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

Thursday/Četrtek, 18. 09. 2025	**Hall/Hala**
Plenary lectures / Plenarna predavanja	**Cristoforo Colombo**

9.30 – 9.45 MIRJAM JAN–BLAŽIĆ,

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 nevtralizacijo toplogrednih plinov za nemško livarsko industrijo – štiri poti do razogljičenja do leta 2045

10.45 – 11.15 ► P. MRVAR[1], M. PETRIČ[1], H. PALKOWSKI[2], S. KASTELIC[3], A. CARRADÓ[4], [1]Department of Materials and Metallurgy, Faculty of Natural Sciences and Engineering, University of Ljubljana (SI), [2]Institute of Metallurgy, Clausthal University of Technology, Clausthal-Zellerfeld, (DE), [3]TC Livarstvo d.o.o. (SI), [4]Institut de Physique et de Chimie des Matériaux de Strasbourg, CNRS UMR, (F): **Gravity, centrifugal and**

► Invited Lecture / Vabljeno predavanje

	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.DEIKE[1], I.ADHIWIGUNA[2], L.ZACHARROPOULS[1]; J.GELDRMANN[1], R.WARNECKE[3], [1]University 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 aplikacija
12.45 – 13.15	▶ P. HOFER-HAUSER[1], M. PAMMER[1], T.L.S. STOISSER[2], F. RÖPER[3], R. GSCHWANDTNER[3], [1]Technical University of Leoben (AT), [2]SHW AG (D), [3]Austrian 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 – 13.30	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
13.30 – 15.15	**Lunch Break / Kosilo**
15.15 – 15.45	▶ J. MEDVED[1], M. VONČINA[1], T. BALAŠKO[1], J. BURJA[2], K. GRABNAR[3], [1] University 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
15.45 – 16.15	M. GAMISCH, Fill Gesellschaft m.b.H. (AT): **Challenges in the machining of large castings** / Izzivi pri mehanski obdelavi velikih ulitkov
16.30 – 17.00	B. KANDUS, M. ŠIFRER, T. VOLGEMUT, SAVENA d. o. o. (SI) **Added value of energy management systems** / Dodana vrednost sistemov upravljanja z energijo

▶ Invited Lecture / Vabljeno predavanje

Thursday Evening / Četrtkov večer, 18. 09. 2025

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

Friday / Petek, 29. 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. KNEISSL[1], W. FUNK[1], DR. E. KASCHNITZ[1], DR. T. PABEL[1], HEINZ HOLZER[1], H. SCHROETTNER[2,3], H. HAIDER[4] **,** [1]Austrian Foundry Research Institute (AT), [2]Institute of Electron Microscopy and Nanoanalysis (AT), [3]Graz Centre for Electron Microscopy (AT), [4]OFI Technologie & Innovation GmbH (AT)**: 3D-MeKuH - Optimisation of Additive Manufacturing Characterisation of anisotropy in 3D printed materials /** 3D-MeKuH – Optimizacija aditivne proizvodnje s karakterizacijo anizotropije 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 peska v livarnah

► Invited Lecture / Vabljeno predavanje

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** / Reprodukcija 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. BENO, J. PROCHAZKA, SAND TEAM, SPOL. S R.O. (CZ): **Practical experiences with inorganic no bake mixtures in iron foundry** / Praktične izkušnje z anorganskimi mešanicami brez pečenja 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: **Hall/Hala**

Non-ferrous Alloys / Neželezove zlitine **Amerigo Vespucci**

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

► Invited Lecture / Vabljeno predavanje

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 (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 talne preoblikovalnih aluminijevih zlitin s povečanim deležem po-potrošniških surovin
12.10 – 12.30	►Z. ZOVKO BRODARAC[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, Sisak, (CRO), [3]CIAL d.o.o. Sisak (CRO): **Solidification modeling and corrosion behavior of recycled aluminium DeOX alloy** / Modeliranje strjevanja in korozijske lastnosti reciklirane aluminijeve zlitine DeOX
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

► Invited Lecture / Vabljeno predavanje

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:	**Fernand de Magellan**
Young Lecturers and Researchers	

9.00 – 9.20	M. BALANT[1], R. RUDOLF [2,3,4], T. VUHERER[2], [1]Starkom (SI), [2]University of Maribor (SI), [3]Zlatarna Celje (SI), [4]Pomurje 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 modificiranje 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. Iureva[1], J. Pölzl[1], T. Hösele[1], M. Pammer[1], P. Hofer-Hauser[1], A. Haemmerle[2], P. Prokop[2], J. Li[1], [1] Technical University of Leoben (AT), [2]Neuman 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. KRESNIK[1], P. MAJERIČ[1,2], R. RUDOLF[1,2,3], [1]Faculty of Mechanical Engineering, University of Maribor (SI), [2]Zlatarna Celje d.o.o. (SI), [3]Pomurje science and innovation centre (SI): **Study of high-frequency signal losses in printed circuits fabricated with gold nanoparticles** / Študija izgub visokofrekvečnih 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 properties** / Vpliv sprememb parametrov na lokalno stiskanje in mehanske lastnosti

► Invited Lecture / Vabljeno predavanje

Poster Presentations / Plakatne predstavitve

1. D. BENNY KARUNAKAR[1], THOMAS MATHEW[2], [1]Indian Institute of Technology Roorkee (IND), [2]COER University, Roorkee (IND): **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

2. Y.X. WANG[1,2], Y.C. LI[3], Z.F. HE[4], P.W. WAN[5], J.X. ZHOU[3], [1]China Academy of Machinery Shenyang Research Institute of Foundry Co., Ltd. (PRC),[2]Foundry Institution of China Mechanical Engineering Society (PRC), [3]State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science & Technology (PRC), [4]Clariant Chemical Technology (Shanghai) Co., Ltd. (PRC), [5]School 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

3. S. Kastelic[1,2], A. Mahmutović[2], M. Petrič[1], P. Mrvar[1], [1]Univerza v Ljubljani, Naravoslovnotehniška fakulteta (SI), [2]TC 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

4. BARAN SARAC[1], ELHAM SHARIFIKOLOUEI[2], YONGHUI ZHENG[3], PETER HOFER-HAUSER[1,] [1]Institute of Casting Research, Montanuniversität Leoben (AT), [2]Center for Translational Research on Autoimmune and Allergic Diseases - CAAD, Department of Health Sciences, Università del Piemonte Orientale UPO (IT), [3] Key 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** / Amorfna in nanokristalna mikrovlakna iz nerjavečega jekla: izboljšane mehanske lastnosti in odpornost proti koroziji za napredne aplikacije

5. 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

6. 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 dosego visokih mehanskih lastnosti izdelka iz zlitine AlSi10MgMn za e-mobilnost

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

► Invited Lecture / Vabljeno predavanje