

PROGRAMME / PROGRAM

63rd IFC Portoroz 2023 / 63. IFC Portorož 2023

- 16.30–19.30** **Registration of participants at the Conference reception desk /**
Prijava udeležencev na recepciji konference
- 17.30** **Bus transfer from Hotel Slovenia to Piran /** Avtobusni prevoz od
Hotela Slovenije do Pirana
- 18.00** **Reception in the garden of the Cultural Center Georgios – in the**
church of St. Jurij – With a greeting from the representative of the
County of the Municipality of Piran / Sprejem na vrtu Kulturnega
centra Georgios pri cerkvi sv. Jurija s pozdravnim nagovorom
predstavnika županstva Občine Piran

Thursday / Četrtek, 14. 09. 2023

7.30–further / dalje **Registration of participants at the Conference reception desk**

Thursday / Četrtek, 14. 09. 2023

Plenary lectures / Plenarna predavanja

Hall/Hala

Cristoforo Colombo

- 9.30–9.45** MIRJAM JAN–BLAŽIĆ,
President / Predsednica Slovenian Foundrymen Society
The Opening Address/ Uvodni nagovor
- 9.45–10.15** C. KUHLGATZ¹, J.J. GONZÁLEZ², ¹Albertuswerke GmbH (DE), ²World
Foundry Organization (ES): **Support by the WFO in the**
recruitment of young talent and the exchange of information
about the international “carbon net zero” situation / Podpora
WFO pri zaposlovanju mladih talentov in izmenjava informacij o
mednarodni situaciji glede »carbon net zero«
- 10.15–10.45** ► M. BOSSE, BDG-Service GmbH (DE): **Decarbonisation Paths for**
the Foundry Industry / Razoglaševalne poti v livarstvu
- 10.45–11.15** ► D. HOWE, G. GEIER, Siempelkamp Giesserei GmbH (DE):
Transformation in the Iron Foundry in Europe: Keys for Technical
and Economic Success / Prilagoditve v evropskih livarnah sive litine:
ključ do tehnološkega in ekonomskega uspeha
- 11.15–11.45** **Break / Odmor**

- 11.45–12.15** ▶ P. MRVAR¹, M. PETRIČ¹, S. KASTELIC², A. KRIŽMAN³, HEINZ PALKOWSKI⁴, ¹Faculty of Natural Sciences and Engineering of University of Ljubljana, ²TC Livarstvo d.o.o., ³University of Maribor, (SI), ⁴TU Clausthal (DE): **Manufacturing and Characterization of Composed Foam Castings from Biodegradable Zn-Mg Alloy and Salt** / Izdelava in karakterizacija sestavljenih ulitih pen iz bio-razgradljive zlitine Zn-Mg ter soli
- 12.15–12.45** ▶ K. WEISS, C. BAITIANG, RWP GmbH (DE): **Digitization as the Basis for Proactive Foundry Management** / Digitalizacija kot osnova za proaktivno upravljanje livarn
- 12.45–13.15** ▶ P. HOFER-HAUSER, R. GSCHWANDTNER, Austrian Foundry Research Institute (AT): **Thermal Shock Resistance of Conformally Cooled Core Pins for Die Casting Applications** / Odpornost na termične šoke komfortno hlajenih vložkov v aplikacijah tlačnega litja
- 13.15–15.15** Lunch Break / Kosilo
- 15.15–15.45** ▶ J. MEDVED¹, M. VONČINA¹, T. BALAŠKO¹, V. NAHTIGAL², ¹Faculty of Natural Sciences and Engineering of University of Ljubljana, (SI), ²Chamber of Commerce and Industry of Slovenia, (SI): **The Importance of Critical Raw Materials for the Sustainable Development of Metallurgical Companies** / Pomen kritičnih surovin za trajnostni razvoj metalurških podjetij
- 15.45–16.15** ▶ A. NOFAL, Central Metallurgical Research and Development Institute (CMRDI) (EG): **Fifty Years of Cast Iron Research at CMRDI** / Petdeset let raziskav sive litine na CMRDI
- 16.15–16.30** Break / Odmor
- 16.30–17.00** M. FIROOZBAKHT, A. BÜHRIG-POLACZEK, RWTH Aachen University (DE): Proactive, Innovative and Flexible Foundry Institute – Investment Casting Research Group / Proaktiven, inovativen in prilagodljiv inštitut za livarstvo – Skupina za raziskavo precizijskega litja
- 17.00–17.30** ▶ Z. Zovko Brodarac¹, F. Kozina¹, J. Medved², J. Burja³, ¹University of Zagreb Faculty of Metallurgy (CRO), ²Faculty of Natural Sciences and Engineering of University of Ljubljana (SI), ³Institute of Metals and Technology, Ljubljana, (SI): **Investigation of Recycled AlSi9Cu3(Fe) Alloy** / Preiskava reciklirane zlitine AlSi9Cu3(Fe)

Thursday Evening / Četrtek večer, 14. 09. 2023

- 19.30** Foundrymen night on the coastline opposite Hotel Slovenija / Noč livarjev na obali nasproti Hotela Slovenija

Friday / Petek, 15. 09. 2023

Hall/Hala

SECTION / SEKCIJA A:

Amerigo Vespucci

Cast Iron, Foundry Techniques and Technology /

Železove litine, livarske tehnike in tehnologije

9.00–9.20 M. PESCI, HA ITALIA S.p.A. (IT): **New Chemex Insert Sleeves for The Reduction of Feeding Volume** / Novi vložki Chemex za zmanjšanje volumna napajanja

9.20–9.40 A. HARBORTH, V. AFANASEV, Volume Graphics GmbH (DE): **Industrial CT: Quality Control and Process Optimization in the Casting Process With the Help of Non-Destructive Examinations (NDE)** / Industrijski CT: Kontrola kakovosti in optimizacija procesa v livarstvu s pomočjo neporušnih preiskav

9.40–10.00 D. MOLNAR, University of Miskolc (HU): **Development of a Duplex Casting Method** / Razvoj metode dupleksnega litja

10.00–10.15 Break / Odmor

10.15–10.35 C. ABT, F. WOHLGEMUTH, HEITEC PTS GmbH (DE): **Fast and Flexible Inline X-Ray Testing in Foundries Using Modular Concepts** / Hitro in fleksibilno rentgensko testiranje v livarnah z uporabo modularnega koncepta

10.35–10.55 K.VAN NIEKERK^{1,2}, ¹Lauds Foundry Equipment GmbH (DE), Siapro d.o.o. (SI): **Cold Box Core Machines** / Stroji za cold box jedra

10.55–11.15 E. OFFENBACHER, LHS Clean Air Systems (AT): **Green Foundry – Advanced Dedusting With Combined Heat Recovery** / Napredno razpraševanje kombinirano z regeneracije toplote

11.15–11.30 Break / Odmor

11.30–11.50 I. ADHIWIGUNA, R. DEIKE, Universität Duisburg Essen (DE): **Reassessing the Role of Magnesium: In Search to a Sustainable Alternative in Cast Iron Production** / Ponovna ocena vloge magnezija: V iskanju ustrezne trajne alternative v proizvodnji sive litine

11.50–12.10 A. MAJUMDAR, C. PALANISAMI, A. BÜHRIG-POLACZEK, Giesserei Institute, RWTH Aachen (DE): **Correlation of Microstructural Analysis of Spheroidal Graphite Cast Iron Grades by Varying the Silicon Content** / Povezovanje mikrostrukturnih analiz nodularne sive litine s spreminjanjem deleža silicija

12.10–12.30 Luka Krajnc¹, Marko Bojinović¹, Grega Klančnik¹, Andrej Resnik², ¹Pro Labor d.o.o. (SI), ²OMCO Metals Slovenia d.o.o., (SI): **Case Study of**

**Digital and Circular Transformation Interaction in Foundries /
Študija primera integracije digitalnega in krožnega prehoda v
livarnah**

12.30-12.45 **Break/Odmor**

12.45–13.05 L. LAZIC, M. POKRIVAC, I. JANDRLIC, Faculty of Metallurgy of University of Zagreb (CRO): **Technological and Structural Calculation of the Recuperator for Air Preheating on the Cupola Furnace** / Tehnološka in strukturna kalkulacija rekuperatorja za segrevanje zraka pri kupolni peči

13.05-13.25 J.TROJAN, Norican Czech s.r.o.(CZ): **DISA – sustainable green sand moulding/** trajnostno formanje bentonitnih peščenih mešanic-DISA

13.30 **Conclusion of the Conference With Lunch / Zaključek konference s kosilom**

Friday / Petek, 15. 09. 2023	Hall/Hala
SECTION / SEKCIJA B:	Cristoforo Colombo
Non-ferrous Alloys / Neželezne zlitine	

9.00–9.20 ► R. RUDOLF^{1,2}, P. MAJERIČ^{1,2}, T. ŠVARC¹, Ž. JELEN¹, ¹Faculty of Mechanical Engineering of University of Maribor, ²Zlatarna Celje d.o.o., (SI): **Evaluation of the Melting Point of Gold Nanoparticles** / Ovrednotenje temperature tališča nanodelcev zlata

9.20–9.40 D. BOOS, K. DRECHSLER, Technical University of Munich (DE): **Fiber-Reinforced Salt Cores for High-Pressure Die Casting** / Z vlakni ojačana slana jedra za tlačno litje

9.40–10.00 E. ARKO, YASKAWA Slovenia d.o.o. (SI): **Automated Robotic Solution for Deburring and Cleaning Robotic Castings Using 3d Machine Vision** / Avtomatizirana robotska rešitev za razigljevanje in čiščenje robotskih ulitkov z uporabo 3d strojnega vida

10.00–10.15 **Break / Odmor**

10.15–10.35 S. LINK, C. GEIGER, Geiger + Co. Schmierstoff-Chemie GmbH (DE): **Optimized Mold Release Agents for New Structural Components Made From Naturally Hard Alloys** / Optimizirana ločilna sredstva za nove strukturne komponente narejene iz naravno trdih zlitin

10.35–10.55 A. MERTZ, T. USNER, Fondarex-Europe (DE): **Meeting New Challenges in Die Casting With Innovative Peripherals** / Novi izzivi v tlačnem litju z uporabo inovativne periferije

10.55–11.15 B. PRILLHOFER¹, W. FRAGNER², J. KNAACK¹, G. GABARDI¹, ¹AMAG Casting GmbH, ²AMAG Austria Metall AG, (AT): **Recycled Heat-Treatable Casting Alloy With Small Carbon Footprint for Safety-**

► Invited Lecture / Vabljen predavatelj

Relevant Components / Reciklirana zlitina za toplotno obdelavo z majhnim ogljičnim odtisom za varnostne komponente

11.15–11.30 Break / Odmor

11.30–11.50 ▶ J. LI, Montanuniversität Leoben (AT): **Atomic DFT Simulation and Experimental TEM APT Observations on the Distribution of Modifying Solutes Within Eutectic Si in Al-Si Based Alloys** / Atomska DFT simulacija in eksperimentalno opazovanje s TEM APT porazdelitve modificiranih raztopin z eutetskim Si v Al-Si ulitinah

11.50–12.10 M. FASSINA, ItalPressGauss (IT): **Technical Considerations for Minimizing Scrap in Toggle Free HPDC** / Tehnični pomisleki za zmanjšanje izmeta pri tlačnem litju brez preklopa

12.10–12.25 Break / Odmor

12.25 - 12.45 R. KLEINHANS, M. PINTORE, S. KLAN, C. JUGERT, W. VOLK, Fraunhofer Institute for Casting, Composite and Processing Technology (DE): **Possibilities for Direct Use of Scrap in Aluminum Foundries** / Možnosti za neposredno uporabo izmeta v livarnah aluminija

12.45 – 13.05 ▶ I. JANDRLIĆ¹, L. MRKOBRADA¹, M. MIKULIĆ², L. GRUBIŠIĆ¹, ¹Faculty of Metallurgy of University of Zagreb, ²DEPOS d.o.o., (CRO): **Circular Economy and Recalling of the Aluminum Beverage Cans** / Krožna ekonomija in odpoklic aluminijevih pločevink

13.30 Conclusion of the Conference With Lunch / Zaključek konference s kosilom

Friday / Petek, 15. 09. 2023		Hall/Hala
SECTIONSECTION / SEKCIJA C:		Fernand de Magellan
Young Lecturers and Researchers		

10.00 – 10.20 T. ŠVARC¹, Ž. JELEN¹, P. MAJERIČ^{1,2}, M. ZADRAVEC¹, T. GOMBOC¹, R. RUDOLF^{1,2}, ¹Faculty of Mechanical Engineering of University of Maribor, ²Zlatarna Celje d.o.o., (SI): **Recycling of Rapid Antigen Tests: Extraction of Nanogold** / Recikliranje hitrih antigenih testov: ekstrakcija nanozlata

10.20 – 10.40 G. GYARMATI, T. MENDE, University of Miskolc (HU): **The Interactions of Grain Refiner Particles and Double Oxide Films in Liquid Aluminum Alloys** / Interakcija udrobnilnih sredstev in dvojnih oksidnih plasti v aluminijevi talini

10.40 – 11.00 L. MRKOBRADA, I. JANDRLIĆ, F. KOZINA, T. BRILIĆ, Faculty of Metallurgy of University of Zagreb (CRO): **Plastic Instabilities During Processing of AlMg Alloy** / Plastične nestabilnosti pri procesiranju zlitine AlMg

▶ Invited Lecture / Vabljen predavatelj

Poster Presentations / Plakatne predstavitve

1. T. BALAŠKO, M. VONČINA, J. MEDVED, Faculty of Natural Sciences and Engineering of University of Ljubljana (SI): **The Effect of Lanthanum Addition on the Solidification of EN AW-7175 Alloy** / Vpliv dodatka lantana na strjevanje zlitine EN AW-7175
2. M. VONČINA¹, A. PAVŠIČ¹, I. PAULIN², J. MEDVED¹, M. PETRIČ¹,
¹Faculty of Natural Sciences and Engineering of University of Ljubljana,
²Institute of Metals and Technology, (SI): **Assessing the Quality of Grain Refiners** / Ocena kakovosti udrobnilnih sredstev
3. I. VASKOVÁ¹, P. DELIMANOVÁ¹, M. HRUBOVČÁKOVÁ¹, L. JANKOVČIN², ¹Technical University of Kosice, ²Handtmann Slovakia, (SK): **Some Knowledge of the Development and Use of Molding and Core Mixtures in Foundry Industry** / Ugotovitve iz razvoja uporabe peščenih mešanic za forme in jedra v livarski industriji
4. Ł. SZYMAŃSKI¹, A. BIGOS², M. PIESZCZEK^{1,3}, K. ŻAK¹, F. WOŹNIAK¹, N. SOBCZAK², J. SOBCZAK¹, S. SOBULA¹, E. OLEJNIK^{1,3}, P. KURTYKA³, ¹AGH University of Science and Technology in Cracow, Faculty of Foundry Engineering, ²Polish Academy of Sciences, Institute of Metallurgy and Materials Science, Cracow, ³Innerco sp. z o.o., Cracow, (PL): **Microstructure, Mechanical Properties and Wear Performance of Composite Casting Reinforced by Oxide Ceramic** / Mikrostruktura, mehanske lastnosti in obrabna obstojnost kompozitnih ulitkov ojačanih z oksidno keramiko
5. Ł. SZYMAŃSKI¹, J. SOBCZAK¹, N. SOBCZAK², A. BIGOS², T. TOKARSKI⁴, W. MAZIARZ², E. OLEJNIK^{1,3}, R. CHULIST², K. ŻAK¹, G. BRUZDA⁵, ¹AGH University of Science and Technology, Faculty of Foundry Engineering, ²Polish Academy of Sciences, Institute of Metallurgy and Materials Science, ³AGH University of Science, Academic Centre of Materials and Nanotechnology, ⁴INNERCO sp. z o.o., ⁵Łukasiewicz Research Network – Krakow Institute of Technology, (PL): **Meaning of the High-Temperature Wettability in the Aspect of Manufacturing Metal Matrix Composite Reinforced by Ceramic Phases** / Pomen visoko temperaturne omočljivosti z vidika izdelave kompozita s kovinsko osnovo ojačanega s keramičnimi fazami