

71ST
BILBAO
2014



WORLD
FOUNDRY
CONGRESS

Advanced Sustainable Foundry

19-21 May 2014 • Palacio Euskalduna, BILBAO

www.71stwfc.com





71st WORLD FOUNDRY CONGRESS

PROGRAMME AT-A-GLANCE

- **Official opening and closing ceremony**
- **Keynote Lectures**
 - Energy
 - Environment
 - Market trends and demands
 - Innovation
- **Scientific Programme**
 - Technical Sessions
 - Young Researchers
 - Poster Sessions
 - Young Student Seminar
- **Social Programme**
 - Gala Dinner (Alhóndiga Bilbao)
 - Foundrymen's night (Guggenheim Museum)
 - Accompanying persons' programme
- **International Foundry Exhibition**
 - Inbound Commercial Missions
 - Casting Buyers' Forum
 - International Commercial Missions
- **Industrial Visits**
- **WFO Meetings**
 - Executive Committee
 - General Assembly
 - International Commissions
- **Post Congress Tours**
 - Basque Country and Navarre
 - Madrid
 - Barcelona
 - Andalusia
 - Canary Island



71st WORLD FOUNDRY CONGRESS

PROGRAMME AT-A-GLANCE

Sunday 18th May 2014

10:00h – 12:30h	WFO Executive Meeting
12:30h – 13:30h	WFO Past President Meeting
15:00h – 19:00h	Congress Registration (Euskalduna Palace)
15:00h – 00:00h	International Foundry Exhibition (Arrangements)
15:30h – 17:30h	WFO International Commissions Meeting
15:30h – 16:30h	WFO Executive Meeting
16:30h – 17:30h	WFO Past President Meeting
20:00h – 22:00h	WFO Representatives Dinner

* City Tour Services at: 11:00, 12:00, 13:00, 15:00, 16:00 and 17:00h.
Registration must be completed in advance.

Monday 19th May 2014

08:30h – 18:00h	Congress Registration (Euskalduna Palace)
10:30h – 13:00h	Opening Ceremony
13:00h – 13:30h	International Foundry Exhibition Opening Ceremony
13:30h – 18:30h	International Foundry Exhibition
13:30h – 18:30h	Poster Display
13:30h – 15:00h	Lunch
15:00h – 18:30h	Keynote Lectures
20:30h–22:30h	Gala Dinner (Alhóndiga Bilbao)



Tuesday 20th May 2014

09:00h – 13:30h	Technical Sessions
09:00h – 18:30h	International Foundry Exhibition
11:00h – 13:30h	Inbound Commercial Missions
10:00h – 13:00h	Accompanying Persons' Programme
10:30h – 18:00h	Poster Display
13:30h – 15:00h	Lunch
15:00h – 17:00h	Inbound Commercial Missions
15:00h – 18:30h	Technical Sessions
21:00h – 23:00h	Foundrymen's Night (Guggenheim Museum)

Wednesday 21st May 2014

09:00h – 13:30h	Technical Sessions
09:00h – 18:30h	International Foundry Exhibition
10:00h – 13:00h	Accompanying Persons' Programme
10:30h – 18:30h	Poster Display
13:30h – 15:00h	Lunch
15:00h – 17:30h	WFO General Assembly
14:30h – 18:00h	Young Students' Seminar
18:15h – 19:30h	Closing Ceremony



Instituto de Fundición TABIRA
TABIRA Foundry Institute

Spanish WFO Associate Member
Aliendalde Auzunea N°6
E-48200 Durango (Bizkaia), Spain

Tel: +34 94 6215470

Fax: +34 94 6215471

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Thursday 22nd May 2014

09:00h – 17:00h

Industrial Visits

Groups of 25 - 50 persons

(Depending on the distance, the intention is to visit 2 plants per group)

Friday 23rd May 2014

09:00h – 13:00h

Departure of Post Congress Tours



SCIENTIFIC COMMITTEE

Dr. José Luis Arana,

Metallurgy Dean at ETSIIB BASQUE COUNTRY UNIVERSITY

Mr. Patxi Rodríguez,

Director of Materials and Associated Technologies at EDERTEK

Mr. Ramón Suárez,

Engineering, R&D and Metallurgical Processes Manager at IK-4 AZTERLAN

Dr. Juan José Damborenea,

Professor of Investigation at CSIC

Dr. Susana Méndez,

Corrosion and Protection Department Coordinator at IK-4 AZTERLAN

Mr. Javier Laucirika,

Director of IK4 Scientific Council

Mr. Gorka Zarrabeitia,

Engineering & Foundry Dpt. IK4-AZTERLAN

Dr. José Ignacio Erasquin,

Main researcher in the Industry and Transport at TECNALIA. Professor at ENGINEERING UNIVERSITY OF VITORIA BCU

Dr. Ana Fernández,

Director of Aluminium Area at IK-4 AZTERLAN

Dr. Zigor Azpilgain,

Coordinator of Automotive Investigation at MONDRAGON UNIVERSITY

Dr. Jordi Tartera,

Professor from the Department of Material Science and Metallurgical at Technical UNIVERSITY OF CATALUÑA

Mr. Julián Izaga,

Innovation and Technology Manager at IK-4 AZTERLAN

Mr. Per Rolf Roland,

Foundry Technology Consultant and Past President of the WFO



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Dr. Doru Stefanescu,

Faculty Emeritus, Material Science Engineering at the OHIO STATE UNIVERSITY

Dr. Jaques Lacaze,

Former elected member of the Governing and Scientific Council of INSTITUT NATIONAL POLYTECHNIQUE DE TOULOUSE

Dr. Dierk Hartmann,

Professor for materials science and technology at UNIVERSITY OF APPLIED SCIENCE, KEMPTEN

Mr. Michael Garat,

Former Project manager R&D foundry alloys at RIO TINTO ALCAN



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71ST WORLD FOUNDRY CONGRESS TECHNICAL PROGRAMME



ASK CHEMICALS BARRIA 1 CONFERENCE ROOM– 20TH MAY 2014

- CAST IRON -

09:00h – 11:00h

09:10h

**A study on prediction of microstructures and mechanical properties
for a ductile iron casting**

T.D. Park, Hyundai Heavy Industries Co., Ltd., Ulsan, Republic of Korea

Y.C. Yoon, Hyundai Heavy Industries Co., Ltd., Ulsan, Republic of Korea

09:30h

Cast Iron nodulization using Tundish Cover and Cored Wire method

M.A Altuna, Grupo Wec, Itziar-Deba, Spain

O. Pacho, Grupo Wec, Itziar-Deba, Spain

R. Barcos, Grupo Wec, Itziar-Deba, Spain

E. Sorazu, Grupo Wec, Itziar-Deba, Spain

G. Pedrero, Grupo Wec, Itziar-Deba, Spain

09:50h

**Threading on high strength iron casting; a key operation on final production
stages**

**I. Elosegui, Basque Country University, Mechanical Engineering Department,
Bilbao, Spain**

A. Fernández, Basque Country University, Mechanical Engineering Department,
Bilbao, Spain

L.N. López de Lacalle, Basque Country University, Mechanical Engineering
Department, Bilbao, Spain

I. Azkona, Metal Estalki Platit, Derio, Spain

J. Fdez de Larrinoa, Metal Estalki Platit, Derio, Spain



10:10h

Understanding Graphite Expansion during the Eutectic Solidification of Cast Iron through combined Linear Displacement and Thermal Analysis

G. Alonso, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

D. M. Stefanescu, the Ohio State University, Columbus, OH and The University of Alabama, Tuscaloosa, USA

R. Suárez, Veigalan Estudio 2010 SLU, Durango, Spain

A. Loizaga, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

G. Zarrabeitia, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

10:30h

Large sized casting constructions of thermal-fatigue resistant cast iron elaborated in integrated system of numerical calculations

A. Pytel, Department of Ferrous Alloys, Foundry Research Institute, Krakow, Poland

Stanislaw Pysz, Centre of Designing & Prototyping, Foundry Research Institute, Krakow, Poland

Marcin Malysza, Centre of Designing & Prototyping, Foundry Research Institute, Krakow, Poland

COFFEE BREAK 11:00h – 11:30h

11:30h – 13:30h

11:30h

Solidification of ductile iron inside the mould cavity: some ideas to improve the metal yield”.

N.T. Rizzo, Independent consultant, Valencia, Venezuela

11:50h

The effect of C, SI, MN, P and S additions on the chilling tendency of cast iron

Hugo F López, University of Wisconsin-Milwaukee, USA

E Fraś, AGH University of Science and Technology, , Cracow, Poland

M. Górny, AGH University of Science and Technology, Cracow, Poland



12:10h

As-Cast variations in mechanical testing of cast iron and its use to design tests for parameter studies

J. Åberg, Elkem Foundry Technology Products R&D, Kristiansand, Norway

E. G. Hoel, Elkem Foundry Technology Products R&D, Kristiansand, Norway

P. Galler, Elkem Technology, Kristiansand, Norway

12:30h

Effect of carbon, silicon, nickel and other alloying elements on the mechanical properties of as-cast ferritic ductile irons

J. Lacaze, CIRIMAT, Université de Toulouse, Toulouse, France

J. Sertucha, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

P. Larrañaga, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

R. Suárez, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

12:50h

Effect of Mn and S on the Mechanical properties of Gray Cast Iron

T. Kanno, Kimura Chuzosho Co., Ltd., Shizuoka-ken, Japan

I. Kang, Kimura Chuzosho Co., Ltd., Shizuoka-ken, Japan

13:10h

Optimizing of alloying elements and heat treatment cycle on production of ductile iron casting with subzero impact energy absorption

F. Sahihi, Oil Turbo Compressor Engineering Company, Teheran, Iran

R. Adjar, Oil Turbo Compressor Engineering Company, Teheran, Iran

R. Shahedi, Oil Turbo Compressor Engineering Company, Teheran, Iran

F. Shirazi, Oil Turbo Compressor Engineering Company, Teheran, Iran

LUNCH 13:30h – 15:00h

15:00h – 16:50h

15:10h

Effect of microstructure on the mechanical and performance properties of high-vanadium cast iron

M. Kawalec, AGH-University of Science and Technology, Krakow, Poland

M. Maj, AGH-University of Science and Technology, Krakow, Poland



15:30h

Grey cast iron for the automotive industry

O. Knustad, ELKEM Foundry Technology Products R&D, Kristiansand S, Norway

L. Magnusson Åberg, ELKEM Foundry Technology Products R&D, Kristiansand S, Norway

15:50h

Influence of Manganese and Nitrogen on the microstructure and mechanical properties of flake graphite cast iron

S. Hiratsuka, Iwate University, Morioka, Japan

H. Horie, Iwate University, Morioka, Japan

T. Kowata, Iwate University, Morioka, Japan

Y. Shobuzawa, Iwate University, Morioka, Japan

M. Ito, Iwate University, Morioka, Japan

16:10h

Effect of surface roughness on eddy current signal of ductile cast iron with different matrix

N. Horikawa, Asahikawa National College of Technology, Asahikawa, Hokkaido, Japan

16:30h

ADI - The New Dream Material for Gear Designers

A. Nofal, Central Metallurgical R&D Institute (CMRDI), Helwan, Egypt

COFFEE BREAK 16:50h – 17:20h

- ENERGY -

17:20h – 18:30h

17:20h

The effect of GHG emission on climate change due to inefficient usage of energy in South African steel foundries

Z. Rasmeni, University of Johannesburg, Department of Metallurgy, South Africa

Dr. X. Pan, Metal Casting Technology Station, University of Johannesburg, South Africa



17:40h

Importance and effect of foaming slag on energy efficiency

T. M. Kipepe, University of Johannesburg, Faculty of Engineering and the Built Environment, Doornfontein, Johannesburg, South Africa

18:00h

Analysis of energy efficiency and consumption in South African Steel foundries

Z. Z. Rasmeni, University of Johannesburg, Department of Metallurgy, South Africa

18:30h END OF THE SESSION DAY 1



ASK CHEMICALS BARRIA 1 CONFERENCE ROOM– 21ST MAY 2014

- CAST IRON -

09:00h – 11:00h

09:10h

The Ductile Iron Treatment Process Revisited

G.M. Hansen, Elkem AS, Foundry Technology Products R&D, Kristiansand, Norway

C. Hartung, Elkem AS, Foundry Technology Products R&D, Kristiansand, Norway

D. White, Elkem Materials Inc, Pittsburgh, Pennsylvania, USA

09:30h

Iron Casting Skin Management in No-Bake Mould – Effects of Magnesium Residual Level and Mould Coating

M. Chisamera, Politehnica University of Bucharest, Romania

N. Ivan, Politehnica University of Bucharest, Romania

I. Riposan, Politehnica University of Bucharest, Romania

S. Stan, Politehnica University of Bucharest, Romania

09:50h

Austenite stability of austempered ductile iron (ADI) in sub-zero conditions

L. Alava, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

P. Gacetabeitia, Fundiciones Betsaide S.A.L., Elorrio, Spain

I. Gallastegi, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

L.A. Hurtado, Fundiciones Betsaide S.A.L., Elorrio, Spain

J.M. Murua, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

10:10h

Review of Parameters Influencing the Low Temperature Impact Resistance and Other Mechanical Properties of Heavy Section DI Castings

S. Grenier, Rio Tinto Iron and Titanium, Sorel-Tracy, Quebec, Canada

P-M. Cabanne, Rio Tinto Iron and Titanium, Villepinte, France

C. Labrecque, Rio Tinto Iron and Titanium, Sorel-Tracy, Quebec, Canada



10:30h

The use of thermal analysis to compare solidification pattern, and evaluate performance, of several inoculants, in ductile iron

V. Anjos, OCC GmbH, Mönchengladbach, Germany

C. Silva Ribeiro, Universidade Do Porto - Faculdade De Engenharia, Oporto, Portugal

COFFEE BREAK 11:00h – 11:30h

11:30h – 13:30h

11:30h

The science of intercritically Austempered Ductile Iron (IADI)

A. P. Druschitz, Virginia Tech, Blacksburg, USA

M. Ostrander, Rex Heat Treat, Anniston, USA

R. Aristizabal, University of Antioquia, Medellin, Colombia

11:50h

Control of ductile iron austempering process by advanced data-driven modeling

M. A. Perzyk, Warsaw University of Technology, Warszawa, Poland

A. Kochanski, Warsaw University of Technology, Warszawa, Poland

J. Kozlowski, Warsaw University of Technology, Warszawa, Poland

D. Myszka, Warsaw University of Technology, Warszawa, Poland

12:10h

New Inoculation solutions beneficial against Chunky Graphite in Ductile Iron Castings

A. Fay, Ferropem, Chambéry, France

M. Koch, Ferropem, Chambéry, France

K. Soulas, Ferropem, Chambéry, France

12:30h

Development of a totally new inoculant for ductile iron castings

R. Akyuz, DEMİSAŞ. A.Ş. Vezirhan Beldesi, Bilecik, Turkey

E. Karadeniz, DEMİSAŞ. A.Ş. Vezirhan Beldesi, Bilecik, Turkey

A. Unal, DEMİSAŞ. A.Ş. Vezirhan Beldesi, Bilecik, Turkey

H. Gasan, Eskisehir Osmangazi University, Institute of Metallurgy, Eskisehir, Turkey



12:50h

Impact Characteristics and Mechanical Properties of Copper Alloyed Spheroidal Graphite Cast Irons

T. Nobuki, Takaya-Umenobe, Higashi-Hiroshima, Hiroshima, JAPAN

M. Hatate, Department of Mechanical Engineering, Faculty of Engineering, KINKI University.

T. Karasudani, Graduate School of Systems Engineering, KINKI University

Y. Okuzumi, Takaya-Umenobe, Higashi-Hiroshima, Hiroshima, JAPAN

13:10h

Controlling in-situ microstructure of S.G iron castings

S. K. Sharma, NS-19-22, NIECS Ltd., Uppalwadi, Nagpur, India

13:30h END OF THE SESSION DAY 2



CONFERENCE ROOM BARRIA 2 – 20TH MAY 2014

- NON FERROUS AND LIGHT ALLOYS -

09:00h – 11:00h

09:10h

Yttrium Addition Effect on High Temperature Mechanical Property of Ni Base Superalloy

D. S. Kang, Division of Advanced Materials Engineering, Chonbuk National University, Jeonju, Jeonbuk, Republic of Korea

K.D. Woo, Division of Advanced Materials Engineering, Chonbuk National University, Jeonju, Jeonbuk, Republic of Korea

D.G. Kim, Division of Advanced Materials Engineering, Chonbuk National University, Jeonju, Jeonbuk, Republic of Korea

T. Lee, Division of Advanced Materials Engineering, Chonbuk National University, Jeonju, Jeonbuk, Republic of Korea

W.J. Kang, NIB Materials Co, Jeonju, Jeonbuk, Republic of Korea

E.J. Cho, NIB Materials Co, Jeonju, Jeonbuk, Republic of Korea

09:30h

Analysis of the behaviour of steel components in contact with AZ91D and AM60 magnesium alloys in HPDC

P. Egizabal, Fundación TECNALIA, Unidad de Fundición y Siderurgia, San Sebastián, Spain

M. Merchán, Fundación TECNALIA, Unidad de Fundición y Siderurgia, San Sebastián, Spain

P. Corengia, Fundación TECNALIA, Unidad de Fundición y Siderurgia, San Sebastián, Spain

C. García, Grupo TTT, Bergara, Spain

M. Alberdi, Grupo TTT, Bergara, Spain



09:50h

The effect of cast shape and density differences between metal-matrix and solid particles on the distribution of the reinforcing phase in composites

M. Szucki, AGH University of Science and Technology, Faculty of Foundry Engineering, Department of Foundry Processes Engineering, Krakow, Poland

J. S. Suchy, AGH University of Science and Technology, Faculty of Foundry Engineering, Department of Foundry Processes Engineering, Krakow, Poland

J. Lelito, AGH University of Science and Technology, Faculty of Foundry Engineering, Department of Foundry Processes Engineering, Krakow, Poland

T. Goraj, AGH University of Science and Technology, Faculty of Foundry Engineering, Department of Foundry Processes Engineering, Krakow, Poland

P. L. Żak, AGH University of Science and Technology, Faculty of Foundry Engineering, Department of Foundry Processes Engineering, Krakow, Poland

B. Gracz, AGH University of Science and Technology, Faculty of Foundry Engineering, Department of Foundry Processes Engineering, Krakow, Poland

10:10h

Effect of Alloying Elements on Sulfide Morphology of Lead Free Bronze Castings with Dispersed Sulfides Particles

T. Maruyama, Kansai University, Suita, Osaka, Japan

H. Abe, North Eastern Industrial Research Center of Shiga Prefecture, Hikone, Shiga, Japan

R. Matsubayashi, Matsubayashi Co., Hikone, Shiga, Japan

M. Teramura, Biwalite Co., Hikone, Shiga, Japan

T. Kobayashi, Kansai University, Suita, Osaka, Japan

10:30h

Microstructure Modification of Al-4.5%Mg Alloy Using Ultrasonic Treatment

W. Khalifa, Faculty of Engineering, Cairo University, Giza, Egypt

Y. Tsunekawa, Toyota Technological Institute, Nagoya, Japan

COFFEE BREAK 11:00h – 11:30h



11:30h – 13:30h

11:30h

Separation of primary phases during solidification from Aluminum alloy melts by a centrifugal separation

K-Y. Kim, School of Energy, Materials and Chemical Engineering, Korea University of Technology and Education, Cheonan, Republic of Korea

J-B Jeon, School of Energy, Materials and Chemical Engineering, Korea University of Technology and Education, Cheonan, Republic of Korea

J-S. Shin, School of Energy, Materials and Chemical Engineering, Korea University of Technology and Education, Cheonan, Republic of Korea

J-W. Yoon, School of Energy, Materials and Chemical Engineering, Korea University of Technology and Education, Cheonan, Republic of Korea

11:50h

Development of a new methodology to use recycled secondary Aluminum substituting primary recycled A356 Aluminum alloy in safety components in low pressure technology

E. Ochoa de Zabalegui, EDERTEK S. Coop., Mondragon, Spain

J. Huarte, MAPSA S. Coop., Orcoyen, Spain

E. Zoco, MAPSA S. Coop., Orcoyen, Spain

J. Arraiza, MAPSA S. Coop., Orcoyen, Spain

E. Rivero, Fagor Ederlan S. Coop., Eskoriatza, Spain

A. Rios, Fagor Ederlan S. Coop., Eskoriatza, Spain

I. Anza, BEFESA Aluminio Bilbao S. L., Erandio, Spain

I. Alfaro, BEFESA Aluminio Bilbao S. L., Erandio, Spain

F. Sáenz de Tejada, BEFESA Aluminio Bilbao S. L., Erandio, Spain

I. Hurtado, Mondragon Unibertsitatea, Mondragon, Spain

Z. Azpilgain, Mondragon Unibertsitatea, Mondragon, Spain

G. Arruebarrena, Mondragon Unibertsitatea, Mondragon, Spain

J. Arriaran, EDERTEK S. Coop., Mondragon, Spain

I. Landa, EDERTEK S. Coop., Mondragon, Spain

P. Rodríguez, EDERTEK S. Coop., Mondragon, Spain



12:10h

StaCast Project: from a Survey of European Aluminium Alloys Foundries to New Standards on Defect Classification and on Mechanical Potential of Casting Alloys

F. Bonollo, University of Padova, Department of Management and Engineering, Vicenza, Italy

E. Fiorese, University of Padova, Department of Management and Engineering, Vicenza, Italy

G. Timelli, University of Padova, Department of Management and Engineering, Vicenza, Italy

L. Arnberg, NTNU – University of Trondheim, Trondheim, Norway

A. C. Ramesh Adamane, NTNU – University of Trondheim, Trondheim, Norway

12:30h

Improved grain size prediction in Aluminium-Silicon alloys by thermal analysis

J. Lacaze, CIRIMAT, Université de Toulouse, ENSIACET, Toulouse, France

D. Ferdian, CIRIMAT, Université de Toulouse, ENSIACET, Toulouse, France

I. Lizarralde, Veigalan Estudio 2010 S.L.U., Durango, Spain

A. Niklas, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

S. Eguskiza, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

A.I. Fernández-Calvo, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

12:50h

Effect of the cooling rate on distribution of transition elements in the intermetallic Al-Mn-Fe-Si phase in AlSi9MgMn alloy

Z. Z. Brodarac, University of Zagreb Faculty of Metallurgy, Sisak Croatia

D. Stanić, CIMOS - P.P.C. Buzet d.o.o., Buzet, Croatia

13:10h

Aluminium bimetal structure production by lost foam casting with liquid-liquid process

A. Kisasoz, Yildiz Technical University, Department of Metallurgy and Materials Engineering, Davutpasa Campu, Istanbul, Turkey

K.A.Guler, Yildiz Technical University, Department of Metallurgy and Materials Engineering, Davutpasa Campu, Istanbul, Turkey

A.Karaaslan, Yildiz Technical University, Department of Metallurgy and Materials Engineering, Davutpasa Campu, Istanbul, Turkey



LUNCH 13:30h – 15:00h

15:00h – 16:50h

15:10h

On the Effect of Strontium Additions over Macro-Shrinkage Porosity Defects in Hypo-eutectic Aluminum Alloys

R. Cuesta , Foundation for the Research and Development in Transport and Energy (CIDAUT), Valladolid, Spain

D. Arranz, , Foundation for the Research and Development in Transport and Energy (CIDAUT), Valladolid, Spain

R. Álvarez, , Foundation for the Research and Development in Transport and Energy (CIDAUT), Valladolid, Spain

J.A. Maroto, , Foundation for the Research and Development in Transport and Energy (CIDAUT), Valladolid, Spain

M.E. Alcalde, Foundation for the Research and Development in Transport and Energy (CIDAUT), Valladolid, Spain

15:30h

Improvement of Mechanical and Corrosion Behaviour in Die Casting Magnesium Alloys with the Addition of Grain Refiners

T. Posada, BOSTLAN S.A., Polígono Industrial Trobika, Munguía, Spain

J. C. García, TECNALIA, San Sebastian, Spain

I. Vicario, TECNALIA, San Sebastian, Spain

I. Crespo, TECNALIA, San Sebastian, Spain

L. M. Plaza, TECNALIA, San Sebastian, Spain

D. Val, TECNALIA, San Sebastian, Spain

G. Borge, Grupo Antolín S.A., Burgos, Spain

15:50h

Intelligent Degassing - Studies on Controlling the Process of Hydrogen Removal from Aluminium

R. Simon, Foseco Europe, Borken, Germany

R. Kendrick, Foseco Europe, Tamworth, Great Britain



16:10h

Analysis of the effects of the modifier elements (Sr, Sb) in Al-Si foundry alloys

J. Dúl, University of Miskolc, Miskolc Hungary

Gy. Fegyverneki, University of Miskolc, Miskolc, Hungary

M. Tokár, University of Miskolc, Miskolc Hungary

V. Mertinger, University of Miskolc, Miskolc Hungary

16:30h

How to solve air and gas blow holes in the Aluminum Gravity Die Castings? A shop floor experience and 4 case studies

M. Thirugnanam, Chennai, Tamilnadu state, India

COFFEE BREAK 16:50h – 17:20h

17:20h – 18:30h

17:20h

Development of Heat Treatments for Automotive Components die-cast with Secondary Aluminium Alloy at Semi-Solid state

S. Capuzzi, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

S. Ferraro, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

G. Timelli, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

L. Capra, Raffineria Metalli Capra S.p.A., Castel Mella (BS), Italy

G.F. Capra, Raffineria Metalli Capra S.p.A., Castel Mella (BS), Italy

I. Loizaga, Fundación CIE, Vizcaya (Bilbao), Spain.



17:40h

Modelling of nucleation substrates size distribution in Aluminium-Zinc alloy
B. Gracz, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow Poland

J. Lelito, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

P. L. Zak, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

M. Szucki, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

D. Kapinos, Institute of Non Ferrous Metals, Light Metals Division
Skawina, Poland

B. Augustyn, Institute of Non Ferrous Metals, Light Metals Division
Skawina, Poland

18:00h

Development of new Al-Si9Cu3 alloys for HPDC components with tailored properties

I. Vicario, TECNALIA Research & Innovation, San Sebastián, Spain

I. Anza, Befesa Aluminio, Erandio, Spain

F. Sáenz de Tejada, Befesa Aluminio, Erandio, Spain

J. C. García, TECNALIA Research & Innovation, San Sebastián, Spain

H. Galarra, TECNALIA Research & Innovation, San Sebastián, Spain

M. Merchán, TECNALIA Research & Innovation, San Sebastián, Spain

18:30h END OF THE SESSION DAY 1



CONFERENCE ROOM BARRIA 2 – 21ST MAY 2014

- NON FERROUS AND LIGHT ALLOYS -

09:00h – 11:00h

09:10h

Study of the Influence of Alloying Elements on the High Temperature Properties of Wrought Aluminium Alloys

M. Merchán, Fundación TECNALIA R&I, San Sebastián (Guipúzcoa), Spain

P. Egizabal, Fundación TECNALIA R&I, San Sebastián (Guipúzcoa), Spain

H. Galarraga, Fundación TECNALIA R&I, San Sebastián (Guipúzcoa), Spain

D. Álvarez, Fundación INATEC, Legutiano, Spain

09:30h

Effect of Nb Addition on Young's Modulus and Linear Expansion Coefficient of Cast Pure Titanium

L. Shibing, Shenyang Research Institute of Foundry, Shenyang city, China

L. Yanchun, Shenyang Research Institute of Foundry, Shenyang city, China

X. Huasheng, Shenyang Research Institute of Foundry, Shenyang city, China

Z. Jun, Shenyang Research Institute of Foundry, Shenyang city, China

L. Hongyu, Shenyang Research Institute of Foundry, Shenyang city, China

S. Kun, Shenyang Research Institute of Foundry, Shenyang city, China

09:50h

Semi-Solid Slurry Generation and Casting by the New ULTRA-SSM Technology Based on Ultrasounds

M. da Silva, Fundació Privada Ascamm, Cerdanyola del Vallès, Spain

A. Chico, Fundació Privada Ascamm, Cerdanyola del Vallès, Spain

A. Fauria, Ultrason, S.L., Cerdanyola del Vallès, Spain

X. Planta, Ultrason, S.L., Cerdanyola del Vallès, Spain

J.M. Padro, Prensas y Transformaciones, S.A., Alió, Spain

J.L. de Castro, Prensas y Transformaciones, S.A., Alió, Spain

M.T. Baile, Centro de Diseño de Aleaciones Ligeras y Tratamientos de Superficie, Vilanova i la Geltrú, Spain

S. Menargues, Centro de Diseño de Aleaciones Ligeras y Tratamientos de Superficie, Vilanova i la Geltrú, Spain



10:10h

Improved Precision in Grain Size Prediction by Thermal Analysis and Statistical Analysis in Aluminium Castings

A. Fernández, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Spain

I. Lizarralde, Veigalan Estudio 2010 S.L.U., Durango, Spain

S. Eguskiza, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Spain

F. Santos, Veigalan Estudio 2010 S.L.U., Durango, Spain

A. Niklas, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Spain

10:30h

Surface Chemical Inhomogeneity of High-Pressure Die Cast Al-Si Alloys and its Effects on Corrosion Behaviors and Adhesive Bonding Capabilities

J. Shi, Institut of Joining and Welding, Technische Universität Braunschweig, Braunschweig, Germany

H. Pries, Institut of Joining and Welding, Technische Universität Braunschweig, Braunschweig, Germany

K. Dilger, Institut of Joining and Welding, Technische Universität Braunschweig, Braunschweig, Germany

M. Klein, Department of Materials Test Engineering, Technische Universität Dortmund, Dortmund, Germany

F. Walther, Department of Materials Test Engineering, Technische Universität Dortmund, Dortmund, Germany

COFFEE BREAK 11:00h – 11:30h



11:30h – 13:30h

11:30h

The Influence of Cr content on the Fe-rich phase Formation and Impact toughness of a Die-cast AlSi9Cu3(Fe) alloy

G. Timelli, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

S. Ferraro, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

A. Fabrizi, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

S. Capuzzi, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

F. Bonollo, University of Padova – Dep. of Management and Engineering, Vicenza, Italy

L. Capra, Raffineria Metalli Capra S.p.A., Castel Mella (BS), Italy

G.F. Capra, Raffineria Metalli Capra S.p.A., Castel Mella (BS), Italy

11:50h

Machinability of Short Alumina Fiber Reinforced Aluminum Alloy Composite

K. Asano, Department of Mechanical Engineering, Faculty of Science and Engineering, Kinki University, Higashiosaka, Japan

H. Yoneda, Department of Mechanical Engineering, Faculty of Science and Engineering, Kinki University, Higashiosaka, Japan

12:10h

Grain refinement of zinc-aluminium based foundry alloys

W. K. Krajewski, AGH University of Science and Technology, Krakow, Poland

A. L. Greer, University of Cambridge, Cambridge, United Kingdom

P.K. Krajewski, GH University of Science and Technology, Krakow, Poland

G. Piwowarski, GH University of Science and Technology, Krakow, Poland



12:30h

Effect of Ultrasonic Vibration on Microstructure of Mg-RE-Zn-Y Cast Alloys

S. Wu, State Key Lab of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, P. R. China

X. Fang, State Key Lab of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, P. R. China

L. Zhao, State Key Lab of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, P. R. China

S. LÜ, State Key Lab of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, P. R. China

P. An, State Key Lab of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, P. R. China

12:50h

Microstructure Evolution and Mechanical Properties of Sonoprocessed-Thixocast AC4C Billets

W. Khalifa, Department of Mining, Petroleum and Metallurgical Engineering, Faculty of Engineering, Cairo University, Giza, Egypt

S. El-Hadad, Central Metallurgical Research & Development Institute, Helwan-Cairo, Egypt

Y. Tsunekawa, Toyota Technological Institute, Nagoya, Japan

13:10h

High-temperature Study of monotectic transformation, wetting and reactivity of liquid Gd-Ti Alloys

N. Sobczak, Foundry Research Institute, Center for High-Temperature Studies, Krakow, Poland, Motor Transport Institute, Warsaw, Poland

R. Nowak, Foundry Research Institute, Center for High-Temperature Studies, Krakow, Poland

A. Siewiorek, Foundry Research Institute, Center for High-Temperature Studies, Krakow, Poland

B. Korpala, Foundry Research Institute, Center for High-Temperature Studies, Krakow, Poland

G. Bruzda Foundry Research Institute, Center for High-Temperature Studies, Krakow, Poland

I. Kaban, IFW Dresden, Institute for Complex Materials, Dresden, Germany

O. Shuleshova, IFW Dresden, Institute for Complex Materials, Dresden, Germany

J.H. Han, IFW Dresden, Institute for Complex Materials, Dresden, Germany

N. Mattern, IFW Dresden, Institute for Complex Materials, Dresden, Germany

J. Eckert, IFW Dresden, Institute for Complex Materials, Dresden, Germany. TU

Dresden, Institute of Materials Science, Dresden, Germany



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13:30h END OF THE SESSION DAY 2



LORAMENDI AURRENAK A2 CONFERENCE ROOM - 20TH MAY 2014

- FOUNDRY TECHNOLOGIES, EQUIPMENT, MANUFACTURING, TOOLS, ROBOTICS AND AUTOMATION -

09:00h – 11:00h

09:10h

Model Predictive Control for Pressurized Molten Metal with Liquid Temperature Drop in Press Casting Process

R. Tasaki, Department of Mechanical Engineering, Toyohashi University of Technology, Toyohashi, Japan

K. Hashimoto, Sintokogio Ltd., Toyokawa, Japan

K. Terashima, Department of Mechanical Engineering, Toyohashi University of Technology, Toyohashi, Japan

09:30h

A rational for Determining the Benefit of Aeration Green Sands filling

S. Ramrattan, Western Michigan University, Kalamazoo, Michigan USA

H. Makino, Sintokogio Ltd, Aichi, Japan

M. Hirata, Sintokogio Ltd, Aichi, Japan

S. Takasu, Sintokogio Ltd, Aichi, Japan

H. Miyazaki, Sintokogio Ltd, Aichi, Japan

09:50h

A New concept for Thermal Sand Regeneration Systems

P. Bocca, Fata Aluminum srl, Pianezza (TO), Italy

B. Tosco, Fata Aluminum srl, Pianezza (TO), Italy

10:10h

Improved Determination of Carbon in Cast Iron

K. Toedter, SPECTRO Analytical Instruments, Kleve, Germany

H-G Joosten, SPECTRO Analytical Instruments, Kleve, Germany

10:30h

Casting Press Tools for Manufacturing Glass Components

P. K Sandell, Institute for Inspiration & Self Development, Kolkata, India



COFFEE BREAK 11:00h – 11:30h

11:00h – 11:30h

11:30h

Advancements in Cold Box Gassing Processes

J. Kroker, ASK Chemicals L.P., Dublin, Ohio USA

X. Wang, ASK Chemicals L.P., Dublin, Ohio USA

11:50h

The Melting, Holding and Pouring Process - Energy and Process-Related Aspects

I. Abendaño, Hermann Otto Suderow, Las Arenas, Spain

W. Schmitz, OTTO JUNKER GmbH, Simmerath, Germany

D. Trauzeddel, OTTO JUNKER GmbH, Simmerath, Germany

12:10h

Application of Sand Mold Creation By 3D Printer with Artificial Sand

Y. Tomita, Kimura chuzosho co. Ltd., Shimizu-cho, Shizuoka, Japan

Y. Fukuda, Kimura chuzosho co. Ltd., Shimizu-cho, Shizuoka, Japan

12:30h

Refractory innovations permitting time, energy & cost savings in foundry meltshop applications. Advantages with Quick Dry – (qd) refractory

K. Stinzinger, Foundry Market Manager, Calderys Refractory Solutions, Neuwied, Germany

A. Fowler, Foundry Global Market Senior Manager, Calderys Refractory Solutions, Leeds, United Kingdom

12:50h

High Performance Tubular Foam Ceramic Filters for the Foundry Industry

M. U. Voigt, ASK Chemicals Feeding Systems GmbH, Bendorf, Germany

L. R. Horvath, ASK Chemicals US LP, Dublin (OH), USA



13:10h

Development and Extending of sodium silicate used sand reclamation technology and equipment

Z. Yisong, Wuxi Xi nan Foundry Machinery Co.,Ltd, China

W. Dianjie, The Ninth Design and research institute of mechanical industry, China

L. Yuqing, Changchun Vocational Institute of Technology Jilin Changchun, China

LUNCH 13:30h – 15:00h

15:00h – 16:50h

15:10h

Sheet Metal Mould Casting – A Novel Alternative to Production of Sand Castings

P.C. Maity, Prof., Mechanical Engg. Dept. CT Institute of Engineering, Management and Technology, Jalandhar, India

15:30h

Modeling and Analysis on Stream-Tube of Pouring Flow with a Pair of Multi-Pendulum in Self-Transfer-Type Automatic Pouring Robot

R. Shibuya, Toyohashi University of Technology, Department of Mechanical Engineering, Aichi, Japan

R. Tasaki, Toyohashi University of Technology, Department of Mechanical Engineering, Aichi, Japan

K. Terashima, Toyohashi University of Technology, Department of Mechanical Engineering, Aichi, Japan

15:50h

Increasing Productive Efficiency of Casting of Ferrous and Non-ferrous Alloys

M.A. Sadokha, BELNIILIT, JSC, Minsk, Republic of Belarus

A.P. Melnikau, BELNIILIT, JSC, Minsk, Republic of Belarus

16:10h

Latest Developments in Recycling Production Residues Employing Coreless Induction Furnaces

W. Schmitz, OTTO JUNKER GmbH, Simmerath, Germany

D. Trauzeddel, OTTO JUNKER GmbH, Simmerath, Germany



16:30h

Research and Development of Technology for Large – Thin Wall – High Quality Aluminum Castings for Aircraft Industry

M. Horacek, Brno University of Technology, Institute of Manufacturing Technology, Brno, Czech Republic

L. Zemcik, Brno University of Technology, Institute of Manufacturing Technology, Brno, Czech Republic

V. Kosour, Brno University of Technology, Institute of Manufacturing Technology, Brno, Czech Republic

I. Stachovec, Brno University of Technology, Institute of Manufacturing Technology, Brno, Czech Republic

L. Soukupova, Brno University of Technology, Institute of Manufacturing Technology, Brno, Czech Republic

P. Vastak, Fimes,a.s. Foundry, Uherske hradiste, Czech Republic

J. Horensky, Fimes,a.s. Foundry, Uherske hradiste, Czech Republic

J. Jedovnický, Fimes,a.s. Foundry, Uherske hradiste, Czech Republic

COFFEE BREAK 16:50h – 17:20h

17:20h – 18:30h

17:20h

“Raman Spectroscopy of Flake Graphite as a tool to detect Stress-Strain States in Cast Iron”

B. Estandia, SCTI Servicios Científico-Técnicos de Investigación, Edificio de Laboratorios I+D, Universidad de Cantabria, Santander, Spain

L. Rodríguez, SCTI Servicios Científico-Técnicos de Investigación, Edificio de Laboratorios I+D, Universidad de Cantabria, Santander, Spain

J.A. Álvarez, Departamento de Ciencia de Materiales, E.T.S. de Ingenieros de Caminos, Canales y Puertos, Universidad de Cantabria, Santander, Spain

D. Ferreño, Departamento de Ciencia de Materiales, E.T.S. de Ingenieros de Caminos, Canales y Puertos, Universidad de Cantabria, Santander, Spain

D. Hernández, SCTI Servicios Científico-Técnicos de Investigación, Edificio de Laboratorios I+D, Universidad de Cantabria, Santander, Spain

J. González, MALTA-Consolider Team, CITIMAC, Facultad de Ciencias, Universidad de Cantabria, Santander, Spain



17:40h

A New Process to Produce Consistent High Quality Foundry Grade Chromite Sand

J. D. Howden, ICME, Australia

L. Miller, Hoffman Estates, Illinois, USA

C. A. Duggan, North Geelong, Victoria, Australia

18:00h

**Development of Global Holonic Casting Manufacturing Concepts and Principles:
A Study**

**M. Manapuram, North Eastern Regional Institute of Science and Technology,
Itanagar, Arunachal Pradesh, India**

G. Lal Datta, K.L.University, Vaddeswaram, Andhra Pradesh, India

18:30h END OF THE SESSION DAY 1



LORAMENDI AURRENAK A2 CONFERENCE ROOM – 21ST MAY 2014

- FOUNDRY TECHNOLOGIES, EQUIPMENT, MANUFACTURING, TOOLS, ROBOTICS AND AUTOMATION -

09:00h – 11:00h

09:10h

Optimum Trajectory Generation for Lower Position Pouring and Outflow Liquid Falling Position Control

A. Ito, Toyohashi University of Technology, Department of Mechanical Engineering, Aichi, Japan

R. Tasaki, Toyohashi University of Technology, Department of Mechanical Engineering, Aichi, Japan

M. Suzuki, Sintokogio, LTD, Aichi, Japan

K. Ohta, Sintokogio, LTD, Aichi, Japan

K. Terashima, Toyohashi University of Technology, Department of Mechanical Engineering, Aichi, Japan

09:30h

Development of high pressure die casting dies with internal refrigeration and sensors with reinforced cast steel

I. Vicario, TECNALIA Research & Innovation, San Sebastián, Spain

J. K. Idoiaga, Industrias Lebario, Izurza, Spain

E. Arratibel, Industrias Lebario, Nanclares de la Oca, Spain

I. Erauskin, TECNALIA Research & Innovation, San Sebastián, Spain

L.M. Plaza, TECNALIA Research & Innovation, San Sebastián, Spain

I. Crespo, TECNALIA Research & Innovation, San Sebastián, Spain

P. Caballero, TECNALIA Research & Innovation, San Sebastián, Spain

09:50h

Increasing the weldability of die cast parts by minimal die lubrication

Ch. Garthoff, Institut of joining and welding, University of Technology Braunschweig, Braunschweig, Germany

H. Pries, Institut of joining and welding, University of Technology Braunschweig, Braunschweig, Germany

K. Dilger, Institut of joining and welding, University of Technology Braunschweig, Braunschweig, Germany

D. Tomazic, Chem-Trend (Deutschland) GmbH, Norderstedt, Germany



10:10h

Vacuum Technology the Modern Processing of Bentonite-Bonded Molding Sand in Foundries

**Mr. Christoph Heynen, Maschinenfabrik Gustav Eirich GmbH & Co KG,
Hardheim, Germany**

G. Feuerstein, Maschinenfabrik Gustav Eirich GmbH & Co KG, Hardheim, Germany

10:30h

The Influence of Process Parameters to Composite Interface Organization and Performance of Liquid/solid Bimetal

**S. F. Rong, School of Materials Science and Engineering, Jiamusi University,
Jiamusi, China**

H. T. Zhou, School of Materials Science and Engineering, Jiamusi University, Jiamusi, China

Y. C. Zhu, School of Materials Science and Engineering, Jiamusi University, Jiamusi, China

X. M. Zhao, School of Materials Science and Engineering, Jiamusi University, Jiamusi, China

B. G. Yang, Jinan Foundry and Metalforming Machinery Research Institute Co., LTD, Jinan, China

COFFEE BREAK 11:00h – 11:30h

11:30h – 13:30h

11:30h

Continuously-iterative casting by freezing-up of tube billets

**Y.I. Marukovich, Institute of Technology of Metals, National Academy of Sciences
of Belarus, Mogilev, Republic of Belarus**

U.F. Bevza, Institute of Technology of Metals, National Academy of Sciences of Belarus, Mogilev, Republic of Belarus

V.P. Grusha, Institute of Technology of Metals, National Academy of Sciences of Belarus, Mogilev, Republic of Belarus



11:50h

Opportunities to Optimize Internal Cooling Systems Used for the Aluminum Die-Casting Process

S. Müller, Institute of Joining and Welding, Braunschweig University of Technology, Braunschweig, Germany

H. Pries, Institute of Joining and Welding, Braunschweig University of Technology, Braunschweig, Germany

K. Dilger, Institute of Joining and Welding, Braunschweig University of Technology, Braunschweig, Germany

12:10h

Application Study of Rapid Manufacturing for Engine Parts

Z. Shan, China Academy of Machinery Science and Technology, Beijing, China

J. Xu, Advanced Manufacturing Technology Center, China Academy of Machinery Science & Technology, Beijing, China

12:30h

New developments in hybrid use of induction and plasma heating technologies for melting and holding ferrous and non-ferrous alloys

D. Eguizabal, TECNALIA R&I, San Sebastian, Spain

L. Cobos, TECNALIA R&I, San Sebastian, Spain

J.A. Iparraguirre, TECNALIA R&I, San Sebastian, Spain

I. Arocena, GIS2003 S.L, Vilanova i la Geltrú, Barcelona, Spain

P. Rodriguez, EDERTEK S. Coop., Mondragon, Spain

12:50h

High Temperature Crucible Production, Properties and Application

D. Heumannskaemper, Morgan Advanced Materials MMS, Berkatal, Germany

M. Pavoni, Morgan Advanced Materials MMS, Berkatal, Germany

13:10h

A study on design of centrifugal casting process for a large aluminum motor rotor

J. H. Yoo, Hyundai Heavy Industries Co., Ltd, Ulsan, Republic of Korea

D. S. Kim, Hyundai Heavy Industries Co., Ltd, Ulsan, Republic of Korea

S. M. Lee, Hyundai Heavy Industries Co., Ltd, Ulsan, Republic of Korea

Y. C. Yoon, Hyundai Heavy Industries Co., Ltd, Ulsan, Republic of Korea

13:30h END OF THE SESSION DAY 2



CONFERENCE ROOM A3 – 1 – 20TH MAY 2014

- ADVANCED ENGINEERING: DESING, CALCULATION AND SIMULATION TOOLS -

09:00h – 11:00h

09:10h

**Analysis of Casting Defects in Steel Foundry by Computerized Simulations (CAE)
- A New Approach along with some Industrial Case Studies**

**T. Roy, Steel Foundry Division, Texmaco Rail & Engineering. Limited, Kolkata,
India**

09:30h

Casting Of Titanium Alloys in Centrifugal Induction Furnaces

A. Karwiński, Foundry Research Institute, Kraków, Poland

W. Leśniewski, Foundry Research Institute, Kraków, Poland

P. Wieliczko, Foundry Research Institute, Kraków, Poland

M. Małysza, Foundry Research Institute, Kraków, Poland

09:50h

Analysis and Prediction of Casting Defects Using Casting Simulation

G. Thiel, University of Northern Iowa, Cedar Falls, Iowa, USA

S. Ravi, University of Northern Iowa, Cedar Falls, Iowa, USA

10:10h

Simulation of the AZ91/SiC_p composite solidification

**J. Lelito, AGH University of Science and Technology, Faculty of Foundry
Engineering, Krakow, Poland**

P. L. Zak, University of Science and Technology, Faculty of Foundry Engineering,
Krakow, Poland

B. Gracz, University of Science and Technology, Faculty of Foundry Engineering,
Krakow, Poland

M. Szucki, University of Science and Technology, Faculty of Foundry Engineering,
Krakow, Poland

P. Malinowski, University of Science and Technology, Faculty of Foundry Engineering,
Krakow, Poland

J. S. Suchy, University of Science and Technology, Faculty of Foundry Engineering,
Krakow, Poland



10:30h

Numerical analysis of the casting process of H282 alloy

J.J. Sobczak, Foundry Research Institute, Krakow, Poland

R.M. Purgert, Energy Industries of Ohio, Cleveland, USA

S. Pysz, Foundry Research Institute, Krakow, Poland

M. Malysza, Foundry Research Institute, Krakow, Poland

N. Sobczak, Foundry Research Institute, Krakow, Poland, Motor Transport Institute, Warsaw, Poland

Z. Pirowski, Foundry Research Institute, Krakow, Poland

W. Uhl, Foundry Research Institute, Krakow, Poland

K. Jaskowiec, Foundry Research Institute, Krakow, Poland

COFFEE BREAK 11:00h – 11:30h

11:30h – 13:30h

11:30h

Software for the Optimization of Raw Materials in Casting: A Key to Quality and Competitiveness

A. Montenegro, CEO of AMV Soluciones, Vigo, Spain

11:50h

Calculation of Thermophysical Properties of Casting Alloys and Its Application to Casting Simulation

I-S. Cho, Korea Institute of Industrial Technology, Republic of Korea

H-Y. Hwang, Korea Institute of Industrial Technology, Republic of Korea

S.-M. Yoo, Korea Institute of Industrial Technology, Republic of Korea

C.-H Lim, Korea Institute of Industrial Technology, Republic of Korea

12:10h

New trends in simulation process and data management in foundry industry

P. Malinowski, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

J. S. Suchy, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

J. Lelito, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland



12:30h

**Mold Filling Simulation using Porous-Media Grids and Gas-Liquid Flow Analysis
MARS Method**

**Y. Maeda, Dept. of Maritime Safety Technology, Japan Coast Guard Academy,
Kure, Hiroshima 737-8512, Japan**

12:50h

**Light weight in iron, new design, process and material strategies developments of
nodular graphite iron in suspension components for the automotive industry**

P. Rodríguez, Edertek S. Coop., Mondragon, Spain

N. Egidazu, Edertek S. Coop., Mondragon, Spain

E. Ochoa de Zabalegui, Edertek S. Coop., Mondragon, Spain

J. Altuna, Fagor Ederlan S. Coop. Eskoriatza, Spain

A. Rios, Edertek S. Coop., Mondragon, Spain

X. Herboso, Edertek S. Coop., Mondragon, Spain

13:10h

Experimental Verification of Progressive Method for Porosity Prediction

**M. Bruna, University of Žilina, Faculty of Mechanical Engineering, Department of
Technological Engineering, Slovak Republic**

A. Sladek, University of Zilina, Faculty of Mechanical Engineering, Department of
Technological Engineering, Slovak Republic

LUNCH 13:30h – 15:00h

15:00h – 16:50h

15:10h

Advanced Quality Control in Foundry Manufacturing Process

M. Saleem, University of Duisburg-Essen, Duisburg, Germany

S. Malik, University of Duisburg - Essen, Duisburg, Germany

J. Gottschling, University of Duisburg - Essen, Duisburg, Germany

D. Hartmann, Kempten University of Applied Sciences, Kempten, Germany



15:30h

Nonparametric Optimum Design Method for Die Casting Using Computational Fluid Dynamics Simulations

K. Kanazawa, Department of Mechanical Engineering, Mie University, Tsu, Mie, Japan

K. Yano, Department of Mechanical Engineering, Mie University, Tsu, Mie, Japan

J. Ogura, Yamaha Motor Co., Ltd., Iwata, Shizuoka, Japan

15:50h

Centrifugal Casting of Large Ti-6Al-4V Structural Components supported by Process Modelling

O. Koeser, Calcom ESI, Lausanne, Switzerland

B. Kalkunte, Calcom ESI, Lausanne, Switzerland

R. Yang, Institute of Metal Research (IMR), Shenyang, China

H. Nan, Beijing Institute of Aeronautic Materials (BIAM), China

16:10h

Accuracy analysis of Rank Controlled Differential Quadrature method against exact solution of AlZn cooling model

P.L. Żak, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

J. Lelito, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

B. Gracz, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

M. Szucki, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

J. S. Suchy, AGH University of Science and Technology, Department of Foundry Processes Engineering, Krakow, Poland

16:30h

More robust processes and more added value for foundries based on inverse modelling and tailor-made software tools

A. Meléndez, TECNALIA R&I. Industry and Transport Division, San Sebastián, Spain

E. Anglada, TECNALIA R&I. Industry and Transport Division, San Sebastián, Spain

L. Maestro, PCB-PRECICAST BILBAO, Barakaldo, Spain

I. Domínguez, PCB-PRECICAST BILBAO, Barakaldo, Spain



COFFEE BREAK 16:50h – 17:20h

17:20h – 18:30h

17:20h

High-Precision Pouring Control Based on Mathematical Model with Online Parameters Identification

T. Tsuji, University of Yamanashi, Kofu, Japan

Y. Noda, University of Yamanashi, Kofu, Japan

M. Suzuki, Shintokogio, Ltd., Toyokawa, Japan

K. Ohta, Shintokogio, Ltd., Toyokawa, Japan

K. Terashima, Toyohashi University of Technology, Toyohashi, Japan

- ENVIROMENT AND SUSTAINABILITY -

17:40h

Low Emission Foundry

M. Favini, IMF Group, Luino, Italy

18:00h

Influence of the reclaim addition to the moulding sand with furan resin on the emission of toxic gases at high temperature

M. Holtzer, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

R. Dańko, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

M. Kubecki, Institute for Ferrous Metallurgy in Gliwice, Poland

S. Żymankowska-Kumon, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

A. Bobrowski, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

A. Kmita, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

M. Górny, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland



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18:30h END OF THE SESSION DAY 1



CONFERENCE ROOM A3 – 1– 21ST MAY 2014

- ENVIROMENT AND SUSTAINABILITY -

09:00h – 11:00h

09:10h

Environmental-Friendly Sand Casting Technique using Frozen Mold

**S. Tada, National Institute of Advanced Industrial Science and Technology,
Nagoya, Aichi, Japan**

N. Omura, National Institute of Advanced Industrial Science and Technology, Nagoya,
Aichi, Japan

Y. Murakami, National Institute of Advanced Industrial Science and Technology,
Nagoya, Aichi, Japan

09:30h

Environmentally friendly and highly efficient binder systems for self-curing experience from the field

A. Gieniec, ASK Chemicals GmbH, Hilden, Germany

W. Senden, Componenta, Hoensbroek, Netherlands

J. van Putten, ASK Chemicals GmbH, Waalwijk, Netherlands

09:50h

Understanding Emission Characteristics of a Foundry Sand Binder

S. R. Giese, University of Northern, Cedar Falls, Iowa, USA

A. Shepard, University of Northern Iowa, Cedar Falls, Iowa, USA

10:10h

Possibility of utilization of dust generated during mechanical reclamation of used sands moulds as a source of energy

**M. Holtzer, AGH University of Science and Technology, Faculty of Foundry
Engineering, Krakow, Poland**

R. Dańko, AGH University of Science and Technology, Faculty of Foundry
Engineering, Krakow, Poland

M. Górny, AGH University of Science and Technology, Faculty of Foundry
Engineering, Krakow, Poland



10:30h

Utilisation of the Latest Binder and Sand Conditioning Technology to Reduce Costs and Improve the Foundry Environment

C. J. Wilding, Omega Foundry Machinery Ltd, UK

P. Fein, Omega Foundry Machinery Ltd, UK

COFFEE BREAK 11:00h – 11:30h

11:30h – 13:30h

11:30h

GreenSand "Less is Best" a More Sustainable Philosophy for Change

J. Howden, Amcol International, Australia

B. Officer, Amcol International, Chicago IL, USA

11:50h

The establishment of sustainable development capacity of the foundry industry index evaluation system

A. Guangkuo, Shenyang Research Institute of Foundry, Shenyang, China

Z. Qiang, Shenyang Research Institute of Foundry, Shenyang, China

C. Jingchang, Shenyang Research Institute of Foundry, Shenyang, China

Z. Jiawei, Shenyang Research Institute of Foundry, Shenyang, China

G. Ying, Shenyang Research Institute of Foundry, Shenyang, China

12:10h

Recovery of Bentonite and Other Materials from Foundry Waste Streams

V. LaFay, S&B Industrial Minerals, Cincinnati, Ohio

C. Grefhorst, S&B Industrial Minerals, Marl, Germany

N. Richardson, S&B Industrial Minerals, United Kingdom

M. Pine, F. Daniels, J. Tibbs, S&B Industrial Minerals, Cincinnati, Ohio

12:30h

Engineering and Organizational Work, Planning and Control Method to Obtain Solutions for Waste Foundry Sands in Brazil. Success case ADF / UFS in Brazil, and presentation of the model for deploying international committee to discuss solutions for ADF / UFS

F. G. Filho, ABIFA - Brazilian Foundry Association -, Sao Paulo, Brazil



- ENERGY -

12:50h

Advanced Sustainable Foundry – Carbon Balance and Carbon Footprint in Foundry Processes and Foundry Product Cycles

J. Helber, B-B-H Beratungsbüro, Duisburg, Germany

G. Zarrabeitia, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

13:10h

Possibility check-up of shredded scraps usage in foundry

S. H. Lee, Korea Institute of Industrial Technology, Incheon, Republic of Korea

J. H. Hong, Korea Institute of Industrial Technology, Incheon, Republic of Korea

S. M. Yoo, Korea Institute of Industrial Technology, Incheon, Republic of Korea

N. C. Bae, Caskod Co., Ltd., Incheon, Republic of Korea

S. D. Lee, Jinheung Co., Ltd., Incheon, Republic of Korea

S. M. Lee, Korea Institute of Industrial Technology, Incheon, Republic of Korea

13:30h END OF THE SESSION DAY 2



CONFERENCE ROOM A3 2 – 20TH MAY 2014

- CAST STEEL -

09:00h – 11:00h

09:10h

Study regarding the influence of the material quality on the cavitation erosion resistance of soft martensitic stainless steels used for the casting of hydraulic turbines parts

C. I. Lupinca, “Eftimie Murgu” University of Resita, Romania

D. Frunzaverde, “Eftimie Murgu” University of Resita, Romania

E.R. Durut, “Eftimie Murgu” University of Resita, Romania

R. Ciubotariu, “Eftimie Murgu” University of Resita, Romania

M.D. Nedeloni, “Eftimie Murgu” University of Resita, Romania

09:30h

The use of new essay techniques to investigate the behaviour of austenitic steels with nano-alloys

P. Caballero, TECNALIA, Research and Innovation, San Sebastián, Spain

J.C. García, TECNALIA, Research and Innovation, San Sebastián, Spain

09:50h

An overview on high manganese steel casting

C. Mahlami, University of Johannesburg, Department of Metallurgy, South Africa

10:10h

Net/Gross yield optimization on high value added steel casting

J. Prat, Ask Chemicals España, Getxo, Spain

A. Carrasco, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

D. Peña, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

G. Trillo, FONDESAL S.A., Rubí, Spain

J. Izaga, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

M. Manzanares, FONDESAL S.A., Rubí, Spain

10:30h

Effects of Alloying Elements on Heat Shock Resistance of Low Carbon Cast Steel

N. Harada, Kurimoto Ltd, Osaka, Japan

M. Takuma, Kansai University, Suita, Japan

M. Tsujikawa, Osaka Prefecture University, Sakai, Japan

K. Higashi, Osaka Prefecture University, Sakai, Japan



COFFEE BREAK 11:00h – 11:30h

- MOULDING, CORE MAKING AND RAPID PROTOTYPING -

11:30h – 13:30h

11:30h

Clean technology: a innovative organic binder for aluminium and iron casting

M. Vargas, Hüttenes-Albertus, France

11:50h

Low-Emission Core Binders Reduce Core Sand Dilution: TG-GC-MS Analysis of Core Sand Binders and Understanding the Hydrophobic Nature of Core Binder Condensates and Recycled Core Sand

A.N. Zook, Lehigh University, Bethlehem, PA, USA

J. T. Fox, Lehigh University, Bethlehem, PA, USA

S. Sheets, Lehigh University, Bethlehem, PA, USA

12:10h

Development of an inorganic core binder system for multiple applications under varying foundry conditions

P. Oberschelp, S&B Industrial Minerals Gmbh, Marl, Germany

A. Decher, S&B Industrial Minerals Gmbh, Marl, Germany

N. Richardson, S&B Industrial Minerals Gmbh, Marl, Germany

D. Genske, S&B Industrial Minerals Gmbh, Marl, Germany

12:30h

Nothing is Impossible – Advancements in the Field of Inorganic Binder Systems

J. Müller, ASK Chemicals GmbH, Hilden, Germany

H. Deters, ASK Chemicals GmbH, Hilden, Germany

M. Oberleiter, ASK Chemicals GmbH, Hilden, Germany

H. Zupan, ASK Chemicals GmbH, Hilden, Germany

H. Lincke, ASK Chemicals GmbH, Hilden, Germany

R. Resch, ASK Chemicals GmbH, Hilden, Germany

J. Körschgen, ASK Chemicals GmbH, Hilden, Germany

A. Kasperowski, ASK Chemicals GmbH, Hilden, Germany



12:50h

New Core Binder System for Aluminum Casting Based on Polysaccharide

T. Aoki, SINTOKOGIO, Ltd., Toyokawa, Japan

Y. Kato, SINTOKOGIO, Ltd., Toyokawa, Japan

T. Zenpo, SINTOKOGIO, Ltd., Toyokawa, Japan

N. Asano, SINTOKOGIO, Ltd., Toyokawa, Japan

13:10h

Bentonite Modification to Meet Today's Molding Requirements

C. Grefhorst, S&B Industrial Minerals GmbH, Marl, Germany

S. Böhnke, S&B Industrial Minerals GmbH, Marl, Germany

V. LaFay, S&B Industrial Minerals, Cincinnati, Ohio, USA

N. Richardson, S&B Industrial Minerals, United Kingdom

LUNCH 13:30h – 15:00h

15:00h – 16:50h

15:10h

The High Temperature Deformation Behaviour of Bentonite Bonded Sands and Possibilities for their Influence – New Results

H. Polzin, TU Bergakademie Freiberg, Foundry Institute, Freiberg, Germany

D. Ranft, TU Bergakademie Freiberg, Foundry Institute, Freiberg, Germany

W. Tilch, TU Bergakademie Freiberg, Foundry Institute, Freiberg, Germany

C. Grefhorst, S & B Industrial Minerals GmbH, Marl, Germany

S. Böhnke, S & B Industrial Minerals GmbH, Marl, Germany

15:30h

Creation of Castings/Mold Interface Characterized by Heat Insulation and Good Heat Transfer in Aluminum Die-casting

Y. Furukawa, Toyota Motor Corporation, Toyota, Japan

Y. Tsunekawa, Toyota Technological Institute, Nagoya, Japan



15:50h

Research on Digital Forming Process of Desulfurization Gypsum Mould

F.Liu, Advanced Manufacturing Technology Center, China Academy of Machinery Science & Technology, Beijing, China

Z. Wang, Advanced Manufacturing Technology Center, China Academy of Machinery Science & Technology, Beijing, China

Z. Shan, China Academy of Machinery Science and Technology, Beijing, China

16:10h

Thermo-physical properties vs. Temperature of selected foundry sands

P.K. Krajewski, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

J.S. Suchy, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

G. Piwowarski, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

W.K. Krajewski, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

16:30h

Influence of the furan moulding sand on the nodular Iron casting surface quality

R. Dańko, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

M. Górny, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

M. Holtzer, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

S. Żymankowska-Kumon, AGH University of Science and Technology, Faculty of Foundry Engineering, Krakow, Poland

COFFEE BREAK 16:50h – 17:20h



- CAST STEEL -

17:20h – 18:30h

17:20h

A Duplex Stainless Steel Casting With 1 wt.% Gadolinium For A Neutron Absorbing Material With High Strength And Corrosion Resistance

B. M Moon, Korea Institute of Industrial Technology, In-Cheon, Republic of Korea

J. H Ahn, Korea Institute of Industrial Technology, In-Cheon, Republic of Korea

S. T Kimb, Yonsei University, Seoul, Republic of Korea

17:40h

New Advances of Foundry AOD Refining Process

H. Yongliang, Shenyang Research Institute of Foundry, Shenyang, China

Y. Zengnan, Shenyang Research Institute of Foundry, Shenyang, China

Z. Pengcheng, Shenyang Research Institute of Foundry, Shenyang, China

L. Zhongchao, Shenyang Research Institute of Foundry, Shenyang, China

L. Xinfeng, Shenyang Research Institute of Foundry, Shenyang, China

Z. Zhongqiu, Shenyang Research Institute of Foundry, Shenyang, China

18:00h

Fabrication of Al/Steel composites by vacuum assisted block mould investment casting technique

A. Kisasoz, Yildiz Technical University, Department of Metallurgy and Materials Engineering, Davutpasa Campu, Istanbul, Turkey

K.A.Guler, Yildiz Technical University, Department of Metallurgy and Materials Engineering, Davutpasa Campu, Istanbul, Turkey

A.Karaaslan, Yildiz Technical University, Department of Metallurgy and Materials Engineering, Davutpasa Campu, Istanbul, Turkey

18:30h END OF THE SESSION DAY 1



CONFERENCE ROOM A3 2 – 21ST MAY 2014

- MOULDING, CORE MAKING AND RAPID PROTOTYPING -

09:00h – 11:00h

09:10h

The use of nanomaterials for the synthesis of high-temperature phase in refractory coatings

Y. Nicolaichick, Mechanical-technological faculty, Foundry Department Belorussian national technical university, Minsk, Republic of Belarus

D. Kukui, Mechanical-technological faculty, Foundry Department Belorussian national technical university, Minsk, Republic of Belarus

09:30h

New Casting Strategy for Eliminating both Indigenous and Exogenous gas porosity within the mould

P. Habibullah, Ph.D, Ex-G.M. Coord (Tech) CAA, Pakistan

M. A. Mahmood, Assist. G.M. Pakistan Railways, Pakistan

Z. Anwar, Marriala Consultants, Engineering and Software Solutions, Pakistan

09:50h

The Use of Specialty Sand Blends to Improve Casting Quality and Reduce Costs

S. Ravi, University of Northern Iowa, Cedar Falls, USA

J. Thiel, University of Northern Iowa, Cedar Falls, USA

10:10h

Additives to Reduce Veining and Avoid Refractory Coatings

J. Prat, ASK Chemicals S.A.U, Las Arenas, España

R. Stötzel, ASK Chemicals GmbH, Hilden, Germany

I. Yilmaz, ASK Chemicals GmbH, Hilden, Germany

10:30h

Consistent coating application properties through automated preparation and continuous density control

G. Genzler, Foseco Europe, Borken, Germany



COFFEE BREAK 11:00h – 11:30h

11:30h – 13:00h

11:30h

Semi-Permanent Release Agent for Cold Box Core Production

S. Clifford, ASK Chemicals LP, Cleveland, Ohio, USA

H. Rehse, ASK Chemicals GmbH, Hilden, Germany

11:50h

Active cooling of resin bonded moulds to reduce the cooling time of heavy- section castings without loss of casting quality

W. Stets, IfG – Institut für Gießereitechnik, Düsseldorf, Germany

U. Petzschmann, IfG – Institut für Gießereitechnik, Düsseldorf, Germany

12:10h

Modern coatings for the manufacture of core packages: Preparation and application

B. Gravesen, Hüttenes-Albertus Chemische Werke GmbH, Fredericia, Denmark

U. Pohlmann, Hüttenes-Albertus Chemische Werke GmbH, Langenfeld, Germany

K. Seeger, Hüttenes-Albertus Chemische Werke GmbH, Hannover, Germany

A. Serghini, Hüttenes-Albertus Chemische Werke GmbH, Neukirchen-Vluyn, Germany

12:30h

A new method for the measurement of flowability of green moulding sand

J. L. Bast, Technical University Bergakademie Freiberg, Freiberg, Germany

12:50h

On the nature of high pressure die casting die failures

B. Zabala, IK4-TEKNIKER, Tribology Department, Eibar, Spain

A. Igartua, IK4-TEKNIKER, Tribology Department, Eibar, Spain

F. Pagano, IK4-TEKNIKER, Tribology Department, Eibar, Spain

M. Conte, IK4-TEKNIKER, Tribology Department, Eibar, Spain

H. Eibisch, AUDI AG Ingolstadt, Technologieentwicklung Gießen, Germany

R. Heid, Technische Universität Braunschweig, Institut für Füge- und Schweißtechnik, Germany



13:10 h

Researchers on the used for the non-mold casting flue gas desulfurization gypsum mold formula

Y. Wang, Advanced Manufacturing Technology Center, China Academy of Machinery Science & Technology, Beijing, China

Z. Shan, China Academy of Machinery Science and Technology, Beijing, China

X. Zhang, School of Materials Science and Engineering, China University of Mining and Technology, Jiangsu, China

W. Rong, Advanced Manufacturing Technology Center, China Academy of Machinery Science & Technology, Beijing, China

13:30h END OF THE SESSION DAY 2



CONFERENCE ROOM A3 3 – 20TH MAY 2014

- MANANAGMENT, EDUCATION AND TRAINING -

09:00h – 11:00h

09:10h

E-Foundry: Free Online Learning Resources in Casting Design and Simulation
B. Ravi, Indian Institute of Technology Bombay, Mumbai, India

09:30h

Developing the Future Workforce: The UK Perspective. The need for technicians
P. A. Murrell FICME, Institute of Cast Metals Engineers, ICME, West Bromwich, UK
R. S. A. Brown Prof MICME, CEng, Bradford College, Bradford, UK

09:50h

Advanced E-learning Training technologies for green sand practice and control
P. Verdot, Amcol International, Europe, USA
M. Van Leirsburg, Amcol International, USA

10:10h

Sustainability is the Key Driver of Innovation
D.R. Cooper, Fairmount Minerals Ltd, Benton Harbor, Michigan, USA

10:30h

Applying the Principal of the 7-I's to Improve Technology Transfer
T.E. Prucha, American Foundry Society, Schaumburg, USA

COFFEE BREAK 11:00h – 11:30h



YOUNG RESEARCHERS PROGRAMME

11:30h – 13:30h

11:30 h

Three-dimensional numerical analysis of the harmfulness of defects in oil pipes

M. Bachir, University of Mascara, Mascara, Algeria

L. A. Benlebna, University of Mascara, Mascara, Algeria

A. B. Serier, University of Mascara, Mascara, Algeria

11:50 h

3D Numerical Simulation of Aeration Sand Filling-High Pressure Squeeze Molding Method

N. Changjiang, Tsinghua University, Beijing, China

Z. Qingdong, Tsinghua University, Beijing, China

J. Tao, Tsinghua University, Beijing, China

W. Junjiao, Tsinghua University, Beijing, China

H. Makino, SINTOKOGIO, Ltd, Nagoya, Japan

12:10 h

Research and Development of Innovative 2D Casting Process of CAD System Based on Neutral File and Non-parametric Drawing

H.T Tang, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China

J.X Zhou, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China

X.Y Ji, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China

D.M Liao, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China

12:30 h

Towards an effective dimensional verification of eolic casting

U. Mutilba, IK4-TEKNIKER, Eibar, Spain

I. del Río, IK4-TEKNIKER, Eibar, Spain



12:50 h

The research on the optimal solution for casting process design based on casting simulation software

J. X. Zhou, State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, China

X. Shen, State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, China

D.M. Liao, State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, China

S.Y. Pang, State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, China

Y.J. Yin, State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, China

H.T. Tang, State Key Laboratory of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan, China

13:10 h

Double chains collaboration model between production management and quality control: three casting factories application cases

J. Xiaoyuan, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

Z. Jianxin, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

L. Dunming, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

T. Hongtao, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

J. Hai, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

Y. Yixian, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

H. Xiaochuan, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

L. Yun, State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science & Technology, Wuhan, China

LUNCH 13:30h – 15:00h



15:00h – 16:50h

15:10h

Characteristics of Erosive wear with FE-V-CR-C cast irons

K. Kusumoto, Muroran Institute of Technology, Muroran city, Japan

K. Shimizu, Muroran Institute of Technology, Muroran city, Japan

S. Kiguchi, Kinki University, Higashi-Osaka city, Japan

Y. Nakajo, Muroran Institute of Technology, Muroran city, Japan

O. Cheiliakh, Pryazovskyi State Technical University, Mariupol, Ukraine

V. Iefremenko, Pryazovskyi State Technical University, Mariupol, Ukraine

Y. Chabak, Pryazovskyi State Technical University, Mariupol, Ukraine

15:30h

Fracture characterization of new generation ferritic spheroidal cast irons

G. Artola, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

A. Iglesias, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

I. Berriozabalgaitia, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

M.Muro, IK4-AZTERLAN, Metallurgy Research Centre, Durango, Spain

15:50h

Process modeling and microstructure prediction validation of sand ductile iron castings

E. Salsi, Interdepartmental Center for Industrial Research CIRI-MAM of University of Bologna, Bologna, Italy

R. Squatrito' Interdepartmental Center for Industrial Research CIRI-MAM of University of Bologna, Bologna, Italy

I. Todaro' Interdepartmental Center for Industrial Research CIRI-MAM of University of Bologna, Bologna, Italy

L. Tomesani' Interdepartmental Center for Industrial Research CIRI-MAM of University of Bologna, Bologna, Italy



16:10h

Machining with Ceramic Inserts of ADI Parts for Achieving Tight Tolerances

A. Fernández-Valdivielso, Department of Mechanical Engineering, University of the Basque Country, Bilbao, Spain

G. Urbikain, Department of Mechanical Engineering, University of the Basque Country, Bilbao, Spain

A. Rodríguez-Ezquerro, Department of Mechanical Engineering, University of the Basque Country, Bilbao, Spain

M. Arsuaga, Department of Mechanical Engineering, University of the Basque Country, Bilbao, Spain

L. N. López de Lacalle, Department of Mechanical Engineering, University of the Basque Country, Bilbao, Spain

16:30h

Fatigue characteristic of spheroidal graphite cast iron with alternate material of rare earth

T. Funabiki, Muroran Institute of Technology, Muroran city, Hokkaido, Japan

K. Shimizu, Muroran Institute of Technology, Muroran city, Japan

Y. Nakajo, Muroran Institute of Technology, Muroran city, Japan

S. Kiguchi, Kinki University, Higashi Osaka city, Japan

M. Yamamoto, SATO CHIUKO Co.,Ltd., Moseushi cho, Japan

COFFEE BREAK 16:50h – 17:20h

- POSTER PRESENTATION -

17:20h – 18:30h

18:30h END OF THE SESSION DAY 1



CONFERENCE ROOM A3 3 – 21ST MAY 2014

- MANANAGMENT, EDUCATION AND TRAINING -

09:00h – 11:00h

09:10h

30 years tradition on education Finnish casting users

O. Piha, Aalto University, Espoo, Finland

T. Saarelainen, Aalto University, Espoo, Finland

J. Orkas, Aalto University, Espoo, Finland

09:30h

If only my foundry knew what it knows ...”: a 7Epsilon perspective on root cause analysis and corrective action plans for ISO9001:2008

H. Md. Roshan, Maynard Steel Casting Company, Milwaukee, WI, USA

C. Giannetti, College of Engineering Swansea University, Swansea, UK

M.R. Ransing, p-matrix Ltd, Swansea, UK

R.S. Ransing, College of Engineering Swansea University, Swansea, UK

09:50h

Quality and Supplier Strategy of Automotive Industry

M. Ata, Continental Automotive Systems, Frankfurt am Main, Germany

10:10h

High Quality Foundries are closing All Over the World: Want to Know Why?

M. A. Mehling, American Foundry Society/Port Oranga, Florida, USA

10:30h

Global Metalcasting: Assessing Our Strengths and Weaknesses & Developing Inputs for a Sustainable Future

A. T. Spada, American Foundry Society, Schaumburg, Illinois, USA

COFFEE BREAK 11:00h – 11:30h



-YOUNG RESEARCHERS PROGRAMME-

11:30h – 13:30h

11:30h

Ti-6Al-4V turbine blade investment casting melted in cold crucible induction melting

X. Chamorro, Mondragon Unibertsitatea, Mechanical and Manufacturing Department, Arrasate, Spain.

N. Herrero-Dorca, Mondragon Unibertsitatea, Mechanical and Manufacturing Department., Arrasate, Spain

I. Quintana, Mondragon Unibertsitatea, Mechanical and Manufacturing Department, Arrasate, Spain

P. P. Rodríguez, ALFA Investigación, Desarrollo e Innovación, A. I. E., Grupo ALFA, Eibar, Spain

U. Andrés, ALFA Investigación, Desarrollo e Innovación, A. I. E., Grupo ALFA, Eibar, Spain

J. Leunda, KONIKER.S.COOP., Aretxabaleta, Guipúzcoa, Spain

M. Machado, MATRICI.S.COOP., Zamudio, Vizcaya, Spain

Z. Azpilgain, Mondragon Unibertsitatea, Mechanical and Manufacturing Department, Arrasate, Spain

11:50h

A Patternless Method for a Rapid Casting of Singular Parts

A. Rodríguez, Department of Mechanical Engineering, University of the Basque Country, Spain

A. Fernández, Department of Mechanical Engineering, University of the Basque Country, Spain

L.N. López de Lacalle, Department of Mechanical Engineering, University of the Basque Country, Spain



12:10h

Microstructural features of primary and secondary ductile high pressure die casting alloys for the automotive industry

A. Bakedano, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

R. González-Martínez, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

A. Niklas, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

M. da Silva, Fundació Privada Ascamm, Cerdanyola del Vallès, Spain

Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Spain

M. Garat, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

A.I. Fernández-Calvo, IK4-AZTERLAN, Metallurgy Research Centre, Engineering, R&D and Metallurgical Processes, Durango, Spain

12:30h

Evaluation of fluidity of semi-solid aluminum alloy slurry prepared by mechanical vibration

Y. Murakami, National Institute of Advanced Industrial Science and Technology, Nagoya, Japan

K. Miwa, Aichi Science and Technology Foundation, Kariya, Japan

M. Kito, Aisan Industry Co., Ltd., Obu, Japan

T. Honda, Aisan Industry Co., Ltd., Obu, Japan

N. Kanetake, Nagoya University, Nagoya, Japan

S. Tada, National Institute of Advanced Industrial Science and Technology, Nagoya, Japan

12:50h

Critical Control Variables For The Coating Process Of Furan Bonded Sand With Water Based Foundry Coatings

G. L. Di Muoio, Global Castings A/S, Copenhagen, Denmark

N. Skat Tiedje, Technical University of Denmark, Copenhagen, Denmark

B. Budolph Johansen, Global Castings A/S, Copenhagen, Denmark



13:10h

Sensor for the Detection of Sand-Filling-Process in Aeration Molding Machines

H. Polzin, TU Bergakademie Freiberg, Germany

M. Strehle, TU Bergakademie Freiberg, Germany

H. Makino, SINTOKOGIO, LTD. Nagoya, Japan

H. Miyazaki, SINTOKOGIO, LTD. Nagoya, JAPAN

13:30h END OF THE SESSION DAY 2



POSTERS

CADI – Carbide Austempered Ductile Iron. Control structure in order to improve the tribological properties

M. Kranc, Department of Ferrous Alloys, Foundry Research Institute, Krakow, Poland

Z. Pirowski, Department of Ferrous Alloys, Foundry Research Institute, Krakow, Poland

A. Bitka, Department of Ferrous Alloys, Foundry Research Institute, Krakow, Poland

The effect of alloying elements on the elevated-temperature properties of high Si-Mo cast iron

K. H. Choe, Korea Institute of Industrial Technology, Incheon, Republic of Korea

K. W. Lee, Korea Institute of Industrial Technology, Incheon, Republic of Korea

M. H. Kim, Inha University, Incheon, Republic of Korea

Improvement of Nitriding Characteristics of Ductile Cast Iron by an Addition of Alloying Elements

Y. Kawasaki, Graduate student, Hiroshima Campus, Kinki University, Higashi-hiroshima, Hiroshima, Japan

J. Sumioka, Graduate student, Hiroshima Campus, Kinki University, Higashi-hiroshima, Hiroshima, Japan

M. Hatate, Dept. of Mechanical Engineering, Faculty of Engineering, Kinki University, Higashi-hiroshima, Hiroshima, Japan

T. Nobuki, Dept. of Mechanical Engineering, Faculty of Engineering, Kinki University, Higashi-hiroshima, Hiroshima, Japan

N. Hamasaka, Manufacturing Engineering Department Center, Komatsu Ltd., Hirakata, Osaka, Japan

Y. Yamaguchi, Manufacturing Engineering Department Center, Komatsu Ltd., Hirakata, Osaka, Japan

New induction wireless efficient manufacturing process for furnaces

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Ceramic Plasma-sprayed coating for a Re-usable crucible

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Fabrication and Characterization of U-Zr Fuel Slug prepared by an Injection Casting Method for SFR

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Microstructure behavior of brass alloy billet solidified by progressively controlled casting

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Microstructure and hardness of an Al-7wt.%Si alloy billet solidified by progressively controlled casting

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The effect of Misch-metal on Microstructure and Hardness of AM80-xMM Magnesium Alloy

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The Recycling of Current Scrap of The Casting Alloys of Magnesium Through The Use of The Innovative Method Endomodification

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Metal Wastes Recycling By Means Of Rotary Furnaces

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Challenges and Developments of Hadfield manganese steel castings based on service life

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The Effects of Ca, Mg and Si Alloys for Surface Tension and Viscosity in Molten Al, Mg Alloys

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Quantitative 3D Characterization of morphology of graphite in ductile iron by x-ray computed tomography

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