

PROGRAMME / PROGRAM

65th IFC Portoroz 2025 / 65. IFC Portorož 2025

Wednesday / Sreda, 17/09/2025

- 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, 18/09/2025

- 7.30 – further / dalje** **Registration of participants at the Conference reception desk /**
Prijava udeležencev na recepciji konference

Thursday / Četrtek, 18/09/2025

Hall/Hala

Plenary lectures / Plenarna predavanja

Cristoforo Colombo

- 9.30 – 9.45** MIRJAM JAN-BLAŽIČ,
President / Predsednica Slovenian Foundrymen Society
The Opening Address/ Uvodni nagovor
- 9.45 – 10.15** J. J. GONZÁLEZ, The World Foundry Organization WFO (UK): **Current**
situation and cooperative challenges for foundry / Trenutno stanje
in kooperativni izzivi za livarstvo
- 10.15 – 10.45** M. SCHUMACHER, S. TEWES, German Foundry Association, BDG (D):
Roadmap to greenhouse gas neutrality for the german foundry
industry – four decarbonisation pathways by 2045 / Načrt za
nevtalizacijo toplogrednih plinov za nemško livarsko industrijo – štiri poti
do razogljičenja do leta 2045
- 10.45 – 11.15** ► P. MRVAR¹, M. PETRIČ¹, H. PALKOWSKI², S. KASTELIC³, A.
CARRADÓ⁴, ¹Department of Materials and Metallurgy, Faculty of
Natural Sciences and Engineering, University of Ljubljana (SI), ²Institute
of Metallurgy, Clausthal University of Technology, Clausthal-Zellerfeld,
(D), ³TC Livarstvo d.o.o. (SI), ⁴Institut de Physique et de Chimie des

► Invited Lecture / Vabljen predavatelj

Matériaux de Strasbourg, CNRS UMR, (F): **Gravity, centrifugal and HPDC casting of composed as-cast foam from biodegradable ZnMg1,5 alloy** / Gravitacijsko, centrifugalno in tlačno litje sestavljenih litih biorazgradljivih kovinskih pen iz zlitine ZnMg1,5

11.15 – 11.45

Break / Odmor

11.45 – 12.15

► R. DEIKE¹, I. ADHIWIGUNA², L. ZACHARROPOULS¹;
J. GELDRMANN¹, R. WARNECKE³, ¹University Duisburg-Essen (D), ²
Pt. Zenith Allmart Precisindo, (ID), ³ GKS Gemeinschaftskraftwerk
Schweinfurt GmbH (D): **The incinerator bottom ash (iba) is a future
sustainable source for ferrous, non-ferrous, and precious metals
used in the metallurgical industry** / Pepel iz sežigalnic je trajnostni vir
za železove, neželezne in plemenite kovine, ki se uporabljajo v
metalurški industriji

12.15 – 12.45

► J.X. ZHOU, X.W. QIAN, X.Y. JI, Y.J. YIN, W. LI, X. SHEN, Y.C. LI,
State Key Lab of Material Processing and Die & Mould Technology,
Huazhong University of Science and Technology (PRC): **"1+N" digital
foundry innovation platform and its applications** / "1+N" Inovativna
platforma digitalne livarne in njene aplikacije

12.45 – 13.15

► P. HOFER-HAUSER¹, M. PAMMER¹, T.L.S. STOISSER², F.
RÖPER³, R. GSCHWANDTNER³, ¹Technical University of Leoben (AT),
²SHW AG (D), ³Austrian Foundry Research Institute (AT): **Rheocasting
as a key technology for circular economy in the aluminium foundry**
/ Rheocastnig kot ključna tehnologija krožne ekonomije v livarnah
aluminija

13.15 – 15.00

Lunch Break / Kosilo

15.00 – 15.30

► J. MEDVED¹, M. VONČINA¹, T. BALAŠKO¹, J. BURJA², K.
GRABNAR³, ¹University of Ljubljana, Faculty of Natural Sciences and
Engineering, Department for Materials and Metallurgy (SI), ² Institute of
Metals and Technology (SI), ³ Metal Tech Solutions d.o.o. (SI): **Wear
resistance of hot-work tool steel with high thermal conductivity in
molten aluminium** / Obrabna obstojnost orodnega jekla za delo v
vročem z visoko toplotno prevodnostjo v talini aluminija

15.30 – 16.00

M. GAMISCH, Fill Gesellschaft m.b.H. (AT): **Challenges in the
machining of large castings** / Izzivi pri mehanski obdelavi velikih
ulitkov

16.00 – 16.15

Break / Odmor

16.15 – 16.45

F. HOFSTÄTTER, SAG New Technologies GmbH (AT): **Enhancing
lightweight automotive components: a comparative analysis of
rheocasting and high-pressure die casting** / Izboljšanje lahkih
avtomobilskih komponent: Primerjalna analiza rheocastinga in tlačnega
litja

16.45 – 17.15

B. KANDUS, M. ŠIFRER, T. VOLGEMUT, SAVENA d. o. o. (SI): **Added
value of energy management systems** / Dodana vrednost sistemov
upravljanja z energijo

Thursday Evening / Četrtek večer, 18/09/2025

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

Friday / Petek, 19/09/2025

Hall/Hala

SECTION / SEKCIJA A,

Amerigo Vespucci

Cast Iron, Foundry Techniques and Technology /

Železove litine, livarske tehnike in tehnologije

9.00 – 9.20

► CH. KNEISSL¹, W. FUNK¹, DR. E. KASCHNITZ¹, DR. T. PABEL¹, HEINZ HOLZER¹, H. SCHROETTNER^{2,3}, H. HAIDER⁴, ¹Austrian Foundry Research Institute (AT), ²Institute of Electron Microscopy and Nanoanalysis (AT), ³Graz Centre for Electron Microscopy (AT), ⁴OFI Technologie & Innovation GmbH (AT): **3D-MeKuH - optimisation of additive manufacturing characterisation of anisotropy in 3D printed materials** / 3D-MeKuH – Optimizacija aditivne proizvodnje s karakterizacijo anizotropnosti v 3D natisnjenih materialih

9.20 – 9.40

Y. YANG, X. DUAN, Hunan Central South Intelligent Equipment Co., Ltd (PRC): **A hybridization of embodied artificial intelligence and digital twin for casting** / Hibridizacija utelešene umetne inteligence in digitalnega dvojčka za litje

9.40 – 10.00

► D. MOLNÁR, H. HUDÁK, J. ERDÉLYI, University of Miskolc (HU): **Development of cast iron materials for automotive brake systems** / Razvoj sive litine za zavorne sisteme v avtomobilski industriji

10.00 – 10.15

Break / Odmor

10.15 – 10.35

A. TEKAVČIČ, J. POKLIČ, J. VRANC, Kovis Livarna d.o.o. (SI): **Development of the foundry sand recycling process in the manufacturing process of components for the railway industry** / Razvoj procesa reciklaže livarskega peska v procesu izdelave komponent za železniško industrijo

10.35 – 10.55

C. MUELLER, Laempe Mössner Sinto GmbH (D): **Advantages of casting production with additively manufactured sand cores / molds** / Prednosti proizvodnje ulitkov s peščenimi jedri / formami izdelanimi z aditivno tehnologijo

10.55 – 11.15

T. HOF, A. KIRCHNER, HEINRICH WAGNER SINTO MASCHINENFABRIK GmbH (D): **Increasing the efficiency of sand foundries** / Povečanje učinkovitosti livarn, ki uporabljajo peščene mešanice

► Invited Lecture / Vabljen predavatelj

11.15 – 11.30	Break / Odmor
11.30 – 11.50	► E. KOPPENSTEINER, T. PETKOV, Austrian Foundry Research Institute (AT): Reproduction of industrial melting processes on a laboratory scale for process optimization / Reprodukcijska industrijskih talilnih procesov v laboratorijskem merilu za optimizacijo procesov
11.50 – 12.10	B. DAMJANOVIĆ, A. VELIČEVIČ, Kremen d.o.o. (SI): Exploitation and economic viability of underutilized resources of quartz sand in european quarries / Izkoriščanje in ekonomska upravičenost premalo izkoriščenih virov kremenčevega peska v evropskih kamnolomih
12.10 – 12.30	A. ŠUC ¹ , U. KLANČNIK ¹ , B. KOŠEC ¹ , M. AIGNER ² , M. DROBNE ¹ , ¹ Valji d.o.o. (SI), ² Eisenwerk Sulzau-Werfen (AT): Development of a pinch roll with a working layer made of high alloyed cast iron / Razvoj stiskalnega valja z delovno plastjo iz visoko legiranega litega železa
12.30 – 12.45	Break/Odmor
12.45 – 13.05	► M. SLOVÁČEK, J. KUBÍČEK, Brno, University of technology (CZ): Casting repairs by welding / Popravila ulitkov z varjenjem
13.05 – 13.25	J. PROCHAZKA, J. BENO, SAND TEAM, SPOL. S R.O. (CZ): Practical experiences with inorganic no bake mixtures in iron foundry / Praktične izkušnje z anorganskimi No-bake mešanicami v livarni železa
13.25 – 13.45	E. OFFENBACHER, P&P Industries AG (AT): Denox+ as multifunctional waste gas treatment / Denox+ kot večnamensko čistilno sredstvo za odpadne pline
13.50	Conclusion of the Conference With Lunch / Zaključek konference s kosilom

Friday / Petek, 19/09/2025

SECTION / SEKCIJA B:

Non-ferrous Alloys / Neželezove zlitine

Hall/Hala

Cristoforo Colombo

9.00 – 9.20	► M. PETRIČ ¹ , S. KASTELIC ¹ , L. KOŠMERL ¹ , B. ŽUŽEK ² , J. BRCE ¹ , P. MRVAR ¹ , ¹ Faculty of Natural Sciences and Engineering, University of Ljubljana (SI), ² Inštitut za materiale in tehnologije (SI): Dimensional and mechanical properties of ceramic shells for investment casting / Dimenzijske in mehanske lastnosti keramičnih školjk za precizijsko litje
9.20 – 9.40	► J. LI, Montanuniversität Leoben (AT): Recycling Al-based powders for re-additive manufacturing / Recikliranje praškov na osnovi Al za ponovno aditivno proizvodnjo
9.40 – 10.00	► V. KRUTIŠ, R. ŠTĚPÁN, R. JELÍNEK, A. ZÁDĚRA, Brno University of Technology (CZ): Analysis of parameters affecting fluidity for Al thin-walled castings in the investment casting technology / Analiza

parametrov, ki vplivajo na livnost Al tankostenskih ulitkov pri precizijskem litju

10.00 – 10.15	Break / Odmor
10.15 – 10.35	►Y.Z. CHEN ^{1,2} , F. LIN ¹ , C. LI ^{1,2} , J. WAN ¹ , J.Y. WANG ² , Z.Q. LIU ² , Y.Y. WANG ² , ¹ State Key Lab of Solidification Processing, Northwestern Polytechnical University (PRC), ² Suzhou Yunjing Metal Technology Co., Ltd. (PRC): Hot work steels for additive manufacture and additive manufacturing of high pressure die casting die inserts / Jekla za delo v vročem za aditivno proizvodnjo in aditivno proizvodnjo vložkov za tlačno litje
10.35 – 10.55	J. ARBEITER, N. NEMEC, A. DEZHURNOV, B. TOLAR, LTH Castings d.o.o. (SI): Influential factors on the mechanical properties of aluminum high-pressure die castings / Vplivni faktorji na mehanske lastnosti aluminijevih tlačnih ulitkov
10.55 – 11.15	►R. RUDOLF ^{1,2} , P. MAJERIČ ^{1,2} , V. LAZIĆ ³ , ¹ University of Maribor, Faculty of Mechanical Engineering, (SI), ² Zlatarna Celje d.o.o. (SI) ³ Clinic for Prosthodontics, School of Dental Medicine, University of Belgrade (SRB): State of the art and development of gold dental alloys / Stanje tehnike in razvoj zlatih dentalnih zlitin
11.15 – 11.30	Break / Odmor
11.30 – 11.50	►H. Z. FANG, X. K. YANG, L. Y. ZHOU, K. X. LI, J. S. LIANG, School of Materials Science and Engineering, Harbin Institute of Technology (PRC): Lamellar orientation control and mechanical property optimization of TiAl alloy / Nadzor orientacije lamel in optimizacija mehanskih lastnosti zlitine TiAl
11.50 – 12.10	U. KOVAČEC ¹ , F. ZUPANIČ ² , T. BONČINA ² , ¹ Impol d.o.o (SI), ² University of Maribor (SI): Melt refining of wrought aluminium alloys with increased fractions of external scrap / Rafinacija talno preoblikovalnih aluminijevih zlitin s povečanim deležem po-potrošniških surovin
12.10 – 12.30	►Z. ZOVKO BRODAC ¹ , F. KOZINA ¹ , M. PAPEŠ ² , S. LAZIĆ ³ , ¹ University of Zagreb Faculty of Metallurgy, Sisak (CRO), ² Ministry of Finance, Customs Administration, Customs Office Sisak (CRO), ³ CIAL d.o.o. Sisak (CRO): Solidification modeling and corrosion behavior of recycled aluminium De-OX alloy / Modeliranje strjevanja in korozijske lastnosti reciklirane aluminijeve zlitine De-OX
12.30 – 12.45	Break / Odmor
12.45 – 13.05	A. STONE, MAXImolding! Technology GmbH (D): CCDC2.0: from chips to parts with MAXImolding reactor attachment to cold chamber die casting machine / CCDC2.0: od granulata do izdelka z MAXImolding reaktorjem dodanim na hladno komorni tlačni stroj
13.05 – 13.25	►R. CHEN, S. SUN, Y. LI, J. HAO, X. XUE, H. FANG, School of Materials Science and Engineering, Harbin Institute of Technology (PRC): Multiscale simulation design and preparation of ultra-high

strength and toughness titanium alloy / Večstopenjska simulacijska zasnova in priprava titanove zlitine ultra visoke trdnosti in žilavosti

13.25 – 13.45

► G. GYARMATI, J. ERDÉLYI, University of Miskolc (HU): **Ductility improvement of Al-5Mg-2Fe alloy by melt treatment with a custom flux mixture** / Izboljšanje duktilnosti zlitine Al-5Mg-2Fe z obdelavo taline s posebno mešanico talila

13.50

Conclusion of the Conference With Lunch / Zaključek konference s kosilom

Friday / Petek, 19/09/2025	Hall/Hala
SECTION C / SEKCIJA C: Young Lecturers and Researchers	Fernand de Magellan

9.00 – 9.20

M. BALANT¹, R. RUDOLF^{2,3,4}, T. VUHERER², ¹Starkom (SI), ²University of Maribor (SI), ³Zlatarna Celje (SI), ⁴Pomurje Science and Innovation Centre (SI): **Characterization of Al-alloy EN AW-5454 intended for laser hybrid welding** / Karakterizacija Al-zlitine EN AW-5454 namenjene za lasersko hibridno varjenje

9.20 – 9.40

L. HAJAS, D. MOLNÁR, G. GYARMATI, University of Miskolc (HU): **Development of a Zr-containing grain refining flux and its effect on the properties of an AlSi10Mg casting alloy** / Razvoj talila, ki vsebuje Zr za udrobnjevanje in njegov vpliv na lastnosti livarske zlitine AlSi10Mg

9.40 – 10.00

X.X. YANG, P. YU, X.Y. JI, W.H. ZHOU, M.J. HOU, X.M. TU, Y.J. YIN, J.X. ZHOU, National Key Laboratory of Materials Forming and Die Technology, Huazhong University of Science and Technology (PRC): **Defect prediction in titanium alloy casing castings via data-simulation integration** / Napovedovanje napak v ulitkih ohišij iz titanovih zlitin z integracijo simulacije podatkov

10.00 – 10.15

Break / Odmor

10.15 – 10.35

G. IUREVA¹, J. PÖLZL¹, T. HÖSELE¹, M. PAMMER¹, P. HOFER-HAUSER¹, A. HAEMMERLE², P. PROKOP², J. LI¹, ¹ Technical University of Leoben (AT), ²Neuman Aluminium GmbH (AT): **Laboratory-scale direct chill casting of recycled 6082 aluminium alloy** / Laboratorijsko kontinuirno litje reciklirane aluminijeve zlitine 6082

10.35 – 10.55

L. KRESNIK¹, P. MAJERIČ^{1,2}, R. RUDOLF^{1,2,3}, ¹Faculty of Mechanical Engineering, University of Maribor (SI), ²Zlatarna Celje d.o.o. (SI), ³Pomurje science and innovation centre (SI): **Study of high-frequency signal losses in printed circuits fabricated with gold nanoparticles** / Študija izgub visokofrekvenčnih signalov v tiskanih vezjih pripravljenih z nanodelci zlata

10.55 – 11.15

V. NYESTE, D. MOLNÁR, V. MERTINGER, University of Miskolc (HU): **Effect of parameter changes for local squeezing and mechanical**

Friday / Petek, 19/09/2025

Timetable of Poster Presentations / Urnik posterskih predstavitev

HALL / HALA: James Cook,

In front of the poster place / Pred panojem za posterje

- 9.15 – 9.30** D. B. KARUNAKAR¹, T. MATHEW², ¹Indian Institute of Technology Roorkee (IN), ²COER University, Roorkee (IN): **Evaluation of 3D printed polymer patterns coated with nanofluids for the rapid investment casting process** / Analiza 3D-natisnjenih polimernih vzorcev, prevlečenih z nanotekočinami, za precizijsko litje
- 9.30 – 9.45** Y.X. WANG^{1,2}, Y.C. LI³, Z.F. HE⁴, P.W. WAN⁵, J.X. ZHOU³, ¹China Academy of Machinery Shenyang Research Institute of Foundry Co., Ltd. (PRC), ²Foundry Institution of China Mechanical Engineering Society (PRC), ³State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology (PRC), ⁴Clariant Chemical Technology (Shanghai) Co., Ltd. (PRC), ⁵School of Mechanical and Electrical Engineering, Wuhan Institute of Technology (PRC): **Overview of research and application technology of molding materials presented at the 75th World Foundry Congress** / Pregled raziskav in tehnologij formarskih materialov, predstavljenih na 75. svetovnem livarskem kongresu
- 9.45 – 10.00** R. DAŃKO¹, A. KMITA², P. MALINOWSKI¹, A. MALINOWSKA¹, ¹AGH University of Krakow, Faculty of Foundry Engineering (PL), ²AGH University of Krakow, Academic Centre for Materials and Nanotechnology (PL): **Reducing foundry emissions through innovative molding technologies: Green Casting LIFE project findings** / Zmanjševanje emisij v livarnah z inovativnimi tehnologijami litja: ugotovitve projekta Green Casting LIFE
- 10.15 – 10.30** B. SARAC¹, E. SHARIFIKOLOUEI², Y. ZHENG³, P. HOFER-HAUSER¹, ¹Institute of Casting Research, Montanuniversität Leoben (AT), ²Center for Translational Research on Autoimmune and Allergic Diseases - CAAD, Department of Health Sciences, Università del Piemonte Orientale UPO (IT), ³Key Laboratory of Polar Materials and Devices, Department of Electronics, East China Normal University (PRC): **Amorphous and nanocrystalline stainless steel microfibers: enhanced mechanical properties and corrosion resistance for advanced applications** / Amorfn in nanokristalna mikrovlakna iz nerjavečega jekla: izboljšane mehanske lastnosti in odpornost proti koroziji za napredne aplikacije
- 10.30 – 10.45** S. KASTELIC^{1,2}, A. MAHMUTOVIĆ², M. PETRIČ¹, P. MRVAR¹, ¹Univerza v Ljubljani, Naravoslovnotehniška fakulteta (SI), ²TC Livarstvo d.o.o. (SI): **Optimization of casting based on numerical simulation and the use of a tungsten core** / Optimizacija litja na podlagi numeričnega izračuna in uporabe volframovega jedra

10.45 – 11.00	T. DREVENŠEK ¹ , N. VALENČIČ ¹ , D. VUGA ¹ , M. MAKAROVIČ ¹ , B. PERKO ¹ , N. BALANTIČ ¹ , M. VONČINA ¹ , T. BALAŠKO ¹ , S. KORES ² , ¹ Univerza v Ljubljani, Naravoslovnotehniška fakulteta, Oddelek za materiale in metalurgijo (SI), ² TALUM d.d. (SI): Optimisation of heat treatment to achieve high mechanical properties of an AlSi10MgMn alloy product for e-mobility / Optimizacija toplotne obdelave za doseg visokih mehanskih lastnosti izdelka iz zlitine AlSi10MgMn za e-mobilnost
11.00 – 11.15	J. BOROWIECKA-JAMROZEK, Kielce University of Technology (PL): The effect of addition of the natural zeolite on the microstructure and mechanical properties of sintered iron matrix composite / Vpliv dodatka naravnega zeolita na mikrostrukturo in mehanske lastnosti sintranih kompozitnih materialov s kovinsko matriko
11.30 – 11.45	J. KASIŃSKA, Kielce University of Technology (PL): The role of rare earth metals in shaping alloy properties for defense and industrial applications / Vloga redkih zemeljskih kovin pri oblikovanju lastnosti zlitin za obrambne in industrijske namene
13.30	Conclusion of the Conference With Lunch / Zaključek konference s kosilom