

# PROCESS AND CASTING OPTIMIZATION THROUGH EFFICIENT DIE TEMPERATURE CONTROL



September 22-23, 2022  
in Vienna

**MAGMA**  
academy

voestalpine  
ONE STEP AHEAD.

# INVITATION

Factors such as cycle time, tool life, microstructure and distortion of castings as well as other technical and economic aspects are strongly dependent on the temperatures in the mold. In die casting, so-called three-dimensional conformal temperature control systems can control casting processes and thus ensure high economic efficiency.

Engaging in an intensive exchange of ideas in a relaxed atmosphere: In a jointly organized 2-day forum, MAGMA GmbH and voestalpine High Performance Metals will demonstrate how to optimize processes and components using intelligent die temperature control. Because... early planning is crucial!

By adapting temperature control systems to the die, they become more robust, sustainable and cost-effective and the controllability of the casting processes is drastically increased. Together with you, we work out how to develop and verify the tool temperature control design in parallel with the part design.

We would like to cordially invite you to the second FORUM "Process and Casting Optimization Through Efficient Die Temperature Control". It will take place from Thursday, September 22, 2022 to Friday, September 23, 2022 in Vienna, Austria.

Best regards,

Malaika Heidenreich

Götz Hartmann

**MAGMA**

André Cavalcante

Armin Wiedenegger

**voestalpine**

# AGENDA

Thursday, September 22, 2022

09:00 - 17:30

Starting at 9:00 Registration at Hotel 25hours in Vienna

## 10:00 - Introduction and Motivation

*Peter Hofer-Hauser, Austrian Foundry Institute*

Challenges and potentials in die casting and toolmaking, such as

- » Cycle time optimization
- » Improvement of die lifetime
- » Minimizing the scrap rate
- » Market & technology trends in die casting

## 10:45 - The Virtual Foundry:

### Holistic Process Planning

*Götz Hartmann, MAGMA GmbH*

Microspraying, tool properties, tool performance

- » Digital Twin and Digital Shadow
- » Thermal balance

## 11:30 - Break

## 11:45 - Microspraying

*Darko Tomazic, Chem-Trend*

Thermal effect during lubricant spraying

- » Advantages of microspraying
- » Use cases

## 12:30 - Lunch break

## 13:30 - Potentials & Challenges of Additive Manufacturing in Die Casting

*Armin Wiedenegger*

*voestalpine Additive Manufacturing Center GmbH*

- » Holistic approach to optimizing the die casting process with AM
- » Potentials of additive manufacturing in die casting
- » Challenges for additive manufacturing in die casting
- » Successful use cases

## 14:15 - Influence of Die properties on Process Performance

*Günther Prunner, voestalpine HPM International GmbH*

Failure mechanisms of die casting molds

- » Optimal combination of steel & heat treatment & coating
- » Influence of the surface finish on the die lifetime

## 15:00 - Break

## 15:30 - Forum of Ideas: Interactive Workshop in Small Groups

## 17:00 - Summary of Forum of Ideas

## 17:30 - End of day one & start of the evening event

# AGENDA

Friday, September 23, 2022

9:00 - 13:30

**09:00 - Virtual design of Temperature Control Measures**

*Horst Bramann, MAGMA GmbH*

Temperature control media

- » Tempering control strategies and goals
- » Die lifetime
- » Process boundary conditions for conformal cooling

**09:45 - Production Optimization Through Process Control: Benefits and Cost-Saving Potential**

*Uwe Gauermann, ELECTRONICS GmbH*

- » Process monitoring in the HPDC industry - current practice and outlook
- » Advantages of AM for process monitoring - high benefits at low cost
- » Cost-saving potential through reduced cycle time and stable good quality

**10:30 - Break**

**11:00 - Process Control (Digital Shadow, Foundry 4.0)**

*Adrian Buob, Bühler AG*

- » Efficient mold temperature control goals
- » Design and layout of temperature control
- » Process data acquisition
- » Die temperature control in the HPDC process
- » Digital Shadow / Digital Twin in the HPDC process

**11:45 - Presentation of Potentials**

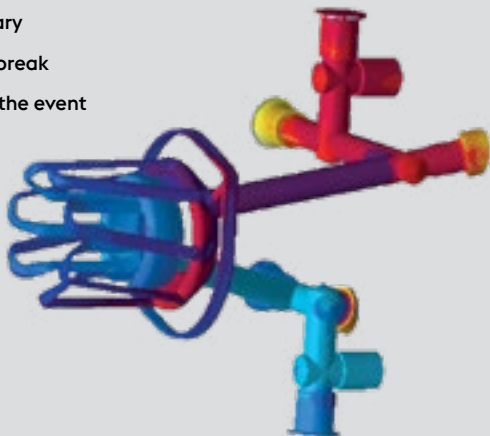
*Timo Gebauer, SIGMA GmbH*

- » State of the art in tempering technology of polymer injection molds
- » Conformal tempering channels
- » Variothermal tempering
- » Local heat sources (heating channel, inductors)

**12:30 - Summary**

**12:45 - Lunch break**

**13:30 - End of the event**



## **Event location**

25hours Hotel at MuseumsQuartier  
Lerchenfelder Straße 1-3  
1070 Vienna, Austria



## **Registration**

MAGMAacademy  
Phone: +49 241-88901-699  
E-Mail: [academy@magmasoft.de](mailto:academy@magmasoft.de)  
[www.magmasoft.de/en](http://www.magmasoft.de/en)

## **Your contact person**

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# REGISTRATION

## FORUM “Process and Casting Optimization Through Efficient Die Temperature Control“

September 22-23, 2022

Your invest for participation is €490 (plus 19% VAT) including evening event, excluding hotel costs.

<input type="checkbox"/> Mr	<input type="checkbox"/> Mrs	<input type="text"/>	title
<input type="text"/>	<input type="text"/>		
surname	first name		
<input type="text"/>	<input type="text"/>		
company	function		
<input type="text"/>			
street, house number			
<input type="text"/>	<input type="text"/>		
zip code	city		
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e-mail			
<input type="text"/>	<input type="text"/>		
phone	fax		
<input type="text"/>	<input type="text"/>		
date	signature		

Please register online via our **event calendar** or by email to **academy@magma-soft.de**



**Conditions of registration:** A written cancellation on your part is possible free of charge until August 22, 2022. In case of a later cancellation or no-show at the event, the entire participation fee will be charged. In the event of cancellation at short notice on the part of MAGMA/voestalpine, you will only be entitled to a refund of the participation fees. The invoice will be issued after attendance of the event.