

MATERIALS IN CAR BODY ENGINEERING 2019

Steels, light metals, fibre reinforced plastics –
in search of the optimal lightweight material mix

14 – 15 MAY 2019

BAD NAUHEIM, GERMANY

CAR BODY ENGINEERING

6 OEM
PRESENTATIONS BY

Audi, BMW, Daimler,
Ford, Centro
Ricerca Fiat,
Toyota



IT'S ALL IN THE MIX

Efficient lightweight design remains one of the most important topics in the field of car body engineering. What impact does electrification have on lightweight design? What new challenges will arise from this? And what are the latest solutions?

“The right material in the right place” not only requires further optimisation of the developments and achievements of lightweight design so far, but also further development of materials, improving their properties and using new materials. Furthermore, it is necessary to combine these in a sophisticated way, as well as developing concepts and ways of material circulation to advance targeted recycling to produce not only cost but also resource-efficiently.

Discuss these and other topics with international experts at the annual conference „**Materials in Car Body Engineering**“ from 14 – 15 May 2019 in Bad Nauheim. Get to know the latest projects and developments presented by OEM, suppliers and research institutes in the field of body materials.



The international OEM Advisory Board and I look forward to welcome you to the conference.

A handwritten signature in black ink that reads "Sabine Scharf". The signature is written in a cursive, flowing style.

Sabine Scharf
Presidium
Automotive Circle, DE



THE CONFERENCE ADDRESSES:

Automotive car body engineers from international OEM, with a responsibility for material-related projects, in pre-development, development, planning and production, as well as their system suppliers and engineering service providers.

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**MEET THE
LEADING OEM
NETWORK**

TUTORIALS

MONDAY, 13 MAY 2019

The Tutorials will be held in English and have to be booked separately from the conference.

STEEL IN CAR BODY ENGINEERING

9.00 UNTIL 18.00 h

Our full-day pre-conference tutorial on Steel in Car Body Engineering offers you an ideal opportunity to freshen up your knowledge on the most complex and most widely used car body material: Modern steel materials. The tutorial updates you on the current state of developments regarding the most important steel classes, on their peculiarities as well as their typical application in the car body. In this way, it provides you with an ideal preparation for the high-level discussions of the main conference.

- Modern steel grades and alloys in car body applications: What are typical use cases and why?
- State of the art in the development of high and ultra-high strength car body steels as well as press hardened steels
- Quality control and corrosion protection
- Failure mechanisms – and how to avoid them

YOUR TUTOR



Prof. Dr. Hardy Mohrbacher

is founder and owner of Niobelcon b.v.b.a., consulting the steel and automotive industry worldwide on material development topics. Further to that, he teaches as an Adjunct Professor at the Universities of Leuven/Belgium and Shanghai/China.

ALUMINIUM IN CAR BODY ENGINEERING

9.00 UNTIL 18.00 h

The use of aluminium as a lightweight material in car body engineering is further increasing, especially with latest developments such as the application of 6xxx und 7xxx series alloys and warm forming solutions, reaching previously unattainable tensile strength ranges. Our full-day tutorial discusses the application-relevant special properties of aluminium as a car body material and makes you familiar with the latest established developments and typical use cases.

- Specific properties of aluminium materials
- Modern aluminium alloy classes and their application in series car bodies
- Application-related aspects of aluminium usage: surfaces, (hot) forming technology, joinability
- Aluminium-specific and aluminium-optimised car body concepts

YOUR TUTORS



Prof. Dr. Jürgen Hirsch

was Senior Scientist at Hydro Aluminium Germany until 2017. He is an internationally renowned expert in the research, development and industrial application of aluminium.



Dr. Axel Förderreuther

started his career at Alcoa Automotive in Structural Development, which he eventually headed. He then set up a lightweight design department for an engineering company and developed car body modules and systems in steel, aluminium, fibre-reinforced plastics and mixed engineering. Well-known throughout the industry as an expert in the application of aluminium in automotive engineering, he works as Director of Automotive Applications at Novelis in Germany.

CONFERENCE

TUESDAY, 14 MAY 2019

8.45 h **Welcome and introduction**
Sabine Scharf, Automotive Circle, DE

KEYNOTE

9.00 h **Cognitive Production Systems – Technologies and Solutions for Body in White Production**
Prof. Dr. Thomas Bauernhansl, Fraunhofer Institute for Manufacturing Engineering and Automation IPA, DE

NEW SOLUTIONS IN LIGHTWEIGHT DESIGN FOR ELECTRIC VEHICLES

9.45 h **Economical lightweight steel construction for electric mobility**
Dr. Jürgen-Johann Schramm, thyssenkrupp Steel Europe, DE

10.15 h **Giga-grade steel lightweight solutions for battery electric vehicle**
Jaehyun Kim, POSCO, KR

10.45 h ☕ **Coffee & contacts / 👤 Meet the Speakers**

11.15 h **Developments and future trends in joining technologies for multimaterial and lightweight design**
Prof. Dr. Marion Merklein, Institute of Manufacturing Technology, DE

11.45 h **Hybrid structural materials for lightweight construction and electric vehicles**
Dr. Stefan Kreiling, Henkel AG & Co. KGaA, DE

12.15 h 🍴 **Lunch / 👤 Meet the Speakers**

COMPOSITES

13.45 h **BMBF Lighthouse Project SMiLE: System-integrated multi-material lightweight concept for electro mobility**
Günter Deinzer, Martin H. Kothmann, Audi AG, DE

14.15 h **Development of thermoplastic composites produced by automated technology**
Peter Pomlency, evopro systems engineering Kft., HU

14.45 h **High pressure meets lightweight-overmolding technology for Class A surfaces**
Jens Winiarz, Hennecke GmbH, DE

15.15 h **Simulation of feasibility and performance of local carbon fibre reinforced steel component**

Daniel Berglund, RISE SICOMP, SE

15.45 h  **Coffee & contacts /**  **Meet the Speakers**

NEW DEVELOPMENTS IN ALUMINIUM

16.15 h **New aluminium alloy solutions for light and affordable doors**

Milan Felberbaum, Novelis Switzerland SA, CH

16.45 h **New aluminium solutions for closures and body structures**

Dr. Sabine Philippe, Constellium, FR

17.15 h **Comparison between structural components in recently developed aluminum HP-DC alloys with magnesium and steel constructions**

Dr. Stuart Wiesner, Rheinfelden Alloys, DE

17.45 h  **Get-together/ Meet the speakers**

19.00 h  **Networking Night**




LIVE POLLS ON SITE

Ask your specific questions on current issues and benefit from the answers of the conference's expert audience!

WEDNESDAY, 15 MAY 2019

NEW DEVELOPEMENTS IN STEEL

- 8.30 h** **Thin walled steel casting for load intersection points of the body in white**
Clemens Bergmann, Hendrik Wäcken, BMW Group, DE
- 9.00 h** **Development and application of new generation advanced high strength steels based on quenching and partitioning process**
Dr. Li Wang, Baoshan Iron&Steel Co., LTD, CN
- 9.30 h** **Development and introduction of GA coated 1200 MPa AHSS with superior bendability**
Edip Ozer Arman, Toyota Motor Europe, BE
- 10.00h** **Development of dual-phase high-ductility (HD) grades and application in modern car-body manufacturing**
Dr. Johannes Rehr, voestalpine Stahl GmbH, AT; Sebastian Heibel, Daimler AG, DE
- 10.30 h**  **Coffee & contacts /**  **Meet the Speakers**

CHALLENGES IN MECHANICAL PROPERTIES OF STEEL

- 11.00 h** **Future trends and challenges in using AHSS in body structure**
Ferat Özkan, Ford-Werke GmbH, DE
- 11.30 h** **1180MPa dual phase steels with good phosphatability and stretch-flangeability**
Musheng Qiu, Shougang Research Institute of Technology, CN
- 12.00 h** **Hydrogen embrittlement in hot stamped Al-Si coated boron steels**
Michele Maria Tedesco, Centro Ricerche Fiat, IT
- 12.30 h**  **Lunch /**  **Meet the Speakers**

MATERIALS PROCESSING

- 13.45 h** **Hot stamping of heavy-gaged components**
Prof. Hardy Mohrbacher, Niobelcon b.v.b.a., BE
- 14.15 h** **Development of a hybrid approach based on a DED-process to improve the lightweight potential of stainless steels for structural parts**
Dr. Aurélien Buteri, APERAM Research Center, FR

CRADLE-TO-GRAVE SUSTAINABILITY

- 14.45 h** **Closing the loop on recycling of zinc coated automotive steel scrap**
Tim Peeters, TataSteel, NL
- 15.15 h** **Life cycle assessment for steel automotive body solutions**
Julio L. Rivera, ArcelorMittal Global R&D, FR
- 15.45 h** **OEM-Outlook**
- 16.00 h** **Conclusion, End of conference**
Sabine Scharf, Automotive Circle, DE



Subject to change (status as of 18 March 2019)

**PROGRAMME UPDATES AT:
WWW.AUTOMOTIVE-CIRCLE.COM**

INFORMATIONS

CONFERENCE FEES

Early bird: 1.725,- €* (for registrations received by 14 April 2019)

Standard: 1.825,- €*

Tutorials:

per Tutorial: 850,- €*

* all prices plus German VAT

CONFERENCE VENUE

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TERMS AND CONDITIONS

Information and registration at

www.automotive-circle.com



YOUR CONTACT

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REGISTER
NOW

**Register until 14 APRIL and
benefit from the early bird!**

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