



**IV INTERNATIONAL CONFERENCE OF CASTING
AND MATERIALS ENGINEERING ICCME 23
KRAKOW, POLAND, NOVEMBER 6-7, 2023**

CONFERENCE PROGRAMME



**FACULTY OF FOUNDRY
ENGINEERING
AGH UNIVERSITY**

6.11.2023 (Monday)

'STUDIO' CLUB, AGH University of Krakow CAMPUS (Budryka 4, Krakow)

09:00	10:00	REGISTRATION
10:00	10:30	OFFICIAL OPENING
PLENARY SESSION Main Hall Chairmen: J. Rozmund, M. Górny		
10:30	11:00	Maria Losurdo (CNR-ICMATE, Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia, Italy) <i>Metals for energy and security: needs of databases and opportunities from chemical processing</i>
11:00	11:30	Krzysztof T. Wojciechowski (Faculty of Materials Science and Ceramics, AGH University of Krakow, Poland) <i>Thermoelectric materials and devices for recovering heat generated in technological processes</i>
11:30	12:00	John Bradley (MD Bitech Training Limited, UK) <i>The journey to develop the Metalcasting Engineering MSc</i>
12:00	12:30	Dominik Kawalec (Signal and Power Solutions APTIV, Poland) <i>Advanced materials in electric car high-voltage architecture</i>
12:30	13:30	LUNCH

GREEN CASTING PANEL | Main Hall | Chairmen: P. Jacquet, K. Major-Gabryś

13:30	14:00	R. Dańko, A. Kmita, J. Dańko, M. Holtzer <i>Key assumptions for Green Casting Life Project: Towards zero emissions in European ferrous foundries using inorganic binder systems</i>
14:00	14:15	A. Kmita, R. Dańko, M. Holtzer, J. Dańko, D. Drożyński, M. Skrzyński, A. Rocznik, D. Gruszka, J. Jakubski <i>Emission measurements of new inorganic binder systems for the production of molds and cores</i>
14:15	14:30	R. Dańko, J. Dańko, A. Kmita, M. Holtzer, D. Drożyński, D. Gruszka, M. Skrzyński <i>The influence of aqueous protective coatings on permeability of samples of the selected sand kinds - in the context of the environment protection by controlling the emission of process gases</i>
14:30	14:45	K. Jalava, N. Anvar <i>Evaluation of 3D printed pattern material for heat-hardened inorganic molds</i>
14:45	15:00	St. M. Dobosz, J. Kozień, D. Drożyński, M. Hosadyna-Kondracka <i>New Pro-Ecological Alkyd Binder for Molding Sands with Limited Solvent Content</i>
15:00	15:15	D. Halejcio, K. Major-Gabryś <i>The influence of γ-Al₂O₃ nanoparticles in the binder composition on the chosen properties of inorganic molding sands prepared in different technologies</i>
15:15	15:30	J. Wielgosz, A. Vaucheret, P. Jacquet, R. Chiriac, F. Toche, J. F. Carton <i>A Comparative Study of the Atmosphere in Green Sand Molds Produced from New and Reclaimed Sand</i>
15:30	16:00	COFFEE BREAK

SCIENTIFIC SESSION A Conference Room Chairmen: K. Naplocha, M. Szucki		
13:30	13:45	A. Fijołek, A. Garbacz-Klempka, P. Żak <i>Application of reverse engineering and virtualization tools to recreate bracelet casting technology</i>
13:45	14:00	A. Pierwoła, J. Lelito <i>Analysis of the crystallization kinetics in biomedical MgZnPt-metallic glass during annealing</i>
14:00	14:15	M. S. Khan, M. Szucki <i>Advancements in the PU Cold Box Curing Process</i>
14:15	14:30	E. Proniewicz, A.M. Vijayan, O. Surma, A. Szkudlerek, M. Moledna <i>Plant-assisted green synthesis of MgO nanoparticles as a sustainable material for bone regeneration: spectroscopic properties and photocatalytic and SERS activity</i>
14:30	14:45	J. Marosz, M. Górny, E. Olejnik, M. Kawalec <i>TiC ceramic phase reinforced "in situ" composite, based on Si-Mo cast iron obtained by SHSB reaction</i>
14:45	15:00	A. Bitka, M. Górny, G. Angella, B. Cygan <i>Mechanical properties of thin-walled austempered ductile iron (TWADI) castings</i>
15:00	15:15	S. K. Kolparambath, M. Szucki <i>Numerical Studies on the Recycling of Aluminum Matrix Composites using Rotational Assisted Filtration Technique</i>
15:15	15:30	K. Chrzan, B. Kalandyk <i>Abrasive wear resistance of AlCoCuFeNi high entropy alloy</i>
15:30	16:00	COFFEE BREAK

SCIENTIFIC SESSION B Main Hall Chairmen: G. Angella, T. Hoblea		
16:00	16:15	B. Gracz, G. Piwowarski, W. Krajewski <i>AlZnCu-based cast composites reinforced with Ti aluminides</i>
16:15	16:30	P. Jacquet, A. Vaucheret, M. Souetre, J. F. Carton <i>How to improve the precision of numerical simulation in casting?</i>
16:30	16:45	S. Terlicka, K. Janus, N. Sobczak, J.J. Sobczak, E. Ziółkowski <i>Investigation of wetting behavior of molten magnesium with titanium, niobium and titanium-niobium substrates as a potential materials for medical implants</i>
16:45	17:00	M. Łuszczak <i>Challenges and opportunities of cars electrification for HPDC foundries</i>
17:00	17:15	A. Dmitruk, N. Rażny, J. Grzęda, K. Naplocha <i>Manufacturing of cellular structures to absorb impact energy</i>
17:15	17:30	K. Janus, S. Terlicka, J.J. Sobczak, N. Sobczak, E. Olejnik, W. Maziarz <i>High-temperature interaction of liquid aluminium with compacted titanium-carbon powder substrate as a key factor for in-situ fabrication of aluminium matrix composites reinforced with TiC</i>
17:30	17:45	E. Olejnik, P. Kurtyka, W. Maziarz, R. Chulist <i>Exploring the effect of TiC nanoparticles on in situ Al-based cast composites: microstructure, properties, and prospects for electromobility applications</i>
17:45	18:00	A. Łukaszczyk, B. Grysakowski, F. Kuśmierczyk, T. Moskalewicz <i>Corrosion Resistance of Multicomponent PEEK-based Coatings on Zirconium Alloy in Ringer's Solution</i>
18:00	18:15	Z. Szklarz, A. Garbacz-Klempka, M. Bisztyga-Szklarz <i>Multi-component metallic alloys produced by electrochemical methods - properties and applications</i>
19:00	24:00	BANQUET

SCIENTIFIC SESSION C Conference Room Chairmen: R. Cygan, K. Jalava		
16:00	16:15	J. Grzęda, A. Dmitruk, N. Rażny, K. Naplocha <i>Precision-cast metal spatial structures for thermal energy storage applications</i>
16:15	16:30	A. Świątkowski, A. Szczęsny, E. Guzik, K. Piotrkowski, D. Kopyciński <i>Evaluation of microstructure of large-size gray iron castings</i>
16:30	16:45	A. Szczęsny, A. Burbelko, D. Kopyciński <i>Crystallization of primary austenite in chromium cast iron</i>
16:45	17:00	M. Królikowski, A. Zaczyński, M. Sokolnicki, A. Nowak, E. Guzik, A. Burbelko <i>Control of melting and secondary processing of liquid alloy dedicated to ductile iron castings</i>
17:00	17:15	K. Bracka-Kęsek, A. Szczęsny, M. J. Skuza, A. Bigos, D. Kopyciński <i>Influence of Ti addition to the zinc bath on the microstructure of the coating formed in the dip galvanising process</i>
17:15	17:30	D. Kopyciński, P. Paczkowski <i>Control of the casting structure by means of a chill with thermoelectric modules</i>
17:30	17:45	M. Bork, M. Górny, M. Kawalec, G. Palumbo, Ł. Gondek <i>Structure and thermal stability of austenitic ductile iron castings</i>
17:45	18:00	T. Wiktor, A. Burbelko, A. Garbacz-Klempka, E. Ziótkowski <i>Method for quantitative evaluation of EN-AC46000 alloy phase composition from EDS measurements</i>
18:00	18:15	W. Kwilosz, M. Królikowski, A. Zaczyński, M. Sokolnicki, A. Nowak, E. Guzik <i>Tests of mechanical, fatigue and fracture toughness of high Silicon ferritic ductile iron EN GJS 600-10</i>
19:00	24:00	BANQUET

7.11.2023 (Tuesday)

ACMiN, AGH University of Krakow (Kawiorzy 30, Krakow)

09:30	10:00	REGISTRATION
10:00	10:15	OFFICIAL OPENING
10:15	10:45	Tiberiu Victor Hoblea (Foundry consultant, Romania) <i>Feeding and Gating Tool</i>
STUDENTS SESSION A Chairmen: H. Dorożyński, J. Lelito		
10:45	11:00	P. Tomal, C. Leinenbach, A. Baganis, G. Michta <i>Fabrication, microstructure analysis and mechanical testing of aluminum based metal-metal composites</i>
11:00	11:15	T. Galwas <i>Development of technology for producing fiber composites by infusion and RTM process</i>
11:15	11:30	K. Morgiel, Ł. Dyrłaga, A. Świątkowski, D.Kopyciński <i>Overview of SiMo 1000 cast iron microstructure</i>
11:30	11:45	M. Cużytek <i>Analysis of the selected factors on the 3-D printed models made of PLA material quality</i>
11:45	12:00	K. Kuglarz <i>28 years and still works</i>
12:00	12:15	B. Ślęzak, P. Zieliński <i>Developing own technology of manufacturing climbing holds</i>
12:15	12:30	K. Liszka <i>STOP - cooperation, integration and tradition - Polish Foundrymen's Association</i>
12:30	13:00	COFFEE BREAK

STUDENTS SESSION B Chairmen: G. Matysik, K. Kaczmarek		
13:00	13:15	B. Moćko <i>Comparison of photovoltaic cells lamination methods</i>
13:15	13:30	S. Żołyńia <i>Numerical simulation and experimental validation of the heat treatment of a steel casting</i>
13:30	13:45	J. Cupek, J. Walek, M. Tkadlečková <i>Numerical modeling of steel flow in the tundish with different casting conditions</i>
13:45	14:00	N. Mordyl <i>Analysis of the structure of casting made as a result of combining two non-ferrous metal alloys - CuSi3Zn3Mn1 and AISi7Mg</i>
14:00	14:15	A. Dąbrowski <i>Design of the new cylinder of S-38 engine and development of its production technology</i>
14:15	14:30	E. Bartosik <i>3D printing of conductive carbon materials</i>
14:30	14:45	A. Bryłka <i>Where does the biggest DISA hide? - Lisie Kąty Foundry</i>
15:15	16:00	CONTEST RESULTS ANNOUNCEMENT
16:15	19:00	STUDENTS SOCIAL MEETING

Energy and Military Industries

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