

PROGRAMME / PROGRAM

64th IFC Portoroz 2024 / 64. IFC Portorož 2024

Wednesday / Sreda, 18. 09. 2024

- 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, 19. 09. 2024

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

Thursday/Četrtek, 19. 09. 2024

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 ► R. DEIKE, University Duisburg Essen (D): **What do we currently**
know about the future development of the foundry industry in
europa? / Kaj danes vemo o bodočem razvoju na področju livarstva v
Evropi?
- 10.15–10.45 G.GEIER, D. HOWE, Siempelkamp Giesserei GmbH (DE): **New game**
changers to increase competitiveness. Practical examples of
digitalization and automation in hand mould foundries to increase
productivity and quality while reducing costs / Nova pravila igre za
povečanje konkurenčnosti: Praktični primeri digitalizacije in
avtomatizacije v livarnah z ročnim formanjem za povečanje
produktivnosti in kvalitete in zmanjšanju stroškov

► Invited Lecture / Vabljen predavanje

10.45–11.15 P. MRVAR, M. PETRIČ¹, A. MAHMUTOVIĆ², S. KASTELIC^{2,1} in M. ŽBONTAR¹, ¹University of Ljubljana, Faculty of Natural Sciences and Engineering, ² TC livarstvo (SI): **Determination of nonmetallic inclusions in AlMg6Si2MnZr alloy**/ Določanje nekovinskih vključkov v zlitini AlMg6Si2MnZr

11.15–11.45 **Break / Odmor**

11.45–12.15 ► D.M. STEFANESCU, The Ohio State University, Columbus, OH and The University of Alabama, Tuscaloosa (USA): **Thermal analysis of casting alloys—techniques and applications** /Termična analiza livarskih zlitin – tehnike in aplikacije

12.15–12.45 ► K. WEISS, C. BAITIANG, RWP. Gesellschaft beratender Ingenieure für Berechnung und rechnergestützte Simulation m.b.H. (D): **One step ahead to achieve future competitiveness and sustainability with the aid of process data analytics for foundries** / Korak naprej za doseganju konkurenčnosti in trajnosti s pomočjo analitične obdelave podatkov v livarnah

12.45–13.15 ► J. MEDVED, T. BALAŠKO, M. VONČINA, University of Ljubljana, Faculty of Natural Sciences and Engineering, Department of Materials and Metallurgy (SI): **The role of higher education in the training of professionals and the transfer of knowledge to industry**/ Poslanstvo visokošolskega izobraževanja pri usposabljanju strokovnjakov in prenosu znanja v industrijo

Lecture by the general sponsor / Predavanje generalnega pokrovitelja

OLMA d.o.o. / QUEKER HOUGHTON

13:15-13:30 D. JEZIERSKI, Quaker Houghton (NL): **Sustainability and EV in foundries** / Trajnost in električna vozila v livarnah

13.30–15.15 **Lunch Break / Kosilo**

15.15–15.45 C. MUELLER, Laempe Mössner Sinto GmbH (D): **The hybrid and digital core shop of the future** / Hibridne in digitalne jedrarne prihodnosti

► Invited Lecture / Vabljen predavanje

15.45–16.15 H. BRAMANN, H. ROCKMANN, MAGMA Gießereitechnologie GmbH (D): **Virtual process industrialization of magnesium thixomolding /** Virtualni proces industrializacije litja magnezija s thixomolding postopkom

16.15–16.30 **Break / Odmor**

16.30–17.00 ▶ M. BERBIĆ, P. HOFER-HAUSER, R. GSCHWANDTNER, Austrian Foundry Research Institut ÖGI (A): **New quantitative test methods for a realistic determination of the coating durability in die casting /** Nove količinske testne metode za realno določitev obstojnosti premazov pri kokilnem litju

17.00–17.30 ▶ A. NOFAL, CMRDI (EG): **Fifty years of cast iron research at CMRDI /** Petdeset let raziskav sivih litin na CMRDI

Thursday Evening / Četrtek večer, 19. 09. 2024

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

Friday / Petek, 20. 09. 2024

Hall/Hala

SECTION / SEKCIJA A:

Amerigo Vespucci

Cast Iron, Foundry Techniques and Technology /

Železove litine, livarske tehnike in tehnologije

9.00–9.20 J. HOMAR, R. P. JUNG, C. STÖLTING, Resand Oy (FIN): **Thermomechanical sand reclamation /** Termomehanska regeneracija peska

9.20–9.40 J. PROHAZKA, T. BAJER, J. BENO, SAND TEAM, spol. s r.o. (CZ): **Introduction of the new Omega Sinto agent and its portfolio /** Predstavitev novega Omega Sinto zastopnika in njegovega portfelja

9.40–10.00 A. TEKAVČIČ, J. POKLIČ, J. VRANC, Kovis Livarna d.o.o. (SI): **Green transformation and sustainability measures in cast iron foundries /** Zeleni prehod in trajnostni vidiki v livarnah železovih litin

▶ Invited Lecture / Vabljen predavanje

10.00–10.15

Break / Odmor

10.15–10.35

R. OPACITY¹, K. WAKITA², S. MURATA², ¹Itochu Europe PLC (UK), ²Itochu Ceratech Corporation (JP): **Comparison of various ceramic sands, way to environmentally friendly and costbeneficial foundry solution/** Primerjava različnih keramičnih peskov, pot do okolju prijaznih in cenovno ugodnih livarskih rešitev

10.35–10.55

M. PESCI¹, S. AL JASIM², ¹HA ITALIA S.p.A. (IT), ²KovisLivarna d.o.o. (SI): **A new shape of tele miniriser for an increased thermal efficiency /** Nova oblika mini napajalnikov za povečanje toplotnega izkoristka

10.55–11.15

G. KLANČNIK¹, M. BOJINOVIČ¹, A. RESNIK², L. KRAJNC¹, ¹Pro Labor d.o.o., ²Omco Metals Slovenia d.o.o (SI) :**Advanced control over the gray cast iron properties concerning the quality of secondary material used during the melt preparation – a case study /** Napreden nadzor pri uporabi različnih sekundarnih materialov pri pripravi taline sive litine za doseg ciljanih končnih karakteristik - študija

11.15–11.30

Break / Odmor

11.30–11.50

D. HOLLAND, CALDERYS DEUTSCHLAND (D): **Environmentally friendly & sustanaible solutions for induction furnaces /** Okolju prijazne in trajnostne rešitve za indukcijske peči

11.50–12.10

L. HORN, R. DEIKE, Universität Duisburg Essen (D): **Intersections between CO₂ reducing operating points during the operation of blast furnaces and cupola furnaces, within the context of carbon capture and utilization (ccu): a steel making perspective /** Presečišče med delovnimi točkami, ki zmanjšujejo CO₂ pri obratovanju plavžev in kupolnih peči v kontekstu zajemanja in uporabe ogljika (ccu): perspektiva proizvodnje jekla

12.10-12.30

F. MALIN, A. LUKAČ,TERMIT D.D. (SI): **Ecofriendly antiveining coating for cold box cores without additive/** Okolju prijazen premaz z višjim efektom proti pokanju cold box jeder

12.30-12.45

Break/Odmor

12.45–13.05 G. KARAGÜLMEZ, R. DEIKE, Universität Duisburg Essen (D): **Optimization of graphite precipitation in cast iron: investigation of sulfide nucleation through sulfur and manganese enrichment / Optimizacija strjevanja grafita v sivi litini: raziskava sulfidne nukleacije z obogatitvijo z žveplom in manganom**

13.05-13.25 I. ŠKRINJAR, Weiler Abrasives (SI): **Grinding tools in the foundry industry/ Brusna orodja v livarski industriji**

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

Friday / Petek, 20. 09. 2024

Hall/Hala

SECTION / SEKCIJA B:

Cristoforo Colombo

Non-ferrous Alloys / Neželezne zlitine

9.00–9.20 V. KRUTIŠ¹, V. KAŇA¹, A. ZÁDĚRA¹, V. BRYKSÍ², ¹ Institute of Manufacturing Technology, Brno University of Technology, ² Kovolis Hedvikov a.s. (CZ): **Determination of boundary conditions for the definition of numerical simulation of HPDC/ Določitev robnih pogojev za definiranje numeričnega izračuna tlačnega litja**

9.20–9.40 ► L. MAZZONI, PIQ2 (IT): **High pressure die casting expert system based optimization and dual phase simulation / Optimizacija tlačnega litja na osnovi ekspertnega sistema in dvofazne simulacije**

9.40–10.00 F. ZUPANIČ⁽¹⁾, T. HAGA⁽²⁾, T. BONČINA, ⁽¹⁾ University of Maribor, Faculty of Mechanical Engineering (SI), ⁽²⁾ Osaka Institute of Technology, Department of Mechanical Engineering (JP): **Microstructure of a microalloyed AlMnCu alloy, cast by rapid asymmetric dualroll casting/ Mikrostruktura mikrolegirane zlitine AlMnCu, ulite s postopkom hitrega asimetričnega dvovaljnega litja**

10.00–10.15 **Break / Odmor**

10.15–10.35 J. LI, Montanuniversität Leoben (AT): **AlCuMg based composites produced by additive manufacturing / Kompoziti na bazi AlCuMg izdelani s tehnikami aditivne proizvodnje**

10.35–10.55 D. MOLNAR, G. GYARMATI, University of Miskolc (HU): **Analysis of the quality of aluminum alloy ingots / Analiza kakovosti ingotov iz aluminijevih zlitin**

► Invited Lecture / Vabljen predavanje

10.55–11.15	D. LORBER ¹ , M. PLANINŠEK ¹ , V. TUBIN ¹ , J. FERČIČ ¹ , S. ŠIMENKO ¹ , P. MARINIČ ¹ , ¹ Talum d.d. (SI): Digitalization transformation of production processes /Digitalna transformacija proizvodnih procesov
11.15–11.30	Break / Odmor
11.30–11.50	R. RUDOLF ^{1,2} , P. MAJERIČ ^{1,2} , G. VASTAG ³ , V. LAZIČ ⁴ ¹ University of Maribor (SI), ² Zlatarna Celje d.o.o. (SI), ³ University of Novi Sad (RS), ⁴ University of Belgrade (RS): State of the art and development of gold dental alloys / Stanje tehnike in razvoj zlatih dentalnih zlitin
11.50–12.10	K. DUH ¹ , J. POTOČNIK ¹ , A. MAHMUTOVIČ ² , S. KASTELIČ ² , ¹ Talum Kidričevo d.d., ² TC Livarstvo d.o.o. (SI): Inlet optimisation of thin wall castings (TGDC) with sand core / Optimizacija ulivnega sistema tankostenskih ulitkov (TGDC) s peščenim jedrom
12.10 - 12.30	M. FASSINA, ItalPresseGauss (IT): Sustainable aluminium die casting as a competitive strategy: three practical focus areas / Trajnostno visoko tlačno litje aluminija kot konkurenčna strategija: fokus treh praktičnih področij
12.30–12.45	Break / Odmor
12.45 – 13.05	S. NIKOLAUS, Foundry Service GmbH (D): Batteryoperated ladle drives and SLC Ladle management / Baterijsko gnani pogoni ponvic in SLC upravljanje ponvic
13.05 – 13.25	S. KASTELIČ ^{1,2} , A. MAHMUTOVIČ ² , M. ŽBONTAR ¹ , M. PETRIČ ¹ , P. MRVAR ¹ , ¹ University of Ljubljana, Faculty of natural sciences and engineering (SI), ² TC Livarstvo d.o.o. (SI): Implementation of vacuum system in HPDC using numerical analysis of filling and solidification / Implementacija vakuuma pri tlačnem litju na podlagi numerične analiza litja in strjevanja
13.30	Conclusion of the Conference With Lunch / Zaključek konference s kosilom

Friday / Petek, 20. 09. 2024

Hall/Hala

SECTION C / SEKCIJA C:

Fernand de Magellan

Young Lecturers and Researchers

- 9.00 – 9.20** G. IUREVA¹, A. HAEMMERLE², J. LI¹, ¹ Institute of Casting Research, Montanuniversität Leoben, ² Neuman Aluminium Fließpresswerk GmbH (A): **Characterizing microstructure variability in recycled 6082 aluminium alloy for sustainable manufacturing**/Karakterizacija spreminjanja mikrostrukture v reciklirani 6082 aluminijevi zlitini za trajnostno proizvodnjo
- 9.20 – 9.40** M. CAMPANELLA¹, A. PICCININNI¹, P. GUGLIELMI¹, A. CUSANNO¹, G.PALUMBO¹, L. MAZZONI², F.LEMBO³, ¹ Department of Mechanics, Mathematics and Management, Polytechnic Of Bari, ² PiQ2 Castle, ³ Master Italy s.r.l (IT): **Numerical investigation of the cooling system of a highpressure die casting mould adopting waterless release agents**/Numerična analiza hladilnega sistema orodja za tlačno litje z implementacijo brezvodnega ločilnega sredstva
- 9.40 – 10.00** O. ASGHAR ¹, F. BONOLLO ¹, M. DA SILVA ², ¹ Department of Engineering and Management, University of Padova (IT), ² Eurecat, Centre Tecnològic de Catalunya, Metallic and Ceramic Materials Unit, Av. Universitat Autònoma (ES): **Fluidity of aluminium foundry alloys for thin wall castings; designing of operating methodology**/Livnost livarskih aluminijevih zlitin za tankostenske ulitke; dizajniranje in operativne metode
- 10.00–10.15** **Break / Odmor**
- 10.15 – 10.35** D.R. GRUSZKA, R. DAŃKO, M. SKRZYŃSKI, A. KMITA, AGH University of Krakow (PL): **Research on the influence of layer orientation on the strength properties of additively manufactured moulds and cores in binder jetting technology** / Raziskava o vplivu orientacije plasti na trdnostne lastnosti aditivno izdelanih form in jeder s tehnologijo brizganja veziva
- 10.35 – 10.55** L. HAJAS, D. MOLNÁR, University of Miskolc (HU): **From investment to sand casting technology – case study** / Od precizijskega litja do litja v pesek – študija primera

Poster Presentations / Plakatne predstavitve

1. VASKOVÁ, P. DELIMANOVÁ, Technical University of Košice (SK): **Foundry sand as the main factor in the final quality of the casting** / Livarski pesek kot glavni factor pri končni kvaliteti ulitka
2. Ł. SZYMAŃSKI¹, E. OLEJNIK², J. SOBCZAK¹, M. SZALA³, P. KURTYKA², T. TOKARSKI⁴, A. JANAS¹, ¹AGH University of Krakow, Faculty of Foundry Engineering, ²Innerco sp. z o.o., Cracow, ³Lublin University of Technology, Faculty of Mechanical Engineering, ⁴AGH University of Krakow, Academic Centre of Materials and Nanotechnology (PL): **Reactive casting coatings for obtaining in situ composite layers reinforced by titanium carbide** / Reaktivni livarski premazi za doseganje in situ kompozitnih plasti ojačenih s titanovim karbidom
3. J. BOROWIECKA JAMROZEK, Kielce University of Technology (PL): **Processing and properties of porous AcAlSi11 Silumin Matrix composites by casting** / Procesiranje in lastnosti poroznega kompozita z AcAlSi11 siluminsko osnovo
4. J. KASIŃSKA, Kielce University of Technology (PL): **Nondestructive method for assessing the degree of microstructure degradation of metals and alloys** / Neporušna metoda za oceno stopnje degradacije mikrostrukture pri kovinah in zlitinah
5. M. VONČINA ⁽¹⁾, T. BALAŠKO ⁽¹⁾, S. KORES ⁽²⁾, T. PREMUŽIČ IN J. MEDVED ⁽¹⁾, ⁽¹⁾ University of Ljubljana, Faculty of Natural Sciences and Engineering, Department of Materials and Metallurgy, ⁽²⁾ Talum, Aluminium factory d.d. (SI): **Knowledge transfer from university to industry optimization of billets production from highquality aluminum alloy EN AW6082**/Prenosa znanja iz univerze v industrijo optimiranje proizvodnje drogov iz aluminijeve zlitine EN AW6082 visoke kakovosti
6. M. PETRIČ^{1,4}, J. SMOLE², L. GRAHEK³, N. NEMEČEK⁴, D. MUCK¹, M. BLEČIČ KAVUR⁵, B. ŽUŽEK⁶, B. ŠETINA BATIČ⁶, P. FAJFAR¹, P. MRVAR¹, ¹ University of Ljubljana, Faculty of Natural Sciences and Engineering, ² University of Ljubljana, Academy of Fine Arts and Design, ³ ZRC SAZU, Institute of Archaeology, ⁴ National Museum of Slovenia, ⁵ University of Primorska, Faculty of Humanities, ⁶ Institute of Metals and Technology (SI): **Production of cast replica of archaeological find – Negova helmet**/ Izdelava lite replike arheološke najdbe – Negovske čelade
7. J. MRVAR¹, A. MAHMUTOVIĆ², S. KASTELIC¹, M. PETRIČ¹, ¹ University of Ljubljana, ² TC LIVARSTVO (SI): **Comprehensive mastery of investment casting using permanent inserts**/ Celovito obvladovanje precizijskega litja z uporabo trajnih vložkov
8. Z. ZOVKO BRODARAC¹, F. KOZINA¹, J. BURJA^{2,3}, B. ŠETINA BATIČ³, D. STANIĆ⁴, M. FOLTA⁵ ¹ University of Zagreb Faculty of Metallurgy, Sisak (HR), ² University of Ljubljana Faculty of Natural Sciences and Engineering, Ljubljana (SI), ³ Institute of Metals and Technology, Ljubljana (SI), ⁴ Istrian University of Applied Sciences, Pula (HR), ⁵ Škoda Auto Vysoká Škola o.p.s., Mladá Boleslav (CZ): **Influence of heat treatment on microstructure of recycled AlSi9Cu3(Fe) alloy**/ Vpliv toplotne obdelave na mikrostrukturo reciklirane zlitine AlSi9Cu3(Fe)

13.30

Conclusion of the Conference With Lunch / Zaključek konference s kosilom