**WORKSHOP**

***90 Years of Educating Foundry Engineers by the AGH University of Science and Technology in Krakow***

***90 Lat Kształcenia Inżynierów Odlewników w Akademii Górniczo - Hutniczej w Krakowie***

**organized by the Faculty of Foundry Engineering**

**under Honorary Patronage of Professor Tadeusz Słomka**

**Rector of AGH University of Science and Technology**

and connected with the ***XXXVI Scientific Conference***

***Foundryman' Day 2012* - *Dzień Odlewnika 2012***

**Chairman**

Professor Witold K. KRAJEWSKI, Faculty of Foundry Engineering, [krajwit@agh.edu.pl](mailto:krajwit@agh.edu.pl)

**Venue**

Faculty of Foundry Engineering, Krakow, Reymonta 23 Street, Building D8, Ground-Floor Hall, 22 – 23th November 2012; (<http://www.odlew.agh.edu.pl/kontakt/jak_trafic.html>)

**Co-Chairman**

Professor Jerzy S. ZYCH, Faculty of Foundry Engineering, [jzych@agh.edu.pl](mailto:jzych@agh.edu.pl)

**Organizing Committee**

Prof. Jerzy S. ZYCH

Dr Maria MAJ

Prof. Eugeniusz ZIÓŁKOWSKI

Dr Marcin BRZEZIŃSKI

MSc. Jacek SIEDLECKI

MSc. Elżbieta PUDEK

MSc. Tomasz SNOPKIEWICZ

**Information, Registration and Contact Addresses**

Prof. J. Zych, [jzych@agh.edu.pl](mailto:jzych@agh.edu.pl); Tel. 0048-12-6172701; 0048-12-6172753

MSc. J. Siedlecki, [jaces@agh.edu.pl](mailto:jaces@agh.edu.pl); Tel. 0048-12-6172701

**Conference Fee and Bank Account Details**

**Foreign and Special Guests – Free**

Polish attendees – 300 PLN + 23% VAT

**Bank Account**

Pekao SA III Oddział w Krakowie, ul. Pijarska 1

Account No.: 03 1240 4533 1111 0000 5434 6862

REF.: Workshop FoundryAGH 2012

**Accommodation recommended**

Hotel *Polonez* <http://www.hotel-polonez.pl>

Hotel *Za kolumnami*  <http://www.ap.krakow.pl>

**Important Dates**

November 1st, 2012 Attendees registration

November 7th, 2012 Fee payments

November 15th, 2012 Submitting of the Polish attendees oral and poster presentations

**International Scientific Committee**

|  |  |  |
| --- | --- | --- |
| Prof. | Jacek M. BANAŚ | *AGH University of Science and Technology* |
| Prof. | Robert BONGARTZ | *University of Applied Sciences Düsseldorf* |
| Prof. | Zdenka Zofko BRODARAC | *University of Zagreb* |
| Prof. | Andryi A. BURBELKO | *AGH University of Science and Technology* |
| Prof. | Mariana CALIN | *IFW Dresden* |
| Prof. | Stanisław M. DOBOSZ | *AGH University of Science and Technology* |
| Prof. | Reinhard DÖPP | *TU Clausthal* |
| Prof. | Jürgen ECKERT | *IFW Dresden* |
| Prof. | Tomáš ELBEL | *University of Ostrava* |
| Prof. | Aleksander FEDORYSZYN | *AGH University of Science and Technology* |
| Prof. | Vladimir P. GAVRILUK | *National Academy of Sciences of Ukraine* |
| Sc.D. | Marcin GÓRNY | *AGH University of Science and Technology* |
| Prof. | A. Lindsay GREER | *University of Cambridge* |
| Prof. | Edward GUZIK | *AGH University of Science and Technology* |
| Prof. | Jiří [HAMPL](http://dspace.vsb.cz/browse?value=Hampl,%20Jiří&type=author) | *University of Ostrava* |
| Prof. | Mariusz HOLTZER | *AGH University of Science and Technology* |
| Prof. | Milan HORAČEK | *Brno University of Technology* |
| Prof. | Peter HORŇAK | *Technical University of Košice* |
| Prof. | Barbara HUTERA | *AGH University of Science and Technology* |
| Sc.D. | Barbara KALANDYK | *AGH University of Science and Technology* |
| Prof. | Dariusz KOPYCINSKI | *AGH University of Science and Technology* |
| Prof. | Witold K. KRAJEWSKI | *AGH University of Science and Technology* |
| Prof. | Halina KRAWIEC | *AGH University of Science and Technology* |
| Prof. | Jörg F. LÖFFLER | *ETH Zürich* |
| Prof. | Yuriy S. PROYDAK | *National Metallurgical Academy of Ukraine* |
| Prof. | Jaromir ROUČKA | *Brno University of Technology* |
| Prof. | Stanisław RZADKOSZ | *AGH University of Science and Technology* |
| Prof. | Peter SCHUMACHER | *University of Leoben* |
| Prof. | Vadim Y. [SELIVERSTOV](http://dmeti.dp.ua/en/mfac/i1004/p-2/e2025) | *National Metallurgical Academy of Ukraine* |
| Dr | Mihai STOICA | *IFW Dresden* |
| Prof. | Józef S. SUCHY | *AGH University of Science and Technology* |
| Prof. | Barbara STYPUŁA | *AGH University of Science and Technology* |
| Prof. | Faruk UNKIĆ | *University of Zagreb* |
| Prof. | Anatolii M. VERKHOVLIUK | *National Academy of Sciences of Ukraine* |
| Prof. | Vincent VIGNAL | *Université de Bourgogne, Dijon* |
| Prof. | Gotthard WOLF | *University of Applied Sciences Düsseldorf* |
| Prof. | Roman WRONA | *AGH University of Science and Technology* |
| Prof. | Eugeniusz ZIÓŁKOWSKI | *AGH University of Science and Technology* |
| Prof. | Jerzy S. ZYCH | *AGH University of Science and Technology* |

**Special Guests**

|  |  |  |
| --- | --- | --- |
| Prof. | Zbigniew Górny | Doctor Honoris Causa of the AGH University of Science and Technology |
| Prof. | Jan Lech Lewandowski | Doctor Honoris Causa of the AGH University of Science and Technology |
| Prof. | Zdzisław Samsonowicz | Doctor Honoris Causa of the AGH University of Science and Technology |
| Prof. | Władysław Longa | Honorary Professor of the AGH University of Science and Technology |
| Prof. | Zbigniew Kąkol | Vice-Rector of the AGH University of Science and Technology |
| Prof. | Tomasz Szmuc | Vice-Rector of the AGH University of Science and Technology |
| Prof. | Anna Siwik | Vice-Rector of the AGH University of Science and Technology |
| Prof. | Andrzej Tytko | Vice-Rector of the AGH University of Science and Technology |
| Prof. | Mirosław Karbowniczek | Vice-Rector of the AGH University of Science and Technology |
| Prof. | Maria Richert | Dean of the Faculty of Non-Ferrous Metals, AGH University of Science and Technology |
| Prof. | Tadeusz Telejko | Dean of the Faculty of Metal Engineering and Industrial Computer Science, AGH University of Science and Technology |
| Prof. | Paweł Zięba | Director of Institute of Metallurgy and Materials Science – Polish Academy of Sciences |
| Prof. | Bogusław Major | President of Scientific Board of the Institute of Metallurgy and Materials Science of the Polish Academy of Sciences, Member of the Polish Academy of Sciences |
| Prof. | Jerzy Sobczak | General Director of Foundry Research Institute in Krakow |
| MSc. | Tadeusz Franaszek | President of STOP - Polish Technical Foundrymen's Association |
| MSc. | Andrzej Ryba | Past-President of CAEF – Committee of Association of European Foundries |

**A G E N D A**

**Thursday, 22nd November**

|  |  |
| --- | --- |
| **STUDENT SESSION** | |
|  |  |
| 11.00 – 11.15 | *Welcome*, Professor Józef S. Suchy, Dean of the Faculty of Foundry Engineering and Professor Eugeniusz Ziółkowski, The Dean's Representative for Students Research Activity |
| 11.15 – 12.00 | *Invited lecture,* Professor A. Lindsay Greer, University of Cambridge, UK |
| 12.00 – 12.10 | *The Scholarship* "*Research and Innovation of Foundry Technology*",Manini Ramagaga, Max du Plessis, Jecois Fourie, Llewellyn Cupido, Republic of South Africa |
| 12.10 – 12.20 | *Process optimisation and quality control of castings,* Manini Ramagaga, Republic of South Africa |
| 12.20 – 12.30 | *The reclamation of spent sand bounded by polymeric binder BioCo2,* Karolina Kaczmarska, Beata Grabowska, Rafał Dańko, Faculty of Foundry Engineering – AGH UST |
| 12.30 – 12.40 | *Influence of the modification by AlTi5C0.15 grain-refiner on the ZnAl10 alloy microstructure,* Grzegorz Piwowarski, Paweł K. Krajewski, J. Buraś, Faculty of Foundry Engineering – AGH UST |
| 12.40 – 12.50 | *The solid electrolytes in lithium-ion batteries,* Magdalena Bisztyga, Faculty of Foundry Engineering – AGH UST |
| 12.50 – 13.05 | *Optimization of fatigue strength of welded rotationally symmetrical components by surface strenghtening of welding zone*, Professor Robert Bongartz, Düsseldorf University of Applied Sciences, Germany |
| 13.05 – 13.20 | *Formulating the boundary conditions for numerical model of heat transfer in a system heat source – heat sink. Thermal conductivity of the system,* Paweł K. Krajewski, Grzegorz Piwowarski, Józef S. Suchy, Faculty of Foundry Engineering – AGH UST |
| 13.20 – 14.30 | Lunch break |
|  |  |
| **PARALLEL AFTERNOON SESSIONS and SATELLITE MEETINGS** | |
|  |  |
| 14.30 – 17.00 | STUDENTS SESSION – Poster Presentations |
| 15.00 – 16.00 | The InnoCast Project Partners Meeting, Dean's Office, Building D8, First Floor, Room 124 |
|  |  |
| 16.00 – 16.15 | Coffee break |
|  |  |
| 16.15 – 18.00 | Visits to Faculty Units |

**Friday, 23rd November**

|  |  |
| --- | --- |
| 9.00 – 10.00 | Registration, Faculty of Foundry Engineering, Reymonta 23 Street, Building D8, Ground-Floor Hall |
| 10.00 - 10.10 | *Welcome*, Professor Józef S. Suchy, Dean of the Faculty of Foundry Engineering, Executive Member of WFO - World Foundry Organization |
| 10.10 – 10.25 | *Research Activities of the Faculty of Foundry Engineering*, Professor Witold K. Krajewski, Deputy Dean for Science, Faculty of Foundry Engineering – AGH UST |
| 10.25 – 10.40. | *Profiles of Foundry Engineers Educated During the Past 90 Years*, Professor Jerzy S. Zych, Deputy Dean for Education, Faculty of Foundry Engineering – AGH UST |
| 10.40 – 10.55 | *Modern Electric Arc Furnaces Used in Foundry Industry,*  Professor Mirosław Karbowniczek, Vice-Rector for General Affairs - AGH UST |
| 10.55 – 11.15 | Coffee break |
|  |  |
| **FOREIGN GUESTS PRESENTATIONS** | |
| 11.15 – 11.45 | Professor A. Lindsay Greer, University of Cambridge, United Kingdom (*Invited lecture*) |
| 11.45 – 12.00 | Professor Gotthard Wolf, University of Applied Sciences Düsseldorf, Germany, WFO Past President |
| 12.00 – 12.15 | Professor Zdenka Zofko Brodarac, University of Zagreb, Croatia |
| 12.15 – 12.45 | Professor Peter Schumacher, University of Leoben, Austria  *(Invited lecture)* |
| 12.00 – 13.00 | Professor Tomáš Elbel – Professor Jiří [Hampl](http://dspace.vsb.cz/browse?value=Hampl,%20Jiří&type=author), University of Ostrava, Czech Republik |
| 13.00 – 13.15 | Professor Vladimir P. Gavriluk – Professor Anatolii M. Verkhovliuk, National Academy of Sciences of Ukraine, Kiev, Ukraine |
| 13.15 – 14.30 | Lunch break |
|  |  |
| **PARALLEL AFTERNOON SESSIONS and SATELLITE MEETINGS** | |
| 14.30 – 18.00 | POSTER SESSION **Foundryman' Day 2012** – Faculty of Foundry Engineering, Building D8, Ground-Floor Hall |
| 14.30 – 16.30 | The InnoCast Project Partners Meeting (Part 2), Dean's Office, Building D8, First Floor, Room 124 |
| 18.00 | Social Evening |

LIST OF POSTERS

|  |  |
| --- | --- |
| Author(s) and Title of Presentation | Session |
| A. Bobrowski, ANALIZA ZMIAN STRUKTURALNYCH ZACHODZĄCYCH W ŻYWICY I SPOIWIE ALKIDOWYM W ZAKRESIE TEMPERATURY 20-200°C METODĄ FTIR | 23th Nov. |
| A. Bobrowski, M. Holtzer, R. Dańko, S. Żymankowska – Kumon, ANALIZA GAZÓW WYDZIELAJĄCYCH SIĘ PODCZAS TERMICZNEGO ROZKŁADU WYBRANYCH SPOIW FENOLOWYCH | 23rd Nov. |
| A. Garbacz-Klempka, S. Rzadkosz, T. Stolarczyk, J. Kozana, M. Piękoś, W. Cieślak, ARCHEOLOGICZNE ŚLADY METALURGII MIEDZI NA DOLNYM ŚLĄSKU | 23rd Nov. |
| A. Garbacz-Klempka, S. Rzadkosz, I. Suliga, W. Ossowski, ŁADUNEK MIEDZI I ŻELAZA ODKRYTY NA ŚREDNIOWIECZNYM STATKU MIEDZIOWIEC | 23rd Nov. |
| Garbacz-Klempka, S. Rzadkosz, D. Rozmus, J. Tokaj, „SKARB HUTNIKA” ODKRYTY NA TERENIE WCZESNOŚREDNIOWIECZNEJ OSADY HUTNICTWA SREBRA I OŁOWIU W DĄBROWIE GÓRNICZEJ - ŁOŚNIU | 23rd Nov. |
| B. Gracz, MODELLING OF HETEROGENEOUS NUCLEATION IN AlZn7 ALLOY. RECONSTRUCTION OF SIZE DISTRIBUTION OF NUCLEANT PARTICLES | 22nd Nov. |
| Ł. Jamrozowicz, J. Zych, KINETYKA SUSZENIA POWŁOK OCHRONNYCH NANIESIONYCH NA FORMY I RDZENIE PIASKOWE | 23rd Nov. |
| J. Kamińska, A. Kmita, J. Kolczyk and S. Żymankowska-Kumon, RECLAMATION OF SPENT MOULDING SANDS WITH THE CARBOPHEN 8178 RESIN | 22nd Nov. |
| J. Kamińska, A. Kmita, J. Kolczyk and P. Malatyńska, STRENGTH PARAMETERS AND A MECHANICAL RECLAMATION TOGETHER WITH THE MANAGEMENT OF ITS BY-PRODUCTS | 22nd Nov. |
| D. Kasprzyk, B. Stypuła, THE CORROSION RESISTANCE OF STAINLESS STEELS AFTER MW PLASMA TREATMENT | 22nd Nov. |
| M. Kawalec, E. Pamuła, WPŁYW MIKROSTRUKTURY NA ODPORNOŚĆ NA ZUŻYCIE ŚCIERNE ŻELIWA STOPOWEGO | 22nd Nov. |
| M. Kawalec, M. Serafin, MODYFIKACJA MIKROSTRUKTURY ŻELIWA WYSOKOWANADOWEGO ZA POMOCA MISZMETALU | 22nd Nov. |
| A.Kmita, B.Hutera, A.Bobrowski, B.Stypuła, M.Starowicz, EFFECT OF COLLOIDAL SUSPENSIONS OF MAGNESIUM OXIDE AND ZINC OXIDE NANOPARTICLES ON SELECTED PROPERTIES OF WATER GLASS | 22nd Nov. |
| J. Kozana, S. Rzadkosz, A. Garbacz-Klempka, M. Piękoś, W. Cieślak, BADANIA ODDDZIAŁYWANIA WYBRANYCH DODAKTKÓW STOPOWYCH W KSZTAŁTOWANIU MIKROSTRUKTURY ORAZ WYBRANYCH WŁAŚCIWOŚCI MECHANICZNYCH I TECHNOLOGICZNYCH MOSIĄDZÓW | 23rd Nov. |
| J. Loch, H. Krawiec, COROSSION BEHAVIOUR OF TITANIUM ALLOYS IN PHYSIOLOGICAL SOLUTIONS | 22nd Nov. |
| J. Loch, K. Kaczmarska, B. Grabowska, EMISSION OF GAS SUBSTANCES OF THE BTEX GROUP FROM MOULDING SANDS WITH THE BioCo2 BINDER | 22nd Nov. |
| Z. W. Kwak, WHERE ART MEETS THE VIRTUAL TECHNOLOGY. DESIGN OF THE BALLOON SHAPE INSPIRED LAMP | 22nd Nov. |
| M. Maj, K. Pietrzak and J. Piekło, CHARAKTERYSTYKA STALIWA G20Mn5 W ŚWIETLE BADAŃ W ZAKRESIE NISKOCYKLOWYCH OBCIĄŻEŃ ZMIENNYCH | 23rd Nov. |
| K. Major-Gabryś, St.M. Dobosz, J. Jakubski, M. Stachowicz, D. Nowak, THE INFLUENCE OF GLASSEX ADDITIVE ON PROPERTIES OF MICROWAVE-HARDENED AND SELF-HARDENED MOULDING SANDS WITH WATER GLASS | 23rd Nov. |
| P. Malatyńska, J. Głownia, SEGREGATION OF ELEMENTS IN THE STAINLESS STEEL CONTAINING 17.88% Cr AND 8.75% Ni | 22nd Nov. |
| E. Olejnik, G. Sikora, E. Tyrała, A. Kolbus, COMPOSITE ZONES OBTAINED BY IN SITU SYNTHESIS IN CASTINGS BASED ON THE NI3AL PHASE | 23rd Nov. |
| J. Paśniewski,SIMULATION OF FILLING AND SOLIDIFICATION OF DESIGNED ALLOY FOR DECK CLEATS EXAMPLE | 22nd Nov. |
| M. Piwowarska - Uliasz, T. Knych and P. Uliasz, COMPARATIVE STUDIES OF SEMI-FINISHED PRODUCTS AND PRODUCTS OBTAINED IN CONTINUOUS CASTING AND ROLLING AND CONTINUOUS CASTING TECHNOLOGY ON THE EXAMPLE OF THE ALUMINUM GRADE EN AW 1370 | 23rd Nov. |
| Joanna Smyrak, NUMERICAL SIMULATION OF STEERING SYSTEM ELEMENT CASTING | 22nd Nov. |
| M. Starowicz, B. Stypuła, A. Kmita, B. Hutera, D. Drożyński, A. Bobrowski, M. Hajos, MAGNESIUM NANOXIDE (MgO) AS A MODIFIER OF FOUNDRY BINDER - WATER GLASS | 23rd Nov. |
| D. Szczepara, D. Dróżdż, K. Jagosz, Ł.Kopyciński, M. Rudzińska, M. Tenerowicz, E. Wildhirt, A. Garbacz-Klempka, BADANIA ZABYTKÓW Z OŁOWIU W RAMACH REWITALIZACJI I OCHRONY OLKUSKIEJ STARÓWKI | 22nd Nov. |
| A. Szczęsny, D. Kopyciński, QUALITY ASSESSMENT OF GALVANIZED DUCTILE IRON | 23rd Nov. |
| M. Szucki, J.S. Suchy and J. Sobczyk, INCREASING NUMERICAL STABILITY OF THE LATTICE BOLTZMANN MODEL FOR MOULD FILLING PROCESS BY THE FRACTIONAL STEP ALGORITHM | 23rd Nov. |
| J. Wiecheć, P. Uliasz, . Knych, M. Piwowarska – Uliasz and R. Jarosz, The influence of chemical composition and parameters of heat treatment on the mechanical properies and electrical conductivity in hypoeutectic aluminium silicon alloys | 23rd Nov. |
| M. Wróbel, WSTĘP DO MODELOWANIA KRYSTALIZACJI METODĄ POLA FAZOWEGO | 22nd Nov. |
| E. Ziółkowski, R. Wrona, A. Fedoryszyn, K. Smyksy, M. Brzeziński, MEASUREMENT SYSTEM OF ELECTRIC POWER DEMAND IN A VACUUM MOULDING TEST STAND | 23rd Nov. |
| E. Ziółkowski, P. Śmierciak, ENERGY CONSUMPTION IN THE FUZZY CONTROL OF FOUNDRY FURNACES | 23rd Nov. |
| P. L. Żak and J. S. Suchy, THE RANK CONTROLLED DIFFERENTIAL QUADRATURE - A NUMERICAL METHOD IMPROVED FOR FOUNDRY ENGINEERING | 23rd Nov. |