



WYDZIAŁ ODLEWNICTWA AGH  
Faculty of Foundry Engineering

## III INTERNATIONAL CONFERENCE OF CASTING AND MATERIALS ENGINEERING ICCME 2021

4 – 5 November 2021, Krakow, Poland

### 4<sup>th</sup> NOVEMBER 2021

Faculty of Foundry Engineering AGH, Krakow

#### STUDENT / PHD STUDENT SESSION

09:30 – 10:00 › REGISTRATION

10:00 – 10:15 › OFFICIAL OPENING

10:15 – 11:45 › STUDENT SESSION A

11:45 – 12:00 › COFFEE BREAK

12:00 – 14:00 › STUDENT SESSION B

14:00 – 14:45 › LUNCH

14:45 – 16:00 › PHD STUDENT SESSION

16:30 – 19:00 › STUDENT & PHD STUDENT SOCIAL MEETING

### 5<sup>th</sup> NOVEMBER 2021

Hotel Novotel Krakow City West

09:00 – 10:00 › REGISTRATION

10:30 – 11:00 › OFFICIAL OPENING

11:00 – 12:20 › PLENARY SESSION

12:30 – 13:30 › LUNCH

13:30 – 15:30 › SCIENTIFIC SESSION A & SCIENTIFIC SESSION B

15:30 – 16:00 › COFFEE BREAK

16:00 – 18:00 › SCIENTIFIC SESSION C

19:00 – 24:00 › BANQUET



## CONFERENCE PROGRAMME



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Faculty of Foundry Engineering

III INTERNATIONAL CONFERENCE  
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ENGINEERING ICCME 2021

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## 4<sup>th</sup> November 2021

Faculty of Foundry Engineering AGH, Krakow

### STUDENT / PHD STUDENT SESSION

09:30 – 10:00 › REGISTRATION

10:00 – 10:15 › OFFICIAL OPENING

10:15 – 11:45 › STUDENT SESSION A

› Chairmen: Paweł Żak & Julia Mioduszevska

**10:15 - 10:30**

**G. Boroń:** Optimization of the shape of the working plate of a two-piece metal mold based on virtual experiments

**10:30 - 10:45**

**J. Marosz:** Analysis of fragmentation phenomenon of composite layers reinforced by TiC obtained in situ in castings made from selected iron alloys

**10:45 - 11:00**

**D. Halejcio:** Influence of the hardening parameters on the deformation of the core in the cold box technology

**11:00 - 11:15**

**A. Trela:** Comparison of the quality of vibration and vacuum formed refractories

**11:15 - 11:30**

**P. Grudziński:** Simulation of the brake disc manufacturing process using the MAGMA 5 software

**11:30 - 11:45**

**A. Riasnyi:** Development of industrial casting technology of iron alloys

11:45 – 12:00 › COFFEE BREAK



## 12:00 - 14:00 › STUDENT SESSION B

› Chairmen: Jarosław Jakubski & Zuzanna Jonkisz

**12:00 - 12:30**

**Presentation of the Mayacast-Nokes Precision Engineering Ltd**

**12:30 - 12:45**

**P. Lara:** The use of additive printing with polymers materials in metal casting process

**12:45 - 13:00**

**A. Dul:** Plasma-sprayed coatings by example of Ni-Cr-Re coating

**13:00 - 13:15**

**M. Fic:** Metallographic analysis of welds in multi-layer joints made by explosive welding method

**13:15 - 13:30**

**A. Sepiał:** Wiatrołap - a design of a wind turbine that uses the air stream of passing cars

**13:30 - 13:45**

**S. Owarzany:** AGH 3D BLDC – choosing optimal parameters for additive manufacturing of the Brushless DC Electric Motor (BLDC) in FDM technology

**13:45 - 14:00**

**A. Nejranowski:** Recovery of precious metals by recycling used auto catalytic converters

## 14:00 - 14:45 › LUNCH



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### 14:45 - 16:00 › PHD STUDENT SESSION

› Chairmen: Eugeniusz Ziólkowski & Karolina Bracka

**14:45 - 15:00**

**Presentation of the Oras Olesno Sp. z o.o.**

**15:00 - 15:15**

**S. Stąpór, M. Górny, B. Gracz:** Influence of chemical composition on selected properties of high-quality alloys from the Al-Cu system

**15:15- 15:30**

**A. R. Sheikh:** Thermomechanical steel surface hardening with the help of innovative machinings

**15:30– 16:00**

**Announcement of the laureates of Student Sessions**

### 16:30 - 19:00 › STUDENT & PHD STUDENT SOCIAL MEETING

[www.iccme.foundry-conference.com](http://www.iccme.foundry-conference.com)

4<sup>th</sup> November 2021



## 5<sup>th</sup> November 2021

Hotel Novotel Krakow City West

09:00 - 10:00 › REGISTRATION

10:30 - 11:00 › OFFICIAL OPENING

11:00 - 12:20 › PLENARY SESSION

› Chairmen: Jan Jezierski & Marcin Górny

11:00 - 11:20

**Paolo Ferro** › Padova University, Italy

Lightweight design in a critical raw materials perspective

11:20 - 11:40

**Steve Wallings** › Maycast-Nokes Precision Engineering, UK

High-quality precision castings for aerospace, defence, marine and premium automotive markets

11:40 - 12:00

**Jerzy Sobczak** › AGH UST Krakow, Poland

Cast metal matrix composites – creative materials for automotive and aerospace engineering

12:00 - 12:20

**Jerzy Rozmund** › Consolidated Precision Products Poland

Equiax Investment Castings in Aerospace Turbofan Engine based on CPP Poland Activity

12:30 - 13:30 › LUNCH



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### III INTERNATIONAL CONFERENCE OF CASTING AND MATERIALS ENGINEERING ICCME 2021

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#### 13:30 - 15:30 › SCIENTIFIC SESSION A

› Chairmen: Michał Szucki & Paweł Malinowski

**13:30 – 13:50**

**A. Zaczyński, M. Królikowski, W. Kwilosz, M. Sokolnicki, A. Nowak, E. Guzik, A. Burbelko:** Effect of metal matrix modification on the structure and properties of ductile ausferritic cast iron (ADI)

**13:50 – 14:10**

**S. Sobula, J. Kozana, P. Pałka, K. Miłkowska:** Structure of intermetallic CuZr phase synthesised on the surface of bronze casting

**14:10 – 14:30**

**W. Kwilosz, M. Królikowski, A. Zaczyński, M. Sokolnicki, A. Nowak, E. Guzik:** Occurrence of undesirable Chunky graphite in Solution strengthened ductile cast iron by silicon

**14:30 – 14:50**

**E. Guzik, A. Szczęsny, D. Kopyciński, K. Piotrowski, W. Paul:** The procedure of inoculation high-quality gray cast iron with precipitates of flake graphite, intended for large-size (heavy) plates manufactured in the Krakodlew S.A. foundry

**14:50 – 15:10**

**M. Królikowski, W. Kwilosz, A. Zaczyński, M. A. Nowak, E. Guzik, A. Burbelko:** Method for selecting the metallurgical quality of a liquid alloy intended for castings with different wall thicknesses, using the evaluation of the curve of crystallization and cooling of the alloy in the thermal analysis method

**15:10– 15:30**

**P. Malinowski:** Optimization of the company's key performance indicators KPI using artificial intelligence



## 13:30 - 15:30 › SCIENTIFIC SESSION B

› Chairmen: Jerzy Sobczak & Magdalena Kawalec

**13:30 – 13:50**

**J. Jezierski, R. Dojka, K. Janerka, A. Studnicki, D. Bartocha, M. Jureczko, K. Piasecki:** Optimization of pattern properties for Full Mold technology for manufacturing innovative new grade ductile iron castings

**13:50 – 14:10**

**P. Tadej, C. Tuliszka:** The use of sand core shooting simulation to improve the gravity casting process of cylinder heads

**14:10 – 14:30**

**P. Tadej, C. Tuliszka:** Digitization of the die-casting process

**14:30 – 14:50**

**D. Sundaram, J. Tamás Svidró, A. Diószegi, J. Svidró:** A novel approach to quantify the effect of density of sand cores on their gas permeability

**14:50 – 15:10**

**Ł. Petrus, A. Bulanowski, J. Kołakowski, J. Sobieraj, T. Paruch, M. Urbanowicz, M. Brzeżański, D. Burdzy, J. Zych, K. Janerka:** The significance of the Derivative Thermal Analysis (DTA) in automated metallurgical processes



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15:30 – 16:00 › COFFEE BREAK

16:00 – 18:00 › SCIENTIFIC SESSION C

› Chairmen: Dinesh Sundaram & Paweł Żak

16:00 – 16:20

**H. Ando, D. Minamide, Y. Takagi, K. Yano, N. Nakamura, M. Sano, T. Aoki & Y. Nemoto:** Optimization of Ladle Tilting Speed for Preventing Temperature Drop in Die Casting Process

16:20 – 16:40

**P. Delimanová, M. Bartošová, V. Šabík:** Influence of the amount of binder in the cores on the veinings elimination

16:40 – 17:00

**K. Bracka, A. Szczęsny, D. Kopyciński:** Influence of titanium on the quality of zinc coating formed on steel and cast iron surface

17:00 – 17:20

**R. Dojka, M. Dojka, M. Lenert, M. Jureczko, W. Karski, K. Piasecki:** Concept of a new design for separately cast ductile iron samples

17:20 – 17:40

**M. Wróbel, A. Burbelko:** Diffusion model of binary systems controlled by chemical potential gradient

17:40 – 18:00

**A. Fijołek, P. Żak, A. Garbacz-Klempka, P. Silska, M. Stróżyk:** The use of engineering software to recreate the manufacturing process of an antique cast

19:00 – 24:00 › BANQUET



organizer



**WYDZIAŁ ODLEWNICTWA AGH**  
Faculty of Foundry Engineering



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Odlewników Polskich**  
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Odlewnictwa**

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