Rapid Resistance Heating** Maeno, T.; Mori, K.-I.; Sakagami, M.; Nakao, Y. (Toyohashi University of Technology, JPN)
04:40 p.m.	**Effect of Shot Peening on the Residual Stress of Hot Stamping Parts** Ge, R.; Xue, H.; Zhou, S.; Wang, H. (Research and Development Center of Wuhan Iron and Steel Corp., CHN)	**New Developments in Furnaces for Press-Hardening** Lehmann, H. (RWTH Aachen, GER)
05:00 p.m.	**End of Day 1**	
06:00 p.m.	**Banquet Dinner at the Hockey Hall of Fame**	

TUESDAY, June 2, 2015

	Conference Room A (200 – 250 persons) A	Conference Room B (150 – 200 persons) B
08:20 a.m.	**Coatings II*** A6*	**Press Hardening Steel I** B6
08:20 a.m.	**Direct Hot-forming of Zinc Coated Press-hardening Steel** Kurz, T.; Schwinghammer, H.; Luckeneder G.; Manzenreiter, T. (voestalpine Stahl GmbH, Linz, AUT); Sommer, A. (voestalpine Polynorm GmbH & Co. KG, Schwäbisch Gmünd, GER)	**Hot Forming of a Medium-Mn TRIP Steel** Jin, X.; Wang, L. (The State Key Laboratory of Automotive Steel Development and Application, Baoshan, Iron and Steel Co. Ltd., Shanghai, CHN); Xiong, X.; Wang, J. (China Science Lab, General Motors Global Research and Development, Shanghai, CHN); Belanger, P. (Product Industrial Engineering, General Motors Global Product Integrity, Warren, MI, USA)
08:40 a.m.	**Unlocking the Potential of Zinc Coated Steel for Hot Forming by Innovative Process Modifications** Hensen, G.; Beentjes, P.; Abspoel, M. (Tata Steel, IJmuiden, NED)	**Hot Forming Response of Medium Mn Transformation Induced Plasticity Steels** Rana, R.; Carson, C.H.; Speer, J. (Colorado School of Mines, Golden, USA)
09:00 a.m.	**Coating Evolution and Mechanical Behavior of Zn-Coated Press-Hardening Sheet Steel** Ghanbari, Z.; Speer, J.; Findley, K. (Colorado School of Mines, Golden, USA)	**The Origin of Hematite Blades or 'Red-Oxide' on Bare Press Hardening Steels** Garza-Martinez, L.; Comstock, R. (AK Steel Middletown, OH, USA)
09:20 a.m.	**Structural Change of Galvanannealed Coating during Hot Stamping Heating Process** Sengoku, A. (Steel Research Laboratories, Nippon Steel & Sumitomo Metal Corporation, Futtsu, JPN); Takebayashi, H. (Nagoya R & D Lab., Nippon Steel & Sumitomo Metal Corporation, Tokai, JPN)	**Metallurgical Controlling Factors for the Ductility of Hot Stamped Parts** Otani, S.; Kozuka, M.; Murakami, T.; Naito, J. (KOBE STEEL LTD., Kobe, JPN); Pichler, A.; Kurz, T. (voestalpine Stahl GmbH, Linz, AUT)

TUESDAY, June 2, 2015

09:40 a.m.	**The Development of the Coated Hot Forming Steels at WISCO** Bi, Y. (Wuhan Iron & Steel (Group) Corp, Advanced Materials R&D Center, Beijing, CHN); Ge, R.; Feng, G.; Fang, F.; Liu, K.; Zhou, S. (Wuhan Iron & Steel (Group) Corp, Research and Development Center, Wuhan, CHN)	**A New Invention of Zn-Coatable Ultra-ductile Press-Hardened Steel Achieving Strength of 1300MPa Combined with 28% Elongation in Hot-Stamped Parts** Yi, H.L.; Du, P.J. (RAL, Northeastern University, Shenyang, Liaoning, CHN); Wang, B.G. (Easyforming Steel Technology Co., Ltd., Chongqing, CHN)
10:00 a.m.	Refreshment Break	
10:20 a.m.	**Process Design II** A7	**Modeling & Simulation II** B7
10:20 a.m.	**General Motors' Global PHS Process Control Requirements & Audit Findings** Belanger, P.; Labrie, R.; Pearson, A. (General Motors Company, Warren, MI, USA)	**Artificial Neural Network (ANN) based Microstructure Modeling of 22MnB5 Boron Steel during Tailored Quenching in Hot Stamping Process** Chokshi, P.; Hughes, D.; Dashwood, R. (WMG, University of Warwick, Coventry, West Midlands, GBR); Norman, D.; McGregor, I. (Tata Steel Automotive Engineering Group, IARC Building, University of Warwick, Coventry, West Midlands, GBR)
10:40 a.m.	**Intelligent Process Control in Press Hardening** Drossel, W.-G.; Pierschel, N.; Schönherr, J.; Polster, S.; Priber, U.; Schieck, F.; Berndt, S. (Fraunhofer Institute for Machine Tools and Forming Technology IWU, Chemnitz, GER); Alsmann, M. (Volkswagen AG, Werk Kassel, Baunatal, GER)	**Material Characterization and Numerical Modelling of a Hot Stamping Process with Tailor Heated Blanks** Behrens, B.-A.; Bouguecha, A.; Moritz, J.; Gaebel, C.M.; Schrödter, J. (Institute of Forming Technology and Machines, Leibniz University of Hanover, Garbsen, GER)
11:00 a.m.	**Deep Drawing Technique with Temperature Distribution Control for Hot-Stamping Process** Ota, E.; Yogo, Y.; Iwata, N. (Toyota Central R&D Labs., Inc.Yokomichi, Nagakute, Aichi, JPN)	**A Thermo-Plastic-Martensite Transformation Coupled Constitutive Model for Springback Prediction in Hot Stamping** Zhu, B.; Liu, Y.; Liang, W.; Wang, L.; Wang, Y.; Zhang, Y. (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, CHN)
11:20 a.m.	**Investigations on Aluminium Hot Forming in Comparison to other Aluminium Forming Technologies and the Press Hardening of Steel** Koroschetz, C.; Skrikerud, M.; Jönsson, L.-O.; Andersson, T. (AP&T AB, Ulricehamn, SWE)	**Developments of Experimental Platform and Finite Element Model for Hot Stamping Processes** Hung, C. (Dept. of Mechanical Engineering, National Chiao Tung University, Hsinchu, TWN); Hung, T.-Z.; Tsai, H.-K.; Chen, F.-K. (Dept. of Mechanical Engineering, National Taiwan University, Taipei, TWN); Lee, P.-K. (Iron & Steel Research & Development Dept., China Steel Corporation, Kaohsiung, TWN)
12:00 p.m.	Lunch	
01:20 p.m.	**Heating & Cooling II** A8	**Tailored Properties III** B8
01:20 p.m.	**Influence of Short Austenitization Treatments on the Mechanical Properties of Low Alloy Boron Steel** Holzweißig, M.J.; Andreiev, A.; Schaper, M. (University of Paderborn, Materials Science, GER); Lackmann, J.; Konrad, S.; Rüsing, C. (Benteler Automotive, Research and Development, Paderborn, GER); Niendorf, T. (TU Freiberg, Institute of Materials Science, GER)	**Hotformed Tailor Rolled Products, Tailored Lightweight Design Solutions for the Vehicle Structure** Brecht, J.; Pohl, S.; Goeddeke, B. (Mubea TRB, Attendorn, GER)
01:40 p.m.	**Incomplete Austenitization of Patched Blanks in Hot Forming Die Quenching** Jhajj, K.; Daun, K. (University of Waterloo, ON, CAN); Slezak, S. (Formet Industries, St. Thomas, ON, CAN)	**Development and Testing of an Axial Crush Member with Tailored Properties** Omer, K.; Bardelcik, A.; George, R.; Worswick, M. (University of Waterloo, ON, CAN); Detwiler, D.; Malcolm, S. (Honda R&D Americas Inc., Raymond, OH, USA); Adam, N. (Prometek Research Centre, Brampton, ON, CAN)
02:00 p.m.	**Bake Hardening Analysis of 22MnB5 PHS by the Impulse Internal-Friction** Choi, W.S.; De Cooman, B.C. (Graduate Institute of Ferrous Technology, Pohang University of Science and Technology, KOR)	**Effects of Various Scenarios in Tailoring a Hot Stamping Part on the Side Impact Behaviour** Abdollahpoor, A.; Pereira, M.P.; Rolfe, B.F. (Deakin University, Geelong, Victoria, AUT); Chen, X.; Xiao, N. (Chinese Academy of Sciences, Shenyang, CHN); Chen, X. (Hunan University, Changsha, CHN)

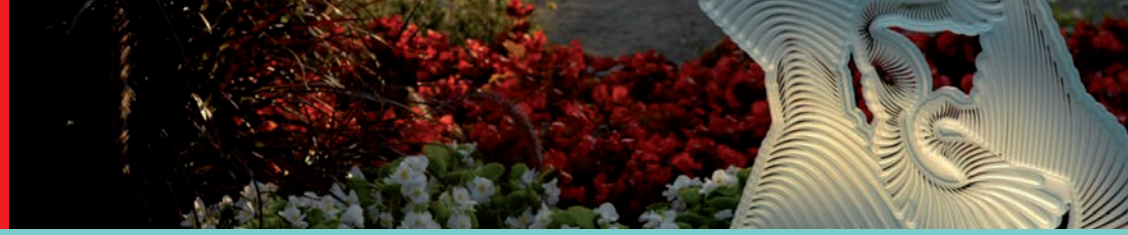
TUESDAY, June 2, 2015

	Conference Room A (200 – 250 persons) **A**	Conference Room B (150 – 200 persons) **B**	Conference Room C approx. 30 persons **C**
02:20 p.m.	**Heating & Cooling III** A9	**Tailored Properties IV** B9	**TUTORIAL: Simulation Methods for Press Hardening Applications** C2
02:20 p.m.	**Effects of Heating Time on Transformation during Cooling of Boron Steel Sheets** Hikida, K. (Nippon Steel & Sumitomo Metal Corporation, Futtsu, JPN); Kojima, N. (Nippon Steel & Sumitomo Metal Corporation, Hirohata, JPN)	**Forming Tailored Material Properties Through Direct Contact Heating** Rasera, J.; Field, N.; Daun, N. (University of Waterloo, ON, CAN); D'Souza, M. (F&P Manufacturing Inc., Tottenham, ON, CAN)	 **Prof. Dr. Mats Oldenburg** (Luleå University of Technology, SWE)
02:40 p.m.	**Effect of High Cooling Rate on Shape Accuracy of Hot Stamped Parts** Nomura, N.; Seto, A. (Nippon Steel & Sumitomo Metal Corporation, Amagasaki, Hyogo JPN); Fukuchi, H. (Nippon Steel & Sumitomo Metal Corporation, Futtsu, Chiba JPN)	**A New Hot Stamping Process to Make Tailored Properties Based on Air Cooling** Liu, P.; Wang, K.; Wang, Z.; Wang, L.; Zhu, B.; Zhang, Y.; Wang, Y. (State Key Laboratory of Materials Processing and Die and Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)	
03:00 p.m.	**Characterization of the Interface Heat Transfer Properties in the Hot Stamping Process** Chen, F.-K.; Hung, T.-H.; Tsai, P.-W.; Liu, C.-K. (Dept.of Mechanical Engineering, National Taiwan University, Taipei, TWN); Huang, T.-B. (Dept. of Mechanical and Computer Aided Engineering, St. John's University, New Taipei City, TWN); Lee, P.-K. (Iron & Steel Research & Development Dept., China Steel Corporation, Kaohsiung, TWN)	**Prediction of Thermal Softening of Hardened High Strength Steel** Wang, Z.; Wang, K.; Liu, P.; Wang, L.; Zhu, B.; Zhang, Y.; Wang, Y. (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, CHN)	

03:20 p.m.	**Refreshment Break**	
03:40 p.m.	**Cutting & Trimming** A10	**Tool Steel** B10
03:40 p.m.	**Cost Effective Trimming in Hot Stamping through the Combination of Accurate Blank Development, Hot and Laser Cutting** Koroschetz, C.; Skrikerud, M.; Jönsson, L.-O. (AP&T AB, Ulricehamn, SWE); Porzner, H.; Lorenz, D.; Hoss, M. (ESI GmbH, Neu-Isenburg, GER)	**Recent Developments in Tool Steels for Press Hardening Tools** Valls, I.; Hamasaiid, A. (Rovalma S.A., Rubí, Barcelona, ESP)
04:00 p.m.	**Combined Cutting and Local Heat Treatment with Laser Radiation of Ultra High Strength Press Hardened Steels** Vogt, S.; Schneider, F.; Weisheit, A. (Fraunhofer-Institute for Laser Technology ILT, Aachen, GER)	**The Selection of Tool Steels for Hot-Stamping Tools with Respect to Increased Loads** Rahn, R.; Schruff, I. (Kind & Co., Edelstahlwerk, Wiehl, GER)
04:20 p.m.	**Corrosion Performance of Aluminized Steel with ZnO Coating on the Surface** Agirretxe, X.; Martin, J.M.; Carranza, M. (BATZ S.Coop, Igorre (Bizkaia), ESP); Galdos, L.; Mendiguren, J. (Mondragon Unibertsitatea, Arrasate (Gipuzkoa), ESP); Casellas, D.; Hernandez, R. (Fundació CTM Centre Tecnológic, Manresa, ESP)	**Evaluation of Sheared Surface Characteristics according to Tool Steel in a Hard Cutting Process** Cha, S.; Nam, J.; Ahn, M.; Seo, P.; Won, K. (Stamping Tool Engineering, Shinyoung, Yeongcheon, KOR); Kim, B. (Pusan National Univeristy, KOR)
04:40 p.m.	**Hot-Half Trimming and Subsequent Mechanical Trimming of a Hot-Stamped Center Pillar** Kim, B.-M.; Ko, D.-C. (Pusan National University, Busan, Geumjeong-gu, KOR); Seo, P.-K.; Won, K.-W. (Shin Young Co., Ltd, Yeongcheon, Gyeongbuk, KOR)	**Role of Tool Material in the Interfacial Problematics of Tool/Blank in Press Hardening Process** Hamasaiid, A.; Valls, I. (Rovalma S.A., Rubí, Barcelona, ESP)
05:00 p.m.	**End of Day 2**	
06:00 p.m.	**CHS² Dinner**	

WEDNESDAY, June 3, 2015

	Conference Room A (200 – 250 persons) **A**	Conference Room B (150 – 200 persons) **B**
08:20 a.m.	**Coatings III*** **A11***	**Press Hardening Steel II** **B11**
08:20 a.m.	**Corrosion Performance of Aluminized Steel with ZnO Coating on The Surface** Fujita, S.; Maki, J.; Yamanaka, S.; Irikawa, H.; Kurosaki, M. (Yawata R&D Lab., Nippon Steel & Sumitomo Metal Corp., Tobihata-cho, Tobata-ku, Kitakyushu, JPN)	**Development of a 1.8 GPa Martensitic Stainless Steel for Hot Stamping Application** Badinier, G.; Santacreu, P.-O.; Mithieux, J.-D. (Aperam Research Center, Isbergues, FRA); Herbelin, J.-M. (Aperam Customer Team Auto, Isbergues, FRA)
08:40 a.m.	**The Characteristic Comparison for the Al and Zn Coated HPF Steels** Sohn, I.; Hwang, H.; Kim, H.; Cho, Y.; Kim, J. (POSCO Research Labs, Gwangyang, Jeonnam, KOR)	**A New Invention of Super Zn-coatable Press-Hardened Steel Achieving Strength of 1800MPa Combined with 18% Elongation in Hot-Stamped Parts** Yi, H.L.; Du, P. J. (RAL, Northeastern University, Shenyang, Liaoning, CHN); Wang, B.G. (Easyforming Steel Technology Co., Ltd., Chongqing, CHN)
09:00 a.m.	**Microstuctural Evolution of the 55 wt.% Al-Zn Coating during Press Hardening** Lee, C.W.; De Cooman, B.C. (GIFT / POSTECH, Pohang, KOR); Cho, Y.C. (POSCO, Gwangyang, KOR)	**Next Generation Press Hardened Steel Material for Integral Welded Body Applications** Lui, M.; Xiong, X.; Wang, J. (General Motors Company, China Science Lab, Shanghai, CHN); Shi, Y. (Pan Asia Technical Automotive Center Co., Shanghai, CHN); Belanger, P. (General Motors Company, Warren Tech Center, Warren, USA)
09:20 a.m.	**Nanoparticle Coatings: Oxidation Protection during Press Hardening** Tigges, B.; Benfer, S.; Yekehtaz, M.; Fürbeth, W. (Dechema Forschungsinstitut, Frankfurt am Main, GER); Tenié, A.; Bleck, W. (Steel Institute, RWTH Aachen University, GER)	**Challenges and Successes on Manufacturing Hot Press Hardening Steels at CSP® Mills** Sun, W.; Smiley, J. (Nucor Corporation Huger, SC, USA); Gao, N.; Liu, D. (Teck Metals Ltd., Mississauga, ON, CAN)
09:40 a.m.	**Coating Preparation for Hot Stamping Boron Steel by Pack Cementation Aluminizing** Liu, Y.; Zhu, B.; Zhang, Y. (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuan, CHN); Zhan, Q.; Yang, H.; Yuan, X. (Dept. of Reactor Engineering Research and Design, China Institute of Atomic Energy, Beijing, CHN)	**Quenching and Partitioning (Q&P) Die Quenching Processing of 30MnSiCrB6 Press Hardening Steel** Seo, E.J.; Cho, L.; De Cooman, B.C. (POSTECH, Pohang, Gyeong-buk, KOR)
10:00 a.m.	**Refreshment Break**	
10:20 a.m.	**Tailored Properties V** **A12**	**Modeling & Simulation III** **B12**
10:20 a.m.	**Hot Stamping of Tailored Component – Experiments and Numerical Analysis** Lindkvist, G; Åhlin, H.; Oldenburg, M. (Luleå University of Technology, SWE)	**Simulation of a Comprehensive Hot Forming Process and its Experimental Analyses** Stillger, M. (Adam Opel AG, Rüsselsheim, GER); Hölzemann, S. (GEDIA GmbH, Attendorn, GER); Graff, S.; Bielefeld, S.-W. (ThyssenKrupp Steel Europe AG, Dortmund, GER); Brenne, T. (AutoForm Eng. Deutschland GmbH, Dortmund, GER)
10:40 a.m.	**Press Hardening of a Martensitic Stainless Steel Sheet Alloy for Manufacturing a Side Sill Demonstrator with Tailored Properties** García, E.M.; Rautenstrauch, A.; Kräusel, V. (Technische Universität Chemnitz, Chemnitz, GER); Mosel, A.; Landgrebe, D. (Fraunhofer Institute for Machine Tools and Forming Technology IWU, Chemnitz, GER)	**Validation of Tool-Wear Simulations Based on Full-Scale Press Hardening Tests** Deng, L.; Mozgovoy, S.; Hardell, J.; Prakash, B.; Oldenburg, M. (Luleå University of Technology, SWE)



WEDNESDAY, June 3, 2015

11:00 a.m.	**New Flexible Manufacturing Concepts for Mass Production of Press Hardened Tailored Property Parts Using a Step-Chain Furnace Concept** Orth, T.; Dopler, T. (Aichelin GmbH, Mödling, AUT); Hartmann, D.; Kelsch, R. (voestalpine Polynorm GmbH & Co KG, Schwäbisch Gmünd, GER); Schütt, B. (BSN Thermprozesstechnik, Simmerath, GER)	**Optimization of Finite Element Simulation for Press Hardening Processes** Helmholz, R.; Sunderkötter, C.; Plath, A. (Volkswagen AG, Group Research, Wolfsburg, GER); Marusch, H.-E. (Volkswagen AG, Baunatal, GER); Behrens, B.-A. (Institute of Forming Technology and Machines, Leibniz University of Hanover, GER)
11:20 a.m.	**The Mechanical and Microstructural Properties of Tailored Hot Stampings due to In- Die Heating up to 700°C** Baldecik, A.; Prajogo, Y.; Worswick, M. (Dept. of Mechanical and Mechatronics Engineering, University of Waterloo, ON, CAN)	**From Concept to Virtual Reality – Virtual Hot Forming Engineering Illustrated** Porzner, H.; Lorenz, D.; Holecek, M.; Vrolijk, M.; Hoss, M.; Damenha, B.; Friberg, J. (ESI GROUP, Farmington, Michigan, USA); Koroschetz, C.; Skrikerud, M.(AP&T, Ulricehamn, SWE)
12:00 p.m.	Lunch	
01:20 p.m.	**Tribology II** A13	**Various Topics** B13
01:20 p.m.	**Adhesion Behavior of Aluminum for Aluminum-Coated 22Mnb5 Steel in Hot Stamping under Dry and Lubricated Conditions** Uda, K. (Research & Development Department, Daido Chemical Industry Co., Ltd, Yamatokohriyama, JPN); Azushima, A.: (Dept. of Mechanical Engineering, Graduate School of Engineering, Yokohama, National University, Yokohama, JPN)	**Nondestructive Testing of Material Properties and Defects in Cold and Hot Stamped Parts** Conrad, C.; Wolter, B.; Kern, R.; Lambert, T.; Haas, A.; Müller, T.; Niese, F.; Bastuck, M. (Fraunhofer Institute for Nondestructive Testing – IZFP, Saarbrücken, GER)
01:40 p.m.	**Simulative High Temperature Friction and Wear Studies for Press Hardening Applications** Mozgovoy, S.; Hardell, J.; Oldenburg, M.; Prakash, B. (Division of Machine Elements, Luleå University of Technology, SWE); Deng, L. (Division of Mechanics of Solid Materials, Luleå University of Technology, SWE)	**Magnet Pulse Welding – A review on joining of aluminum and high-performance steel** Rebensdorf, A.; Böhm, S. (Dept. for Cutting and Joining (tff), Institute for Production Technologies and Logistics (IPL), University of Kassel, GER)
02:00 p.m.	**Validation of Tool-Wear Simulations Based on Full-Scale Press Hardening Tests** Deng, L.; Mozgovoy, S.; Hardell, J.; Prakash, B.; Oldenburg, M. (Luleå University of Technology, SWE)	**N.N.** N.N.
02:30 p.m.	Closing Session	

* Joint sessions with Galvatech (A2, A6, A11)