



**CHS<sup>2</sup>-2019**

**7<sup>th</sup> International Conference on  
HOT SHEET METAL FORMING  
OF HIGH-PERFORMANCE STEEL**

June 2<sup>nd</sup> to 5<sup>th</sup> Luleå, Sweden



# 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 started 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.

The strategic cooperation between Luleå University of Technology (Sweden) and University of Kassel (Germany) have by the arrangement of the CHS<sup>2</sup> conferences series 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.

## CONFERENCE SERIES AND SCOPE

The biannual CHS<sup>2</sup> conference series has after six very successful conferences since 2008 grown into the leading platform for scientific exchange in hot forming technologies. The CHS<sup>2</sup> conference undoubtedly constitutes the most important event for the international scientific community in the field.

Consequently, for the 7<sup>th</sup> International Conference on Hot Sheet Metal Forming of High-Performance Steel CHS<sup>2</sup> 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.

## VENUE 2019

For the third time, the CHS<sup>2</sup> conference will be held where the press hardening technology was invented and industrialized. CHS<sup>2</sup> 2019 will be arranged in Luleå, Sweden, 2<sup>nd</sup> – 5<sup>th</sup> June 2019, at the House of Culture.

CHS<sup>2</sup> 2019 will be organized in cooperation with the Association for Iron & Steel Technology (AIST), as well as with the research institute CTM-Eurecat, Barcelona, Spain.

**House of Culture / Kulturens Hus / Luleå, Sweden**

**June 2<sup>nd</sup>, 2019:** Reception and pre-registration

**June 3<sup>rd</sup> – 5<sup>th</sup>, 2019:** Conference



House of Culture, Luleå, Sweden | Photo by Lena Nilsson

# CONFERENCE TOPICS

## Material

- High-performance steels
- Light-weight and high performance materials
- Mixed material processes and solutions
- Tool steels
- Microstructural properties
- Surface design and coatings

## Modeling and Simulation

- Process modeling
- Microstructure
- Heat transfer
- Thermo-mechanical properties
- Friction and wear
- Component properties
- Deformation, fracture and fatigue

## Process Design

- Tool systems
- Heating and cooling strategies
- Automation and control
- Process monitoring

## Products

- Light-weight automotive components
- Product innovations and optimization
- Tailored material properties
- Cutting and joining technologies
- Applications and performance
- Design and tests



2<sup>nd</sup> International Conference in Luleå, Sweden

## CALL FOR PAPERS

All contributions on the theme of the conference are welcome. Prospective authors are invited to submit their abstracts by uploading these to the conference paper submission system (see instructions below). The full papers will be reviewed by the members of the scientific advisory board and, if accepted, will be published in the conference proceedings.

The organizing committee encourage high scientific quality conference papers to be published in international journals after the conference.

## ABSTRACT SUBMISSION GUIDELINE

For submission of abstracts, please register to the conference paper submission system and upload your abstract in accordance to the abstract submission guideline:

[www.chs2.eu](http://www.chs2.eu)

- Abstract text: maximum 400 words
- Language: English
- The abstract submission include
  - > title of paper
  - > presenting author
  - > co-authors
  - > affiliations
  - > abstract text including keywords and references



## IMPORTANT DATES

<b>Abstract submission:</b>	October 15 <sup>th</sup> , 2018
<b>Full paper submission:</b>	February 15 <sup>th</sup> , 2019
<b>Revised paper submission:</b>	April 11 <sup>th</sup> , 2019
<b>Conference:</b>	June 2 <sup>nd</sup> to 5 <sup>th</sup> , 2019



Gammelstad & Norra Hamn, Luleå, Sweden | Photo by Lena Nilsson



2<sup>nd</sup> International Conference in Luleå, Sweden

## ORGANIZING COMMITTEE

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- **Dr. Jens Hardell**  
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- **Prof. Daniel Casellas**  
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**Updated information can be found on the  
conference homepage [www.chs2.eu](http://www.chs2.eu)**



## SCIENTIFIC ADVISORY BOARD

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