ICR® 2022 – SCIENTIFIC PROGRAMME

(Preliminary as of 14th August 2022)

28th September 2022

10:00 ***Opening event / Keynotes***

Ulf Frohneberg	Opening address from the President, DFFI
Dagmar Dieterle-Witte	Opening address from the CEO, marketSTEEL
Rainer Gaebel *Refratechnik Holding*	The future of the refractory industry – the transformation of Refratechnik towards CO_2 neutrality
Hendrik Adam *Tata Steel*	The future of the steel industry – the transformation of Tata Steel towards CO_2 neutrality
Constantin Beelitz *RHI Magnesita*	The future of energy supply and diversification – the trends in the process industry
Alexander Lück *VNG*	The future of energy supply and diversification – the trends in the energy supply industry

12:30 **Lunch**

13:20 ***Castables – Materials design*** ***Location: Hall Europa***

J. Astoveza *Imerys France*	The hydration of iron in calcium aluminate blended cements incorporating recycled industrial by-products
M. Ghassemi Kakroudi, S. Sajjadi Milani, N. Pourmohammadie Vafa *University of Tabriz*	Investigating the effect of different sols on alumina-spinel castable refractory
S. Abdelouhab, C. Delmotte, C. Lang, V. Vandeneede, E. Brochen, C. Dannert *BCRC-INISMa*	Development of a boehmite colloidal suspension as new binder for refractory castables
S. Kuiper, S. Klaus, D. Schmidtmeier, J. Dutton, A. Buhr *Almatis*	Three decades of Alphabond 300: an overview of its technical advantages
S. Haxel, M. Edinger, S. Barlag, S. Horn, C. Setzer *Chemische Fabrik Budenheim*	Increasing shelf life and maintaining the plasticity of phosphate bonded plastic storable mixes
R. Kockegey-Lorenz, A. Buhr, D. Schmidtmeier, S. Klaus, J. Dutton *Almatis*	Review of dispersing alumina and the matrix advantage system 25 years after launch
H. Peng, T. Zhu, Y. Li *Elkem Silicon Products Development*	Influence of a novel spherical alumina on fracture behaviour of Al_2O_3-C sliding gate based on wedge splitting tests

13:20 ***Materials Testing*** ***Location: Hall K3***

E. Brochen, C. Dannert, J. Klose, S. Esch, P. Kohns, G. Ankerhold *Forschungsgemeinschaft Feuerfest*	Contactless and non-destructive investigation of refractory materials thanks to the laser ultrasonic technology

T. Tonnesen, W. Reichert, J. Gonzalez-Julian, M. Henze, G. Hirt *RWTH Aachen University*	Determination of Young's Modulus and modelling of thermo-mechanical behavior of refractories
T. Steffen, C. Dannert, O. Krause, A. Koch *Forschungsgemeinschaft Feuerfest*	Testing the CO resistance of refractory materials – a new technological approach to deliver reliable results in shorter testing times
M. Picicco, S. Cappuzzo, S. Sanchetti, L. Folco, D. Gustinčič, J. Laing *Stazione Sperimentale del Vetro*	Thermal conductivity: a modified panel method to speed up measures for lightweight and dense refractory materials
G. Sinha, K. Asif Ahmed, S. Sinha, I.N. Chakrabory *Calderys India Refractories*	Smart designing of refractory formulation

16:00 Castables – Processing (I) ***Location: Hall Europa***

M. Bastian, C. Dannert, O. Krause, A. Pokhrel, L. Tadeo Ibarra Plata *Forschungsgemeinschaft Feuerfest*	Measurement of the dynamic viscosity of refractory castables – Interaction between slurry and aggregates
J. Angelkort, M. Cichocki, S. Higgins, N. Fröse *Intocast*	The impact of Li_2CO_3 and some other accelerators on the CAC hydration
J. Kasper, M. Bastian, C. Dannert *Forschungsgemeinschaft Feuerfest*	The role of the pH value on setting of CA cement bonded refractory castables containing phosphate, citric acid and Li_2CO_3

15:20 Poster Session ***Location: Hall K3***

Short 4-minute pitches on their latest research from the authors of the scientific posters

17:00 Evening reception at the congress venue (flying buffet, drinks, networking)

29th September 2022

09:00 Iron and Steelmaking (I) ***Location: Hall Europa***

V. Reynaud, J. Poirier, E. de Bilbao, B. Touzo *Calderys*	Challenges of Al_2O_3-SiC-C refractory castables: case studies on blast furnace main iron troughs
T. Joly, M. Richmond, A. Patrick, D. Shukla *Vesuvius Europe*	Next generation of taphole clay: formaldehyde and PAH free technology
V. Kara, N. Sarioglu, H. Gorkem Yanik, V. Kara *KUMAS Manyezit Sanayi*	The new EAF hearth ramming mass design with environmental impact
Ç. Baglan, O. Isik, O. Aydin *MATIL*	Use of electric arc furnace slag waste as raw material of refractory insulating brick
C. Baudín, A.H. de Aza, S. Serena, S. Martínez-Chaparro, P. Acosta Sánchez, E. Quirós Pino, J.F. Almagro Bello *Instituto de Cerámica y Vidrio, CSIC*	Post-mortem study of MgO-C based bricks from stainless-steel ladles

09:20 Cement Production ***Location: Hall K3***

A. Mitra, S. Hazra, P.R. Rauta *Dalmia Bharat Refractories*	Variation of elastic property of magnesia spinel bricks with varying percentage of spinel for cement rotary kiln
O.H. Borges, J.A.P. Sardelli, C. Pagliosa Neto, V.C. Pandolfelli *Federal University of São Carlos*	The role played by ZnO as spinel-like phase inducer in alumina-based castables
M.F. Torío *Arciresa - Arcillas Refracta*	FBA (Fired Bauxite Aggregate): A European innovative sintered aggregate alternative to BFA for refractory applications
B. Polat, B. Avcioglu *Çimsa Cement Industry and Trade*	Investigation of physical and chemical properties of refractory concrete produced by using calcium aluminate cement

11:00 Iron and Steelmaking (II) ***Location: Hall Europa***

L. Otávio Zaparoli Falsetti, D.N. Ferreira Muche, M.R.B. Andreeta, M.H. Moreira, V.C. Pandolfelli *Federal University of São Carlos*	Surface wettability of ceramic porous plugs and its performance in removing non-metallic inclusions from molten steel
C. Ebner, M.-A. Müller, T. Müller, J.-F. Stenger *RHI Magnesita*	From lab to plant - from mine to refractory bricks: Making use of a new dolomite raw material source in Europe
J.A.P. Sardelli, O.H. Borges, **C. Pagliosa Neto**, V.C. Pandolfelli *RHI Magnesita R&D Center*	In situ Al_2O_3-MgO and Al_2O_3-ZnO spinel formation: The Kinkerdall effect on physical and mechanical properties
L. Loison, C. Ganser, B. Bele, P. Masson, P. Kutscheck *ArcelorMittal Maizières Research*	Improvement of free opening at ArcelorMittal R&D slab pilot caster
G. Ghosh, A. Singh, N. Sinha, P. Panigrahi, B. Singh *Tata Steel*	Development of spinel containing tundish working lining refractory to increase the sequence length for low carbon steel at Tata Steel

11:00 Non-Ferrous Metallurgy ***Location: Hall K3***

J. Neese, R. Pfaar, B. Kesselheim, S. Rollmann, T. Schemmel *Refratechnik Steel*	Improvement of the corrosion resistance of refractory concretes against low-viscosity aluminum melts
M. Zhang, M. Larsson, E. Alibasic, R. Robles *Höganäs Borgestad*	Innovative low density fused silica precast shapes for aluminum casthouse
S. Moehmel, D. Holland, J. Norman *IMERYS Technology Center Villach*	The impact of raw materials on the properties of dry vibration silica mixes
V.K. Atanga, J. Jurek, J. Andre, U. Bach, J. Hess *Dörentrup Feuerfestprodukte*	Improving the service life of refractory hot face protective linings for channel induction furnaces in areas where slag and molten iron reside
C. Voigt, G.C. Gumban, J. Hubálková, C.G. Aneziris *TU Bergakademie Freiberg*	Improved cooper qualities for recycling approaches based on metal melt filtration with the aid of ceramic foam filters

12:40 Lunch

13:40	***Castables – Processing (II)***	***Location: Hall Europa***
	R. Simmat, C. Dannert, O. Krause, B. Noll, T. Stein *Forschungsgemeinschaft Feuerfest*	Influence of deflocculants on the drying behaviour of calcium aluminate bonded refractory castables
	B. Noll, T. Stein, O. Krause, R. Simmat, C. Dannert *Koblenz University of Applied Sciences*	Influence of deflocculants on the cement phase formation and their impact on the technological properties of CAC bonded castables
	M.H. Moreira, H. Peng, B. Myhre, S. Dal Pont, V.C. Pandolfelli *Federal University of São Carlos*	The size effect on the drying behavior of castables - An experimental and numerical perspective

13:40	***Corrosion***	***Location: Hall K3***
	J. Sperber, F.-J. Duennes *Steuler-KCH*	Refractory Technologies to master the challenge of H_2 atmospheres
	A. Koch, O. Krause, T. Steffen, C. Dannert *Koblenz University of Applied Sciences*	Growth and development of carbon nanotubes in cement bonded refractory materials
	K. Hauke, C. Dannert, O. Krause, M. Kaminski, A. Baulich, J. Paul *Forschungsgemeinschaft Feuerfest*	Investigations of alkali corrosion in a temperature gradient from 1700 °C to 500 °C by a unique corrosion test setup
	J. Paul, O. Krause, L. Erbar, F. Holleyn, K. Hauke, M. Sollbach *Koblenz University of Applied Sciences*	The informative value of crucible tests for alkali corrosion in refractory castables
	M. Talebi, D. Azimi, A. Rezaee, F. Barzegary Dehaj, A. Sani, N. Rajaee, M.A. Harirbafan *Yazd Faranasooz*	High-Temperature corrosion behavior of commercial alumina-spinel refractory castables by metallurgical slags

15:00	***Castables – Contour Crafting***	***Location: Hall Europa***
	L. Klein, F. Holleyn, S. Zimmer, O. Krause *Koblenz University of Applied Sciences*	Research and development of new 3D printing technologies and adaptation of the contour-crafting process to refractories – Part I: Basics of the printing process and contour-crafting setup
	F. Holleyn, L. Klein, S. Zimmer, O. Krause *Koblenz University of Applied Sciences*	Part II: Castable development
	S. Zimmer, L. Klein, F. Holleyn, O. Krause *Koblenz University of Applied Sciences*	Part III: In situ Raman spectroscopy of refractory castables

16:00 End of ICR 2022

This preliminary programme is subject to change without notice. A final programme will be available online and as booklet during ICR® 2022.