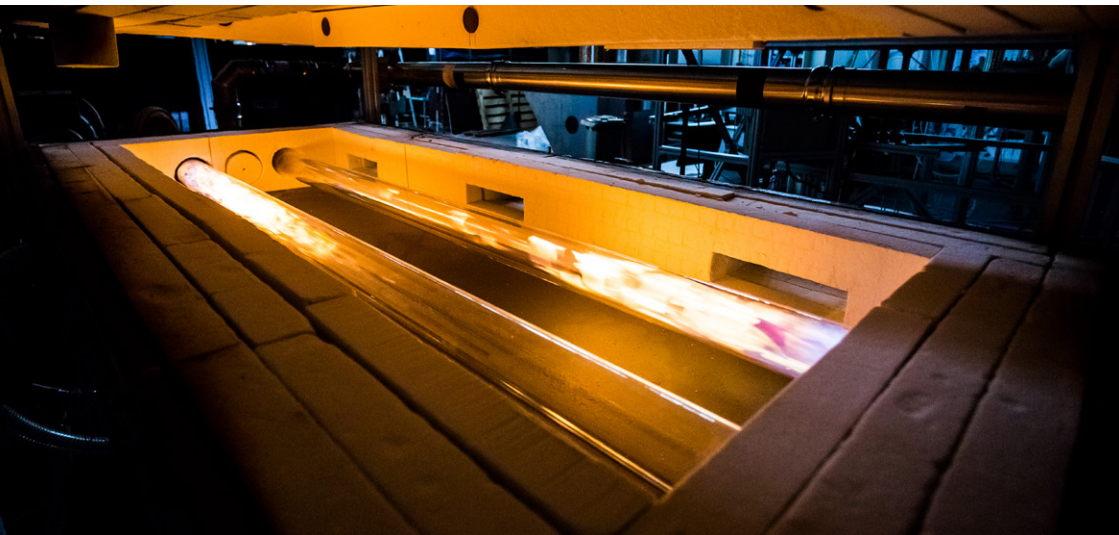


# Programme of the 5th Aachen Thermoprocess Colloquium

on 23 and 24 September 2025

organised in association with



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# Welcome

Dear colleagues, friends and distinguished guests

Living up to tradition and embracing new challenges: this could be the slogan for the 5<sup>th</sup> edition of our Aachen Thermoprocess Colloquium.

The European industry is facing a challenging time. Transformation towards climate neutrality, high energy prices and volatilities in the global political situation are but a few notable examples. Research and innovation are key pillars for strengthening the European industry as well as being able to adapt to consistent changes in the political landscape simultaneously. As a highly energy-intensive industry, the challenges for the thermo-process sector are exceptional. In the last four editions of the Aachen Thermoprocess Colloquium we were able to establish an event that connects experts from the thermo-process sector from industry and academia, with more than 150 participants in each event. In this 5<sup>th</sup> edition, we extend the German speaking community to our European network. We are glad that the additional contributions from our international partners will enrich the colloquium's portfolio and networking opportunities. We were able to collect contributions from industry and academia that cover a wide area of readiness from fundamental research to demonstration of technologies in industrial scale, as already established in the previous editions. The main topics of the conference were and still are research and innovation in CO<sub>2</sub>-reduction in the energy intensive industry and sustainable thermo-processes.

With the traditional greeting  
"Glück auf!"

Christian Wuppermann

# Presentation programme for Tuesday

## 23 September 2025 in the Berlin room

- 9:00 Welcome and opening of the colloquium  
Prof. Dr.-Ing. Christian Wuppermann, Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University
- 9:15 Decarbonization Opportunities and Challenges for the Downstream Aluminum Industry – Constellium View  
Marc Bertherat, Constellium
- 9:40 SALCOS – Transformation in the steel industry  
Nils Gaida, Mayren Shecke, Salzgitter Flachstahl GmbH
- 10:05 Green Electricity, Hydrogen, and Carbon Management as Key Drivers of Industrial Transformation in North Rhine-Westphalia  
Maximilian Feldes, NRW.Energy4Climate
- 10:30 **Coffee break**
- 10:45 Research in Thermo-process technology at Freiberg, Hannover and Aachen  
Hartmut Krause, Igor Niedzwiecki, Christian Wuppermann
- 11:45 Roundtable discussion  
Moderation: Christian Schwotzer
- 12:30 **Lunch break**
- 14:00 Decarbonisation of the Aluminium industry: the Innovation Hub as key enabler  
C. Leroy
- 14:25 Decarbonization in the Brick Industry: Exploring Green Ammonia as a Fuel  
E. Kanbak, R. Giese, J. Kaiser, B. Islami
- 14:50 Plasma-based Heating Technologies for High Temperature Industrial Processes  
S. Eckart, R. Behrend, D. Liebsch, H. Krause
- 15:15 Measures for CO<sub>2</sub>-neutral brick production at Lingi Solead – Handout for practitioners  
H. Rottmann
- 15:40 **Coffee break**
- 16:05 Preparing the transition of steel reheating furnaces to renewable hydrogen  
H. Mohanna, S. Caillat
- 16:30 Challenges and Opportunities in Modernizing Industrial Furnaces for the Green Transition  
F. Scheck, L. Brockerhoff, W. Klein, K. Hornig
- 16:55 H2Reuse in bright annealing  
C. Trachternach, D. Petry, D. Astesiano, E. Koenig, M. Leali, E. Malfa
- 17:20 Heating technologies enabling fossil-free galvanizing with zero emission  
C. von der Heide, H. Behrens, M. Kretschmer, A. Di Giovanni
- 17:45 Analysis of the thermal recycling of lithium batteries  
F. Hoffmann, F. Weigler, F. Herz
- 18:10 **End of the presentation programme**

# The Aachen Thermoprocess Colloquium

The Quellenhof Aachen, as the new conference venue, gives us the opportunity to include new features to our event. In a “one-minute pitch event” the candidates will be challenged to generate excitement and to present their posters, which will be exhibited in the conference area. Another highlight will be the presentation of Virtual Reality Tools, allowing interested participants to immerse themselves in environments that have been created for engineering, safety training or the generation of technological insights.

## Presentation programme for Tuesday 23 September 2025 in the Lisbon room

- 14:00      Heating and quenching strategies for property control of aluminium automotive sheet  
K. Karhausen, P. Heil, A. Subramanian, C. Krause
- 14:25      Analysis of heat transfer-relevant cross-sectional internals – an experimental investigation  
C. Meitzner, F. Herz, E. Specht, A. Lange, H. Kruggel-Emden
- 14:50      Influence of various Parameters on the Quenching of Metal Sheets using single Jets and Arrays of Jets  
B. Mehdi, J. Hof, E. Specht
- 15:15      Development of a honeycomb rotary kiln for the gentle thermal treatment of bulk materials – an experimental and numerical analysis  
J. Hahne, F. Herz, C. Meitzner, A. Bück
- 15:40      [Coffee break](#)
- 16:05      Level-2 systems as a prerequisite for recording and monitoring the energy efficiency of industrial furnaces  
H.Oertel, F. Meister, S. Hadrian
- 16:30      Data-driven decision support system for energy-efficient scrap melting in electric arc furnaces  
S. Kuthe, B. Glaser
- 16:55      Acoustic gas temperature measurement – Improving quality and productivity through a fast and reliable 2D gas temperature measurement  
M. v. Campenhausen, T. Schöler, M. Brodeck
- 17:20      Development of a model library to identify energy saving potentials through process coupling in the thermal process industry  
B. Bender, M. Dany, P. Phadnis
- 17:45      Thermoacoustic considerations of hydrogen-methane flames with sensors for the furnace industry  
Y. John, C. Nailis, D. Kuckelberg
- 18:10      [End of the presentation programme](#)

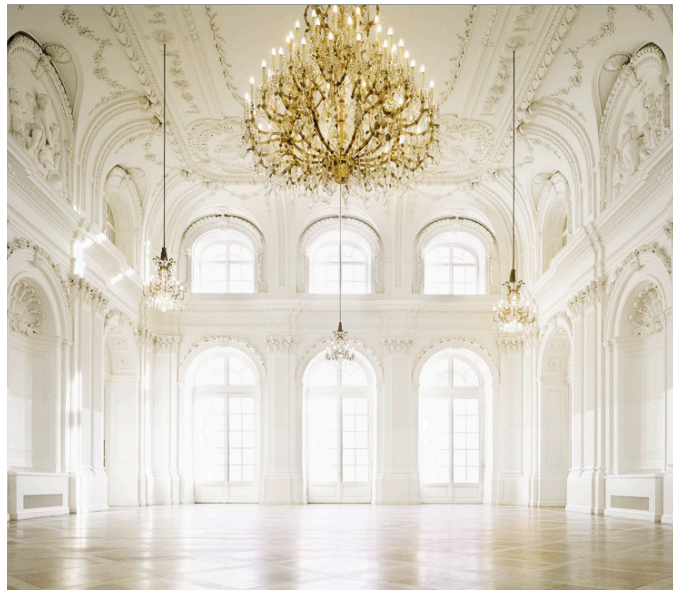
# Evening event on Tuesday, 23 September 2025

From 7:30 p.m., we look forward to welcoming you to a festive banquet in the ballroom of the Altes Kurhaus in Aachen.

The evening event provides an opportunity to exchange ideas and cultivate personal contacts. We hope that the evening event will provide an appropriate setting for personal exchanges.

## Altes Kurhaus of the City of Aachen

Located in the heart of Aachen, the ballroom in the Old Spa House, with its beautiful interior architecture, is considered a unique event venue. Immersed in the stylish ambience of bygone times, the hall is available for the evening event of the colloquium.





# Parkhotel Quellenhof

In the first half of the 20th century, the Quellenhof in Aachen was one of the most renowned spa hotels in Germany. Following restoration work between 1997 and 1999, the former grand hotel has once again become a luxury hotel in the 21st century after a period of decline caused by the Second World War. The Parkhotel Quellenhof in Aachen is a prestigious venue renowned for its elegance and versatility, making it an ideal choice for conferences and business events. With its spacious, well-equipped conference rooms and excellent infrastructure, the venue provides an ideal setting for engaging discussions and collaborative sessions. Conveniently located near Aachen's city centre, the Quellenhof offers easy access for participants while maintaining a tranquil atmosphere.



# Presentation programme for Wednesday

## 24 September 2025 in the Berlin room

- 9:00 H<sub>2</sub> Transition: Challenges for Burners and Control Systems  
P. Götze, R. Roth, M. Wiersig
- 9:25 Advancing industrial burners' fuel flexibility for sustainable steel production  
S. Nardi, M. Bissoli, D. Astesiano, E. Malfa
- 9:50 Influence of hydrogen combustion on the mechanical behaviour of heat-resistant steels in thermoprocessing technology  
C. Fritsche, L. Winter, L. Rymer, T. Bergelt, T. Lampke, H. Krause
- 10:15 Hydrogen technologies for decarbonization of industrial heating processes and the enabling contribution of refractories  
T. Tonnesen, T. Echterhof, N. Schmitz, C. Wuppermann
- 10:40 [Coffee break](#)
- 11:00 Poster session and VR experience
- 12:15 [Lunch break](#)
- 13:45 Modelling and implementation of an Oxy-fuel Combustion system in a previously regenerative aluminium furnace to drastically reduce CO<sub>2</sub> emissions while improving productivity  
J. de Diego, D. Oberschelp, J. Kaiser
- 14:10 SELFREG: a new generation of self-regenerative burners Energy Transition Ready  
A. Baio
- 14:35 Numerical Study of NO<sub>x</sub> Emissions in Hydrogen-Oxyfuel MILD Combustion Under Air Leakage in a Semi-Industrial Furnace  
A. M. Garcia, A. Buchholz, N. Schmitz, C. Wuppermann
- 15:00 Pollution in combination with indirect heating in a small sized single ended radiant tube  
H. Graf v. Schweinitz
- 15:25 [Coffee break](#)
- 15:50 Heating up electrical furnaces in pyrometallurgy: A combined molecular dynamics – experimental investigation of the electrical conductivity of oxidic slags  
I. Bellemans, P.-J. Boeykens, H. Verbeeck, K. Verbeken
- 16:15 Modelling and Characterization of Soft Magnetic Composites in Induction Heating Systems  
Y. Zhou, M. Fuchs, E. Baake, I. Niedzwiecki, A. Nikanorov
- 16:40 Real-Time Characterization of Dehydration Behavior in Refractory Castables Using Microwave Resonators  
T. Stein, O. Krause, D. Bruhn, W. Taute, M. Höft, T. Waldstädt, C. Dannert
- 17:05 [End of the presentation programme](#)



# Presentation programme for Wednesday 24 September 2025 in the Lisbon room

- 9:00      How Virtual Reality enhance Molten Metal Safety Program at Constellium  
M. Bertherat, M. Godicheau, F. Zele
- 9:25      Virtual reality for the training and development of employees in open-die forging  
M. Gouverneur, N. Jagtap, C. Klameth, B. Kantzow
- 9:50      Next-Gen Modernization: Leveraging VR for Smarter Plant Upgrades  
C. Norpoth, P. M. Saemann
- 10:15      -
- 10:40      [Coffee break](#)
- 11:00      Poster session and VR experience
- 12:15      [Lunch break](#)
- 13:45      Development of a reliable method for the evaluation of electrification concepts  
for fossil fuelled thermoprocessing applications  
I. Niedzwiecki, E. Baake
- 14:10      Project MyGlass – Hybrid Heating for Emissions Reduction and Efficiency In-  
creases in Glass Melting  
A. Pestel, R. Behrend, S. Eckart, S. Fuhrmann, H. Krause
- 14:35      Inductive high-temperature plasma systems – from exclusive space technology  
to a powerful tool for decarbonising industry  
U. Lohse, R. Sokolov
- 15:00      High Temperature Electrical Heating elements as an enabler of Decarbonisation  
P. Kjeldsteen
- 15:25      [Coffee break](#)
- 15:50      Reducing the Carbon Footprint of Discontinuous Heat Treatment Processes with  
Advanced Kiln Engineering  
J. Hesselbach, J. Wittmann, L. Lasslop
- 16:15      Calculation of Energy Costs when Changing from Natural Gas to Electric Power  
in High Temperature Process Heat Generation – a case study considering ener-  
gy storage and hybridization  
T. Mertens, J. Sorge
- 16:40      Development of a test rig for determining the service life of hybrid heating sys-  
tems  
F. Kremer
- 17:05      [End of the presentation programme](#)

## Our sponsors

Many thanks to the sponsors whose support has made it possible to realise the colloquium in this way.



## **Impressum**

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