

PROGRAMME

65th IFC Portoroz 2025

Wednesday / Sreda, 17. 09. 2025

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| 16.30 – 19.30 | Registration of participants at the Conference reception desk |
| 17.30 | Bus transfer from Hotel Slovenia to Piran |
| 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 |

Thursday/, 18. 09. 2025

Hall: Cristoforo Colombo

Plenary lectures

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| 9.30 – 9.45 | MIRJAM JAN-BLAŽIĆ,
President Slovenian Foundrymen Society
The Opening Address |
| 9.45 – 10.15 | J. J. GONZÁLEZ, The World Foundry Organization WFO (UK): Current situation and cooperative challenges for foundry |
| 10.15 – 10.45 | <u>M. SCHUMACHER</u> , <u>S. TEWES</u> , German Foundry Association, BDG (D): Roadmap to Greenhouse Gas Neutrality for the German Foundry Industry – Four Decarbonisation Pathways by 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 HPDC casting of composed as-cast foam from biodegradable ZnMg1,5 alloy |
| 11.15 – 11.45 | Break |
| 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 |
| 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, |

► Invited Lecture

Huazhong University of Science and Technology (PRC): **"1+N" Digital Foundry Innovation Platform and Its Applications**

- 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**
- 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**
- 13.30 – 15.15** **Lunch Break**
- 15.15 – 15.45** ► 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), ²Institute of Metals and Technology (SI), ³Metal Tech Solutions d.o.o. (SI): **Wear resistance of hot-work tool steel with high thermal conductivity in molten aluminium**
- 15.45 – 16.15** M. GAMISCH, Fill Gesellschaft m.b.H. (AT): **Challenges in the machining of large castings**
- 16.30 – 17.00** B. KANDUS, M. ŠIFRER, T. VOLGEMUT, SAVENA d. o. o. (SI) **Added value of energy management systems**

Thursday Evening, 18. 09. 2025

19.30 Foundrymen night on the coastline opposite Hotel Slovenija

Friday, 29. 09. 2025

SECTION A,

Hall: Amerigo Vespucci

Cast Iron, Foundry Techniques and Technology

- 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**
- 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**
- 9.40 – 10.00** ► D. MOLNÁR, H. HUDÁK, J. ERDÉLYI, University of Miskolc (HU): **Development of cast iron materials for automotive brake systems**

► Invited Lecture

10.00 – 10.15	Break
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
10.35 – 10.55	C. MUELLER, Laempe Mössner Sinto GmbH (D): Advantages of casting production with additively manufactured sand cores / molds
10.55 – 11.15	T. HOF, A. KIRCHNER, HEINRICH WAGNER SINTO MASCHINENFABRIK GMBH (D): Increasing the efficiency of sand foundries
11.15 – 11.30	Break
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
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
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
12.30 – 12.45	Break
12.45 – 13.05	► M. SLOVÁČEK, J. KUBÍČEK, Brno, University of technology (CZ): Casting repairs by welding
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
13.25 – 13.45	E. OFFENBACHER, P&P Industries AG (AT): Denox+ as multifunctional waste gas treatment
13.50	Conclusion of the Conference With Lunch

Friday, 19. 09. 2025

SECTION B:

Hall: Amerigo Vespucci

Non-ferrous Alloys

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
9.20 – 9.40	► J. LI, Montanuniversität Leoben (AT): Recycling Al-based powders for re-additive manufacturing

► Invited Lecture

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
10.00 – 10.15	Break
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
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
10.55 – 11.15	► R. RUDOLF ^{1,2} , P. MAJERIČ ^{1,2} , V. LAZIČ 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
11.15 – 11.30	Break
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
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
12.10 – 12.30	► Z. ZOVKO BRODARAC ¹ , F. KOZINA ¹ , M. PAPEŠ ² , S. LAZIČ 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
12.30 – 12.45	Break
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
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
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
13.50	Conclusion of the Conference With Lunch

Friday, 19. 09. 2025

SECTION C:

Hall: 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
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
9.40 – 10.00	X. X. YANG, W.H. ZHOU, X.Y. JI, M. J.HOU, P. YU, X.M. TU, Y.J. YIN, J.X. ZHOU, State Key Lab of Material Processing and Die & Mould Technology, Huazhong University of Science and Technology (PRC): Research on Full Process Scheduling of Casting Workshop Based on Improved Deep Reinforcement Learning Algorithm
10.00 – 10.15	Break
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
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
10.55 – 11.15	V. NYESTE, D. MOLNÁR, V. MERTINGER, University of Miskolc (HU): Effect of parameter changes for local squeezing and mechanical properties

Poster Presentations

1. D. BENNY KARUNAKAR¹, THOMAS MATHEW², ¹Indian Institute of Technology Roorkee (IND), ²COER University, Roorkee (IND): **Evaluation of 3D printed polymer patterns coated with nanofluids for the rapid investment casting process**
2. 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**
3. 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**

4. BARAN SARAC¹, ELHAM SHARIFIKOLOUEI², YONGHUI ZHENG³, PETER 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), 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**
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**
6. T. DREVENŠEK¹, N. VALENČIČ¹, D. VUGA¹, M. MAKAROVIC¹, B. PERKO¹, N. BALANTIČ¹, M. VONČINA¹, T. BALAŠKO¹, S. KORES², ¹Univerza v Ljubljani, Naravoslovnotehniška fakulteta, Oddelek za materiale in metalurgijo (SI), ²TALUM d.d. (SI): **Optimisation of heat treatment to achieve high mechanical properties of an AlSi10Mgmn alloy product for e-mobility**

13.30

Conclusion of the Conference With Lunch