



CHS² – 2019

7th International Conference on
**HOT SHEET METAL FORMING
OF HIGH-PERFORMANCE STEEL**

June 2nd to 5th, Luleå, Sweden

PRELIMINARY PROGRAM



TOWARDS NEW FRONTIERS IN RESEARCH, NETWORKING AND INNOVATION

The area of hot sheet metal forming of high-performance steel, and high-performance materials in general, is in a phase of accelerated development and the industrial and research community within this field is growing all over the world. Since the innovation in Sweden in the 1970s, press hardening of ultra-high strength steels has become a global technology. The driving forces for this fast development, with focus on the automotive sector, are concern for the environment and passenger safety. Press hardening and related thermo-mechanical processes represent technologies with outstanding potential to meet global environmental challenges as well as the safety challenges within the transportation sector. What did start as a niche technology has developed into a globally dominating automotive light-

weight design strategy. However, inspired by the continuing success of the press hardening technology, researchers are looking for the next generation of materials for utilization in light-weight structures. Solutions with new materials for press hardening, new hot forming technologies of light-weight and high-performance materials as well as processes for hybrid materials such as steels and carbon fiber reinforced polymer composites are in the pipe-line.

To fully support this potential of hot forming technologies, further innovations are essential. Research and Development both on academic as well as on industrial level is one of the most important prerequisites for continuing innovation.

ORGANIZING COMMITTEE

Prof. Mats Oldenburg

Luleå University of Technology, SWE

Dr. Jens Hardell

Luleå University of Technology, SWE

Prof. Daniel Casellas

Eurecat, ESP / Luleå University of Technology, SWE

Brian Bliss

Association for Iron and Steel Technology (AIST), USA

The arrangement of the CHS² conferences series has established a worldwide unique competence network. The conferences have been held in both Europe and North-America with the aim to meet future challenges in materials utilization by the promotion of hot sheet metal forming technologies.

The biannual CHS² conference series has after six very successful conferences since 2008 grown into the leading platform for scientific exchange in hot forming technologies. The CHS² conference undoubtedly constitutes the most important event for the international scientific community in the field.

Consequently, for the 7th International Conference on Hot Sheet Metal Forming of High-Performance Steel CHS² 2019 specialists from all over the world are invited to join this unique opportunity for knowledge exchange and to benefit from each other's experience and expertise. Topics like tailored properties, microstructure, mixed materials, performance of new materials and products, new surface coatings and new steels for press hardening as well as pertinent tribological aspects will be in focus in the same way as thermal processing, monitoring, modeling, simulation and, of course, new innovations and design principles for components.



Mats Oldenburg

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ABSTRACT AND PAPER SUBMISSION

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

ORGANIZATIONAL TASKS

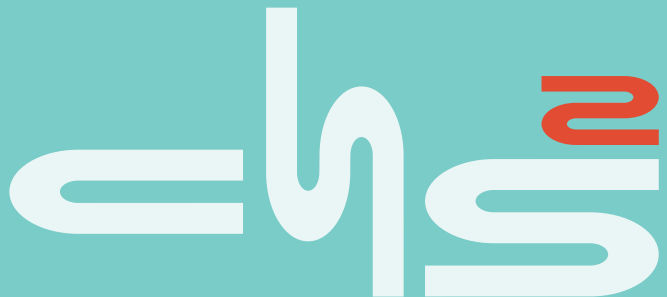
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ORGANIZED BY

Luleå University of Technology



REGISTRATION

The Registration for the 7th International Conference on Hot Sheet Metal Forming of High-Performance Steel – CHS² 2019 is open now!

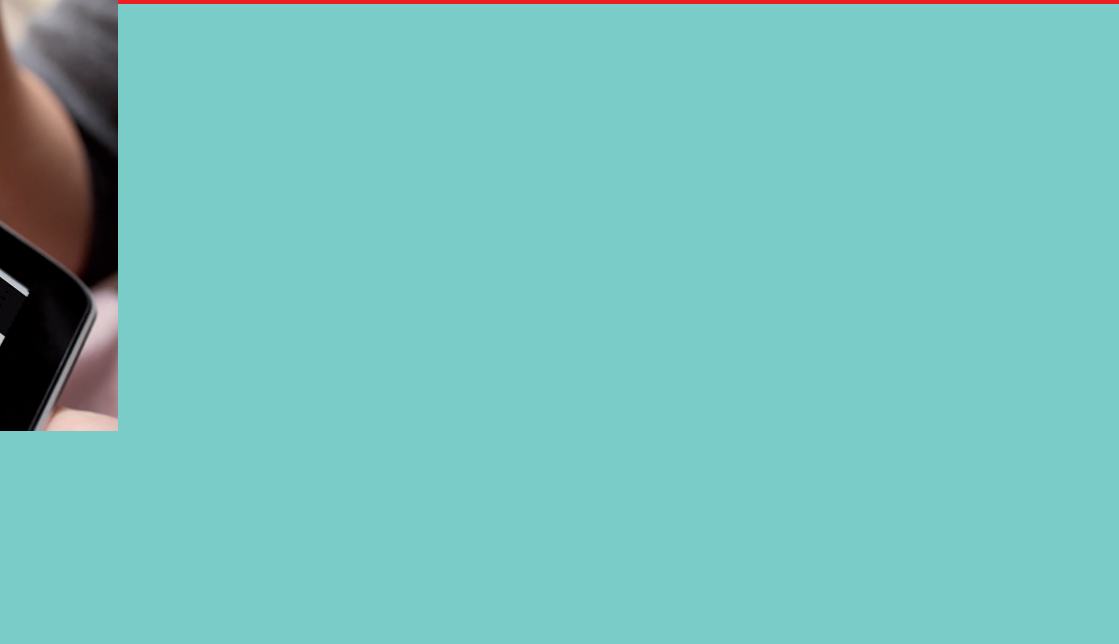
Online-registration: www.chs2.eu



www.CHS2.eu

COOPERATION

CHS² 2019 is be organized by Luleå University of Technology in cooperation with the research institute Eurecat, Barcelona, Spain, as well as with the Association for Iron & Steel Technology (AIST), USA



VENUE 2019

Luleå, Sweden

For the third time, the CHS² conference will be held where the press hardening technology was invented and industrialized.

CHS² 2019 will be arranged in Luleå, Sweden,
2nd – 5th June 2019, at the House of Culture.

House of Culture / Kulturens Hus / Luleå, Sweden



PROGRAM OVERVIEW

June 2nd, 2019, 18:00 – 21:00: Reception and pre-registration

June 3rd – 5th, 2019: Conference

Monday 3 rd June	
08:00 – 08:30	Conference Registration
08:30 – 17:20	Conference Sessions
19:30	Dinner Cruise
Tuesday 4 th June	
08:40 – 17:20	Conference Sessions
19:00	CHS ² Dinner at House of Culture / Kulturens Hus
Wednesday 5 th June	
08:40 – 12:00	Conference Sessions



House of Culture, Luleå, Sweden

MONDAY, June 3, 2019

08:00	Conference Registration	
	Conference Room A (Stora salen)	
08:30	Opening Prof. Mats Oldenburg, Luleå University of Technology; Assoc. Prof. Jens Hardell, Luleå University of Technology; Prof. Daniel Casellas, Luleå University of Technology	
08:40	Welcome Representative from Luleå Municipality	
	Conference Room A (Stora salen)	A
	Conference Room B (Lilla salen)	B
09:00	Heating Technology I	A1
		B1
09:00	The Quenching and Partitioning (Q&P) Treatments for Press Hardening Yannik Sparrer, Adrian Rüskamp, Alexander Tenié, Junhe Lian, Sebastian Münstermann, Wolfgang Bleck (Steel Institute, RWTH Aachen University, Aachen, GER)	Failure Modelling and Experimental Evaluation of a Press-Hardened Laboratory Scale Component with Multi-Phase Microstructure Stefan Marth, Stefan Golling, Rickard Östlund, Anna Barrero Pijoan, Hans-Åke Häggblad, Mats Oldenburg (Luleå University of Technology, Luleå, SWE)
09:20	Rolling Beam Furnace for Press Hardening Diego Angulo, Jose Berasategui, Ángel Saez (GHI Smart Furnaces, Galdakao Bizkaia ESP)	Dynamic Axial Crush Response of Ductibor® 1000-AS-Effect of Fold Initiator Pattern on Performance Suh Ho Lee, Cale Peister, Armin Abedini, Jose Imbert, Cliff Butcher, Michael Worswick, Ron Soldaat, Willie Bernert, Eric Famchon, Pavlo Penner, Cyrus Yau, Skye Malcolm, Jim Dykeman (University of Waterloo, Waterloo, CAN)



Photo by Lena Nilsson

MONDAY, June 3, 2019

09:40	Research on Influence of Direct Contact Heating Process on Mechanical Properties of High Strength Aluminum Alloy Sheets Yilin Wang, Huicheng Geng, Shiqi Li, Yisheng Zhang, Zijian Wang (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)	Fully Coupled Electro-Thermo-Mechanical-Metallurgical Numerical Simulation of 22MnB5 to Explore the Direct Resistance Heating Method Implications Fernando Okigami, Debora Faro, Rodrigo Coelho, Daniel Ximenes, Jose Eduardo Carvalho (SENAI CIMATEC, Salvador, BRA)
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10:00	Refreshment Break	
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	Conference Room A (Stora salen)	A	Conference Room B (Lilla salen)	B
10:40	Parts & Process I	A2	Materials & Metallurgy I	B2
10:40	Effective Implementation of Hot Cutting of 22MnB5 During Press Hardening: Tooling Performance and Part Properties Xabier Agirretxe, Ines Aseguinolaza, Daniel Casellas, Montserrat Vilaseca, Abraham Avalos, Sergi Parareda, Eduard García, Jaume Pujante, Marc Martínez, Núria Cuadrado, Giselle Ramírez (BATZ, Igorre, ESP)		Small-scale Indentation Plasticity of a Highbendability Martensitic Steel Byung-Gil Yoo, Guang-Hui Yang, Hyoung Hyup Do, Sung Yul Huh, Jae-il Jang, Seong Ju Kim (Hyundai Steel, Dangjin, KOR)	
11:00	A Press Hardening Process for Multi-material Components Lars Wikström, Stefan Golling (Gestamp BIW R&D, Luleå, SWE)		Fracture Toughness Evaluation of Thick Press Hardened 22MnB5 Sheets for High Crash Performance Applications in Trucks David Frómata, Sergi Parareda, Antoni Lara, Daniel Casellas, Jaume Pujante, Pär Jonsén, Stefan Golling, Henrik Sieurin, Mats Oldenburg (Eurecat, Centre Tecnològic de Catalunya, Unit of Metallic and Ceramic Materials, Manresa, ESP)	

MONDAY, June 3, 2019

11:20	Adhesive Bonding of Direct Hot Formed Zn-coated PHS Martin Rosner, Ernst Schachinger, Thomas Manzenreiter (Voestalpine Stahl GmbH, 4020 Linz, AUT)	A New Low Density Press Hardening Steel with Superior Performance Jiachen Pang, Qi Lu, Jianfeng Wang, Charles Enloe, Guodong Wang, Hongliang Yi (China Science Lab, General Motors Global Research and Development, Shanghai, CHN)
11:40	Enhanced Process Limits in the Granular Media-based Tube Forming through Axial Feeding Eike Hoffmann, Mike Kamaliev, Christian Löbke, A. Erman Tekkaya (Institute of Forming Technology and Lightweight Components, Dortmund, GER)	Method for Material Characterization of Edgeforming Behaviour at Elevated Temperature Christina Sunderkötter, Tim-Patrick Post, Alejandro Javier Guirao Blank, Iñaki Pérez, Maribel Arribas, Iñigo Aranguren, Ángela Mangas, Radhakanta Rana, Chris Lahaije, Daniele De Caro (Volkswagen AG, Wolfsburg, GER)
12:00	Lunch	





MONDAY, June 3, 2019

13:00	High-Temperature Tribology and Coatings I	A3	Failure Mechanisms	B3
13:00	Influence of Surface Roughness of Thermal-spray Coatings on Friction and Wear in Hot Stamping Applications Leonardo Pelcastre, Jens Hardell, Irma Heikkilä, Braham Prakash (Luleå University of Technology, Luleå, SWE)		Hydrogen Embrittlement Resistance of AISi coated 1.8GPa Press Hardened Steel (PHS) Solutions for Body-in-White (BIW) Applications Sebastian Cobo, Thierry Sturel, Anis Aouafi, Christian Alelly, Dominique Cornette (ArcelorMittal Research Maizieres, Maizières-Lès-Metz, FRA)	
13:20	Study of Wear in Press Hardening Using a Pilot Facility Jaume Pujante, Eduard Garcia-Llomas, Daniel Casellas (Eurecat, Centre Tecnològic de Catalunya, ESP)		Hydrogen Induced Delayed Fracture in Hot Stamped Al-Si Coated Boron Steels Renzo Valentini, Michele Maria Tedesco, Linda Bacchi, Serena Corsinovi, Daniele De Caro (Department of Chemical Engineering, Pisa University, Pisa, ITA)	
13:40	Process Window for Patchwork Blanks Regarding Thickness, Friction and Heat Transfer Alper Güner, Thomas Brenne, Dave Ling (AutoForm Engineering, Dortmund, GER)		Fatigue of Press Hardened Steels: Drawbacks and Challenges to Unlock the Lightweight Potential of Press Hardening Technology for Heavy Duty Vehicles Daniel Casellas, Henrik Sieurin, Christina Sunderkoetter, Sergi Parareda, Antoni Lara (Eurecat, Centre Tecnològic de Catalunya, Manresa, ESP)	
14:00	High Temperature Lubrication in Hot Sheet Metal Forming of Al-Si Coated Boron Steel Jens Hardell, Stéphane Archer, Leonardo Pelcastre (Luleå University of Technology, Luleå, SWE)		Understanding and Predicting the Fatigue Resistance of Press Hardened 22MnB5 Daniel Casellas, Sergi Parareda, David Frómata, Marc Martínez, Antoni Lara, Jaume Pujante (Eurecat, Centre Tecnològic de Catalunya, ESP)	
14:20	Refreshment Break			

MONDAY, June 3, 2019

14:40	Light Metals I	A4	Process Monitoring I	B4
14:40	<p>Hot Forming of Aluminum AA6016, Simulation Driven Product Development on the Example of an Inner Door Panel Lars Sandberg, Greger Bergman, Stefan Golling, Daniel Palo (Gestamp R&D, Luleå, SWE)</p>		<p>Process monitoring of a tailored welded B-pillar at Renault and correlation between forming analysis and simulation results for different process parameters Stéphane Graff, Chengkai Pan, Julie Lacues, Fabian Botz (thyssenkrupp Steel Europe AG, Dortmund, GER)</p>	
15:00	<p>Research on Thermal Ductile Fracture Criterion of 7075 Aluminum Alloy Zijian Wang, Wei Huang, Bin Zhu, Shiqi Li, Yisheng Zhang (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)</p>		<p>Process Monitoring And Smart Data Analytics For Hot Stamping Lines Robert Vollmer, Christian Palm, Jens Aspacher (Schuler Pressen GmbH, Göppingen, GER)</p>	
15:20	<p>Potentialities of Process Cycle Time Reductions at Hot Stamping of Aluminum Alloys Emad Scharifi, Florian Erbskorn, Agim Ademaj, Zeynep Burcu Kavaklioglu, Ursula Weidig, Kurt Steinhoff (Metal Forming Technology, University of Kassel, Kassel, GER)</p>		<p>Newest Developments in Thermographic Process Monitoring in Accordance with CQI-9 Norm in Press Hardening Steffen Sturm (InfraTec, Dresden, GER)</p>	
15:40	Break			



Photo by Joakim Höggren

MONDAY, June 3, 2019

16:00	Materials & Metallurgy II	A5	Modelling & Simulation II	B5
16:00	<p>Investigation of the Quenching Behavior of Carburized Sheet Metal in Hot Stamping Alexander Horn, Marion Merklein (Institute of Manufacturing Technology, Friedrich-Alexander-Universität Erlangen-Nürnberg, GER)</p>		<p>Modeling of Ultra High Strength Steel Sandwiches with Lightweight Cores Samuel Hammarberg, Jörgen Kajberg, Pär Jonsén (Mechanics of Solid Materials, Luleå University of Technology, Luleå, SWE)</p>	
16:20	<p>Microstructural Mechanisms Affecting Fracture Resistance of Martensitic Press Hardened Steel Alloys Kip Findley, Shane Kennett, Lindsay Golem, Lawrence Cho, John Speer (Colorado School of Mines, Golden, USA)</p>		<p>Study on the Delayed Fracture by Using the Finite Element Analysis Based on the Hydrogen Uptake Model Je Youl Kong, Seung Chae Yoon, Gi Hak Yim, Hye Jin Kim, Byung Youl Min, Yu dong Jung (Hyundai-Steel, Steel Application Engineering Group, Dangjin-Si, KOR)</p>	
16:40	<p>Design and Potential Analysis of a New Ultra High-strength Steel (1900MPa) with Q&P Processes for Car Body Applications Ansgar Hatscher (Volkswagen AG, Group Research, Wolfsburg, GER)</p>		<p>Development of Models for Resistance Spot Weld Failure Simulation on Advanced High Strength Steel Sheets Based on an Energetic Fracture Criterion Daniel Dorribo, Xabier Larráyoz-Izcara, Lars Greve, Irene Arias (SEAT S.A., Barcelona, ESP)</p>	
17:00	<p>Material Development and Qualification of Manufacturing Technology for Hot Stamping of Heavy Gage Components Hardy Mohrbacher, Diego Tolotti de Almeida, João Henrique Corrêa de Souza (NiobelCon, Schilde, BEL)</p>		<p>Simulation and Experimental Research of Hot Stamping and Q & P Heat Treatment Combined Process Bin Zhu, Zijian Wang, Kai Wang, Yong Liu, Yisheng Zhang (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)</p>	
17:20	End of Day 1			
19:30	Dinner Cruise			

TUESDAY, June 4, 2019

TUESDAY, June 4, 2019

	Conference Room A (Stora salen) A	Conference Room B (Lilla salen) B
08:40	High-Temperature Tribology and Coatings II A6	Joining & Welding B6
08:40	<p>Small Change, Substantial Effect – a New Aluminosilicon Coating for a Reliable Hot Forming Process</p> <p>Manuela Ruthenberg, Janko Banik, Maria Köyer, Sebastian Stille (thyssenkrupp Steel Europe AG, Dortmund, GER)</p>	<p>Spot Weld Strength Improvement by Optimization of the Welding Parameters on 1.8 GPa Press Hardened Steels</p> <p>Laurent Cretteur, Yohan Merdji, Christine Kaczynski (ArcelorMittal Research Montataire, Montataire, FRA)</p>
09:00	<p>Tribological Performance of Localized Dispersed X38CrMoV5-3 Surfaces for Hot Stamping of Al-Si Coated 22MnB5 Sheets</p> <p>Stephan Schirdewahn, Felix Spranger, Kai Hilgenberg, Marion Merklein (Institute of Manufacturing Technology, Egerlandstr. 13, 91058 Erlangen, GER)</p>	<p>Influence of Press-hardening Process on Resistance Spot Weldability of 22MnB5 with Aluminum-silicon Coating in a Three-sheet Stack-up for Automotive Applications</p> <p>Oleksii Sherepenko, Yupeng Luo, Vincent Schreiber, Maximilian Wohner, Niels Mitzschke, Matthias Kuhlmann, Sven Jüttner (Otto-von-Guericke University, Magdeburg, GER)</p>
09:20	<p>Tribological Behaviour of Pvd Coated Tool Steels in Hot Forming of Aluminium Alloys</p> <p>Justine Decrozant-Triquenaux, Leonardo Pelcastre, Cédric Courbon, Braham Prakash, Jens Hardell (Luleå University of Technology, Luleå, SWE)</p>	<p>Improvements in Laser Processing of Door Rings with Laser Machines</p> <p>Axel Frey, Ralf Kohlloeffel, Daniel Minh Maier, Michael Fritz (TRUMPF Laser und Systemtechnik GmbH, Ditzingen, GER)</p>



TUESDAY, June 4, 2019

<p>09:40</p>	<p>Tribological Aspects in Hot Stamping of Ultra-high Strength Steels Leonardo Pelcastre, Jens Hardell, Braham Prakash (Luleå University of Technology, Luleå, SWE)</p>	<p>Investigation of Resistance Spot Weld Failure under Shear Loading in Die Quenched UHSS Assemblies Cameron Tolton, C O’Keeffe, Michael Worswick, Pavlo Penner, Cyrus Yau, Skye Malcolm, Jim Dykeman, Ron Soldaat, Willie Bernert (University of Waterloo, Waterloo, ON, CAN)</p>		
<p>10:00 Refreshment Break</p>				
<p>10:40</p>	<p>Parts & Process II</p>	<p>A7</p>	<p>Materials & Metallurgy III</p>	<p>B7</p>
<p>10:40</p>	<p>Press Hardening Integrated Structuring for Hybrid Components Marcel Triebus, Sebastian Bienia, Thorsten Marten, Thomas Tröster, Klaus Dröder (Paderborn University, Paderborn, GER)</p>	<p>New Stainless Steels for Press Hardening with Improved Fatigue Behaviour Daniel Casellas, Sergi Parareda, Antoni Lara, Manon Abecassis, Jesse Paegle, Pierre-Olivier Santacreu (Eurecat, Centre Tecnològic de Catalunya, Unit of Metallic and Ceramic Materials, Manresa, ESP)</p>		
<p>11:00</p>	<p>Development of STAF (Steel Tube Air Forming) Process Masayuki Ishizuka, Kimihiro Nogiwa, Akihiro Ide, Hiroyuki Kan, Norieda Ueno (Sumitomo Heavy Industries, Ltd., Niihama, JPN)</p>	<p>The Use of Press-hardening Technology on Advanced High-strength Steels Hana Jirková, Kateřina Opatová, Štěpán Jeníček, Ludmila Kučerová, Enrique Meza-Garcia (University of West Bohemia, Regional Technological Institute, Pilsen, CZE)</p>		
<p>11:20</p>	<p>A Novel Apparatus for 22MnB5 Hot Tube Bending Enrico Simonetto, Andrea Ghiotti, Stefania Bruschi (University of Padua, Padova, ITA)</p>	<p>Effect of the Deformation Temperature in the Bainitic Transformation During Ausforming Treatments Adriana Eres-Castellanos, Francisca G. Caballero, Carlos Garcia-Mateo (Department of Physical Metallurgy, National Center for Metallurgical Research (CENIM-CSIC), ESP)</p>		

TUESDAY, June 4, 2019

11:40	Hot Stamping of 1800-2000 MPa Steels Katarina Eriksson, Simon Lindgren, Per Muskos (Gestamp BIW R&D, Luleå, SWE)	Corrosion Characteristics of Zinc Coated Steel for the Press Hardening Process Jin-Ho Rhee, Sun-Ah Park, Hyun-Yeong Jung, Je-Youl Kong, Tae-Woo Kwon (HYUNDAI STEEL, Dangjin, KOR)
12:00	Lunch	
13:00	Materials & Metallurgy IV	High-Temperature Tribology and Coatings III
13:00	Effect of Corrosion Products of Aluminized Steel for Hot Stamping on Corrosion Protection Yuki Suzuki, Soshi Fujita, Masahiro Fuda (Yawata R&D Lab., Nippon Steel Sumitomo Metal Corporation, JPN)	Interest of AISiZnMg Hot Dip Coatings for Press Hardened Steels Tiago Machado Amorim, Pascale Feltin, Christian Allely, Laurence Dosdat, Raisa Grigorieva G. Leuillier (ArcelorMittal Global R&D, Maizières les Metz, FRA)
13:20	Technological and Thermomechanical Characterization of Newly Developed 1800 PHS and 2000 PHS Press Hardening Steels Enrique Meza García, Jessica Calvo, Kateřina Opatová, Hana Jirková, Verena Kräusel, Daniel Casellas (Chemnitz University of Technology, Professorship for Forming and Joining, Chemnitz, GER)	The Study on the Corrosion of 22MnB5 Hot-Forming Parts Jian An, Hanjie Chen, Dongcheng Li (Suzhou Pressler Advanced Forming Technology Inc., SuZou, CHN)
13:40	Effect of Experimental Setup and Microstructure Features on Bending Performance of Press Hardening Steels Chun Liu, Jiachen Pang, Wei Xu, Hongliang Yi, Qi Lu, Jeff Wang (Northeastern University, Shenyang, CHN)	Extended Aluminum-silicon Coating Concept with Improved Properties for Existing Hot Forming Applications Friedrich Luther, Haucke Hartmann, Marc Debeaux, Christian Fritzsche Oliver Strauß, Matthias Graul, Kevin Krüger, Jan Laß, Stefan Mütze, Thomas Koll (Salzgitter Mannesmann Forschung GmbH, Salzgitter, GER)



Photo by Lena Nilsson

TUESDAY, June 4, 2019

<p>14:00</p>	<p>The Determination of the Fracture Behavior of the Different Microstructures of Ductibor® 500-AS Steel Pedram Samadian, Clifford Butcher, Michael J. Worswick (University of Waterloo, Waterloo, CAN)</p>	<p>Influence of Heating Time on Oxidation Morphology and Cracking Characteristics of Galvannealed Coating in Hot Stamping Kai Wang, Shiqi Li, Liang Wang, Yisheng Zhang, Bin Zhu (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)</p>
<p>14:20 Refreshment Break</p>		
<p>14:40</p>	<p>Heating Technology II</p>	<p>Materials & Metallurgy V</p>
<p>14:40</p>	<p>Heat Treatment System for Thermal Printing Provides Partial Quenching and Tempering in the Press Hardening Process Harald Lehmann, Ulrich Etzold (Schwartz Company, Simmerath, GER)</p>	<p>The Effects of Non-isothermal Plastic Deformation on the Martensitic Transformation of 1.8GPa Press Hardening Steel and the Implications Toward Production Paths Constantin Chiriac, George Luckey, Maik Broda (Ford Motor Company, Dearborn, USA)</p>
<p>15:00</p>	<p>Furnace Design Preventing Hydrogen-Induced Cracking Tianlong Chen, Rongxia Chai (Cencera Corporation, Haining, CHN)</p>	<p>Improvement of Hydrogen Embrittlement Resistance of Press-Hardening Steels Manuel Maikranz-Valentin, Georgi Genchev, Djordje Mirković (Salzgitter Mannesmann Forschung GmbH, Salzgitter, GER)</p>
<p>15:20</p>	<p>Investigation on Inductive Heating of Sheet Metal for an Industrial Hot Stamping Process Florian Pfeifer, André Dietrich, Thorsten Marten, Thomas Tröster, Bernard Nacke (Paderborn University, Paderborn, GER)</p>	<p>Hot-Formability and Mechanical Behaviour of a Tungsten-Containing Low-Carbon Complex-Phase Steel Radhakanta Rana, Theo Kop (Tata Steel, IJmuiden, NLD)</p>
<p>15:40 Break</p>		

TUESDAY, June 4, 2019

16:00	Modelling & Simulation III	A10	Parts & Process II	B10
16:20	<p>A Multi-scale Friction Model for Hot Stamping</p> <p>Jenny Venema, Javad Hazrati, David Matthews, Eisso Atzema, Ton van den Boogaard (Tata Steel, Research & Development, IJmuiden, NLD)</p>		<p>On Tailored-properties Parts with Quenched and Tempered Rollformed Automotive Components</p> <p>Christian Rouet, Roland Dallinger, Christoph Wagner, Thomas Kurz (voestalpine Stahl GmbH, Linz, AUT)</p>	
16:40	<p>Sub-Critical Quenching of an 1800 MPa Grade of Press Hardening Steel: Experiments and Model Validation</p> <p>Claire Bourque, Alexander Bardelcik, Mary Wells (University of Guelph, Guelph, CAN)</p>		<p>Development of a Tailor Welded Hot Stamped Side Frame Member</p> <p>Matthew Tummers, Cale Peister, José Imbert, Michael J. Worswick, Skye Malcolm, Jim Dykeman, Cyrus Yau, Ron Soldaat, Willie Bernert (University of Waterloo, Waterloo, CAN)</p>	
17:00	<p>A Novel Method for Modelling of Cold Cutting of Microstructurally Tailored Hot Formed Components</p> <p>Pär Jonsén, Andreas Svanberg, Giselle Ramirez, Daniel Casellas, Ricardo Hernández, Stefan Marth, Hans-Åke Häggblad, Mats Oldenburg (Division of Mechanics of Solid Materials, Luleå University of Technology, Luleå, SWE)</p>		<p>Development of Selective Cooling Approach to Generate Easy-to-cut-zones for Hot Formed Lightweight Automotive Components</p> <p>Imren Ozturk Yilmaz, Onur Saray (Beycelik Gestamp Otomotiv Sanayi A. S., Bursa, TUR)</p>	
17:20	End of Day 2			
19:00	CHS² Dinner at Kulturens Hus			

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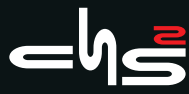
WEDNESDAY, June 5, 2019

WEDNESDAY, June 5, 2019

	Conference Room A (Stora salen) A	Conference Room B (Lilla salen) B
08:40	Parts & Process III A11	Materials & Metallurgy VI B11
08:40	Method for Characterizing Functional Graded Properties of 22MnB5 Emad Scharifi, Thomas Schade, Agim Ademaj, Ursula Weidig, Kurt Steinhoff (Metal Forming Technology, University of Kassel, Kassel, GER)	Mechanical Behavior of New Press Hardening Steels at Elevated Temperatures and Technological Modeling of their Processing Kateřina Opatová, Hana Jirková, Enrique Meza-García, Štěpán Jeníček, Jiří Vrtáček (University of West Bohemia, Pilsen, CZE)
09:00	Press hardened B-pillar with CFRP Patch, Simulation & Crash Test Rickard Östlund, Kristian Hedström (Gestamp BIW R&D, Luleå, SWE)	Application of Quenching and Partitioning Processes to Welding and Press Hardening Farnoosh Forouzan, Esa Vuorinen, Mats Oldenburg, Hans-Åke Häggblad (Luleå University of Technology, Luleå, SWE)
09:20	Developments for a Reduced Total Cost of Ownership Wolfgang Touschek, Hans-Ulrich Dorst, Jan-Phillip Schmiing (Eisenmann Thermal Solutions GmbH & Co. KG, Böblingen, GER)	Loading Rate Effects on Apparent Bendability of 1.8 GPa PHS Naveen Ramiseti, Jeff Wang, C. Matthew Enloe, Qi Lu, Luke Reini (ArcelorMittal Global R&D, USA)
09:40	Effect of Contact Pressure in die Quenching on Strength of Hot-stamped Parts Naotaka Nakamura, Ken-ichiro Mori, Yuki Nakagawa, Takahiro Miyachi (Toyohashi University of Technology, Toyohashi, JPN)	BTR2000 – A New Uncoated Ultra-High Strength Hot Forming Steel Martin Joachim Holzweissig, Georg Frost, Karsten Bake, Andreas Frehn (BENTELER Automotive, Paderborn, GER)
10:00	Refreshment Break	



10:40	Process Monitoring II	A12	Light Metals II	B12
10:40	Intelligent Process Optimization for Highly Efficient Productions Fritz Ebner (Meprotec GmbH, Marchtrenk, GER)	A Feasibility Study on High Efficiency Hot Stamping of 7075 Aluminum Alloy Sheet Yong Liu, Liang Wang, Shiqi Li, Yisheng Zhang, Yilin Wang (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)		
11:00	Long-period Intelligent Control in Hot Stamping Production Liang Wang, Kai Wang, Shiqi Li, Xingyun An, Yisheng Zhang, Bin Zhu (State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, CHN)	Application of HFQ® Technology to Form BPillar Panel from High Strength AA7075 Aluminum Sheet Mohamed Mohamed, Damian Szegda, Federico Melotti, Patrick Sailard, Francis Adzima, Mustapha Ziane (Impression Technologies Ltd, Coventry, UK)		
11:20	Industry 4.0 Implementation in Gestamp Press Hardening Technology – Process Control and Performance Improvement Beatriz González, Diego Vidal (Gestamp, North Europe Division, GER)			
11:40	Closing Session			



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