

# **ICR**<sup>®</sup> International Colloquium on Refractories

September 25<sup>th</sup> and 26<sup>th</sup>, 2019  
EUROGRESS Aachen, Germany

## Supplier Industries enabling REFRACTORIES Programme



organized by:



hosted by:



[www.ic-refractories.eu](http://www.ic-refractories.eu)

# **SUSTAINABLE DEVELOPMENT: ONE FUTURE BY IMERYS ALUMINATES**



Through our shared history in supplying minerals to the refractory industry over the past 100 years, we are aware of the need to continuously adapt to the changing global environment.

Imerys Aluminates focuses on stewardship of our unique mineral reserves to offer our customers security of supply not just for today, but to ensure a long term sustainable solution for refractory minerals, whatever tomorrow may bring.

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### Wednesday September 25<sup>th</sup>, 2019

Time	EUROPA SAAL	BRÜSSEL SAAL
10:00 - 12:00	Opening Session	
12:00 - 13:00	Gustav-Eirich-Award	
13:00	Lunch	
14:00 - 15:40	Cokemaking	Castables I
15:40	Break	
16:00 - 17:40	Refractory maintenance	Castables II

### Thursday September 26<sup>th</sup>, 2019

Time	EUROPA SAAL	BRÜSSEL SAAL
09:20 - 11:00	Casting	Incineration
11:00	Break	
11:20 - 12:20	Raw Materials	Testing and Simulation
12:20	Lunch	
13:20 - 15:00	Boost innovation	Firing Technology

#### Programme EUROPA SAAL + BRÜSSEL SAAL

Exhibitor list - page 18 - 19

Poster exhibition is in front of the Brüssel Saal  
 Poster Award: Wednesday 16:00 - 17:00  
 Page 24 - 25

## IMPORTANT ADDRESSES

### **Scientific Programme, Congress Bureau**

**ECREF** European Centre for Refractories gGmbH

Susanne Hartoch

Rheinstr. 58

56203 Höhr-Grenzhausen, Germany

Tel.: ++49 2624 9433-140

Fax: ++49 2624 9433-135

E-mail: [info@ic-refractories.eu](mailto:info@ic-refractories.eu)

### **Congress Venue**

**EUROGRESS** Aachen

Monheimsallee 48

52062 Aachen, Germany

Tel.: ++49 241 9131-0

Fax: ++49 241 9131-200

[info@eurogress-aachen.de](mailto:info@eurogress-aachen.de)

[www.eurogress-aachen.de](http://www.eurogress-aachen.de)

### **Exhibition**

**Top Messebau GmbH**

Annette Jahn

Max-Planck-Str. 16

52249 Eschweiler, Germany

Tel.: ++49 2403 7839-12

Fax: ++49 2403 7839-19

E-mail: [aj@topmessebau.de](mailto:aj@topmessebau.de)

**[info@ic-refractories.eu](mailto:info@ic-refractories.eu)**  
**[www.ic-refractories.eu](http://www.ic-refractories.eu)**

## Opening Session

### **PROGRAMME**

subject to modifications

**Wednesday 25<sup>th</sup>, 2019**  
**EUROPA SAAL**

#### **Opening Session**

- 10:00**    **Thomas Seger**  
RHI Magnesita  
President Verband der Deutschen Feuerfest-  
Industrie e. V.  
Höhr-Grenzhausen, Germany
- Dr. Christian Dannert,**  
          **Andreas Hermann**  
          ECREF European Centre for Refractories gGmbH  
          Höhr-Grenzhausen, Germany

#### **Main Lectures**

- 10:05 -**  
**11.:45**    Speakers and titles to be announced later

Whatever the problem,  
the solution's right there



**The partner of**

- raw material industries
- producers
- users of refractories

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Rheinstrasse 58  
56203 Höhr-Grenzhausen  
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[info@difk.de](mailto:info@difk.de)

[www.difk.de](http://www.difk.de)

## Gustav-Eirich-Award

Wednesday 25<sup>th</sup>, 2019  
EUROPA SAAL

### Gustav-Eirich-Award

**12:00 - 12:05**

**Dipl.-Ing. Stephan Eirich**

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

Gustav-Eirich-Award

**Dr. Christian Dannert, Andreas Hermann**

ECREF European Centre for Refractories gGmbH  
Höhr-Grenzhausen, Germany

Introduction of the candidates

**12:05 - 13:00**

Presentations from the winners of the  
Gustav-Eirich-Award

**Dr. Christian Dannert, Andreas Hermann**

ECREF European Centre for Refractories gGmbH  
Höhr-Grenzhausen, Germany

Award ceremony

**13:00 - 14:00**      **Lunch**

## Programme

Wednesday 25<sup>th</sup>, 2019  
EUROPA SAAL

**Cokemaking  
Chairmen  
Blajs, M. / Brunk, F.**

**14:00 - 14:20**

**Wang, W.;** Liang, Y., Yin, Y., Jin, S., Nie, J.:

Effect of crystallization extent on fracture of fused silica bricks.

**14:20 - 14:40**

**Cappuzzo, S.;** Sanchetti, S., Brugnolo, G.:

A study on silica properties at high temperatures and the expansion behaviour linked with the amount of residual quartz.

**14:40 - 15:00**

**Ghosh, G.;** Mukherjee, A., Biswas, S., Panigrahi, P.:

Correlation of critical properties of different types of silica bricks for coke oven application.

**15:00 - 15:20**

**Tadaion, V.;** Tonnesen, T., Telle, R., Andreev, K., Zhu, Q., Wang, W., Yin, Y.:

Thermal and mechanical cyclic tests and fracture mechanics parameters as indicators of thermal shock resistance - case study of silica refractories.

**15:20 - 15:40**

**Yoo, D.-H.;** Jung, J.-I., Lee, S.-A., Lee, D.-S.:

Development of the large-scale modular cast block for maintaining coke oven furnace under thermal condition by making use of fused silica refractory.

**15:40 – 16:00**

**Break**



## Programme

Wednesday 25<sup>th</sup>, 2019  
BRÜSSEL SAAL

**Castables I  
Chairmen  
Myhre, B. / Wöhrmeyer, C.**

**14:00 - 14:20**

**Peng, H.;** Myhre, B.:

Drying behaviour and explosion resistance of refractory castables.

**14:20 - 14:40**

**Kasper, J.;** Koch, A., Krause, O., Dannert, C.:

Impact of Ca<sup>2+</sup> dissolution from CAC on the stability of matrix suspensions of deflocculated refractory castables: from mixing to the first setting.

**14:40 - 15:00**

**Gerz, A.;** Schmid, M., Mikanovic, I., Kaden, R., Walenta, G., Leber, T., Tonnesen, T., Telle, R.:

Improved calcium aluminate cement for different refractory applications.

**15:00 - 15:20**

**Kyrilis, E.;** Tonnesen, T., Telle, R.:

Monitoring the elastic properties of alumina-based monolithics exposed to steel slag and the effect of preformed spinel addition.

**15:20 - 15:40**

**Brochen, E.;** Dannert, C., Erbar, L., Krause, O., Abdelouhab, S.:

Influence of the particle shape on the thermomechanical properties of high alumina castables at service temperature.

**15:40 – 16:00**

**Break**

## Programme

Wednesday 25<sup>th</sup>, 2019  
EUROPA SAAL

Refractory maintenance  
Chairmen  
Poirier, J. / Tassot, P.

**16:00 - 16:20**

**Wöhrmeyer, C.;** Szepizdyn, M., Gao, J.:

How to improve the bonding between used steel ladle castable substrat and dry-gunning repair mix.

**16:20 - 16:40**

**Smirnov, O.;** Nemsadze, G., Sharandin, K., Dzhodzhua, R.:

The technology of hot repair of refractory lining converter using magnesium based materials:

**16:40 - 17:00**

**Lamm, R.:**

Gap and crack detection in refractory lining of hot steel-casting ladles.

**17:00 - 17:20**

**Witscher, M.;** Kollenberg, W.:

Failures in refractory linings - a preventable scenario.

**17:20 - 17:40**

**Zhang, M.;** Kannabiran, S.:

Self-healing castable repairs its own cracks.

**20:00 - 22:00 Reception at Krönungssaal Aachen**

## Programme

Wednesday 25<sup>th</sup>, 2019  
BRÜSSEL SAAL

Castables II  
Chairmen  
Buhr, A. / Krause, O.

**16:00 - 16:20**

**Erbar, L.;** Krause, O., Steffen, T., Brochen, E.,  
Dannert, C., Abdelouhab, S.:

Impact of cubic-shaped grain fractions on the explosion resistance of high-alumina castables.

**16:20 - 16:40**

**Leber, T.;** Etzold, S., Tonnesen, T., Telle, R.,  
Yembele, M.:

Mullite formation in sol-gel bonded high alumina castables: Microstructure and high temperature mechanical properties in comparison to cement bonding.

**16:40 - 17:00**

**Holley, F.;** Krause, O., Brochen, E., Dannert, C.,  
Podwórny, J.:

Microstructure evolution and enhanced sintering of high-alumina refractory castables with a smart matrix at service conditions.

**17:00 - 17:20**

**Klaus, S. ;** Buhr, A., Bauer, M., Göbbels, M.,  
Dutton, J.:

Formation of hexa-aluminate solid solution phases in spinel containing castables - mineralogical investigations in the system CaO-Al<sub>2</sub>O<sub>3</sub>-MgO.

**17:20 - 17:40**

**Podwórny, J.;** Psiuk, B., Suwak, R., Zwiazek, K.,  
Dudek, K., Krause, O., Holley, F., Brochen, E.,  
Dannert, C.:

Anomalous thermo-mechanical behaviour of sol-gel bonded alumina castables under cyclic heating and cooling conditions.

**20:00 - 22:00 Reception at Krönungssaal Aachen**

## Programme

Thursday 26<sup>th</sup>, 2019  
EUROPA SAAL

**Casting  
Chairmen  
Cölle, D. / Tonnesen, T.**

**09:20 - 09:40**

**Gerlach, N.;** Aneziris, C., Cölle, D., Willenweber, A., Radünz, R.:

Contribution to the optimization of MgO-based nanoparticle-reinforced dry mixes.

**09:40 - 10:00**

**Bock, B.;** Schmidt, A., Sniezek, E., Dudczig, S., Schmidt, G., Szczerba, J., Aneziris, C.:

Spinel forming systems (Fe-/Mg-/Mn-Al-O) as functional filter coatings for improved steel melt filtration.

**10:00 - 10:20**

**Schramm, A.;** Bock, B., Schmidt, A., Zienert, T., Ditze, A., Scharf, C., Aneziris, C.:

Investigation of interface reactions of differently coated carbon-bonded alumina filters with an AZ91 magnesium alloy melt.

**10:20 - 10:40**

**Malczyk, P.;** Weigelt, C., Dudczig, S., Sauke, S.-O., Semrau, H., Aneziris, C.:

Characterisation of corrosion behaviour of stainless steel/ceramic composites immersed in molten aluminium alloy.

**10:40 - 11:00**

**Schomborg, L.;** Bombeck, M. A., Jansen, M., Deinet, T., El Gammal, A.:

Thermomechanical erosion of ladle well fillers during steel production.

**11:00 – 11:20**

**Break**

## Programme

Thursday 26<sup>th</sup>, 2019  
BRÜSSEL SAAL

**Incineration  
Chairmen  
Imle, J. / Schönwelski, W.**

**09:40 - 10:00**

**Antonovic, V.;** Zdanevicius, P., Boris, R., Stonys, R., Witek, J.:

Investigation of alkali resistance of fireclay castable with silica sand additive.

**09:40 - 10:00**

**Poirier, J.:**

Corrosion of SiC refractories by molten salts: fundamental aspects and industrial applications (incineration and aluminium industry).

**10:00 - 10:20**

**Abdelouhab, S.;** Pilate, P.:

Relationship between SiC refractory materials characteristics used in municipal waste incinerators and oxidation behaviour at high temperature, investigation of material improvement.

**10:20 - 10:40**

**Angelkort, J.;** Fröse, N., Knoll, M., Epstein, B., Hofmann, I.:

Development of nitride-bonded refractory ceramics from a SiC-based, thixotropic NC castable.

**10:40 - 11:00**

**Nourbakhsh, A.;** Lotfian, N., Jahanshahi, R., Baghaei, A., Mohammadghasemi, H., Nouri, A.:

The effect of MgCr<sub>2</sub>O<sub>4</sub> nanostructure additive, synthesized by citrate-nitrate route on microstructure and mechanical properties of mag-chrome refractories.

**11:00 – 11:20**

**Break**

## Programme

Thursday 26<sup>th</sup>, 2019  
EUROPA SAAL

**Raw Materials  
Chairmen  
Möhmel, S. / Tanasic, N.**

**11:20 - 11:40**

**Mouija, M.;** Taha, Y., Hakkou, R., Hannache, H.:

Manufacturing of refractory brick products based on Moroccan raw materials and non-recyclable industrial wastes.

**11:40 - 12:00**

**Bach, M.;** Gehre, P., Aneziris, C.:

Recycling of carbon fibers in carbon bonded alumina refractories.

**12:00 - 12:20**

**Pereira, A. L.;** Sant`Anna, M. A., Nakachima, P. M., Ferreira, L. L. H. C.:

The effect of different types of alumina in high-purity calcium aluminate cement formulations.

**12:20 - 13:20      Lunch**

## Programme

Thursday 26<sup>th</sup>, 2019  
BRÜSSEL SAAL

**Testing and Simulation  
Chairmen  
Dannert, C. / Podwórny, J.**

**11:20 - 11:40**

**Leitold, C.;** Vollmann, S., Harmuth, H.:

Towards the prediction of refractory erosion by liquid slags and metal.

**11:40 - 12:00**

**Kehren, J.;** Hauke, K., Zimmer, S., Krause, O., Geisler, T.:

The formation of calcium silicates in the CaO-SiO<sub>2</sub> system studied in situ by hyperspectral Raman imaging.

**12:00 - 12:20**

**Zimmer, S.;** Krause O., Hauke, K., Geisler, T.:

In situ hyperspectral Raman imaging of the time-dependent mineral phase evolution in calcium aluminate cements (CAC) after the addition of water.

**12:20 - 13:20**

**Lunch**

## Programme

Thursday 26<sup>th</sup>, 2019  
EUROPA SAAL

**Boost innovation**  
**Chairman**  
**Dannert, C.**

13:20 - 15:00

**Boost innovation – Challenges to the industry and how to fix it**

**This session will introduce current trends in innovation and challenges to make innovation happen in the process industries.**

Participants will be provided with tools and insights on how to monitor and improve the innovation performance of their companies.

Building on results from the Horizon 2020 “HARMONI” project, special focus will be given to the role of standardization to boost innovation and the transfer of innovation between sectors of the process industry.



## Programme

Thursday 26th, 2019  
BRÜSSEL SAAL

**Firing technology**  
Chairman  
Simmat, R.

**Current trends and insights on firing and furnace technology from industry and the Horizon 2020 “DREAM” project**

**13:20 - 13:40**

**Celades López, I.:**

Emissions mitigation during the firing process of ceramic products.

**13:40 - 14:00**

**Montorsi, L.;** Milani, M., Venturelli, M.:

Analysis of the energy efficiency of an entire ceramic kiln using a numeric approach.

## Exhibitor

### LIST OF EXHIBITORS

**Almatis GmbH**

Lyoner Straße 9, 60528 Frankfurt am Main, Germany

**Alteo**

Route de Biver—B.P. 20062, 13541 Gardanne Cedex, France

**Bernd Münstermann GmbH & Co.KG**

Lengericher Straße 22, 48291 Telgte, Germany

**Calderys Deutschland GmbH**

In der Sohl 122, 56564 Neuwied, Germany

**Calucem GmbH**

Besselstraße 8, 68219 Mannheim, Germany

**Chemische Fabrik Budenheim KG**

Rheinstraße 27, 55257 Budenheim, Germany

**DIFK Deutsches Institut für Feuerfest und Keramik GmbH**

Rheinstraße 58, 56203 Höhr-Grenzhausen, Germany

**Elkem GmbH**

Oststraße 16, 46483 Wesel, Germany

**ESK-SIC GmbH**

Günter-Wiebke-Straße 1, 50226 Frechen, Germany

**German Kiln Technology GmbH**

An der Buschdorfer Burg 73, 53117 Bonn, Germany

**GIR-International, LLC**

49-B Kosmicheskaya Str..., Dnepr, Ukraine

**Hochschule Koblenz**

Rheinstraße 56, 56203 Höhr-Grenzhausen, Germany

**IMCE nv**

Slingerweg 52, Poort Genk 5489

3600 Genk, Belgium

**Institut f. Gesteinshüttenkunde der RWTH Aachen**

Mauerstraße 5, 52064 Aachen, Germany

**Laeis GmbH**

Am Scheerleck 7, 6868 Wecker, Luxembourg

**Maschinenfabrik Gustav EIRICH GmbH & Co. KG**

Walldürner Straße 50, 74736 Hardheim, Germany

**Nabaltec AG**

Alustraße 50 - 52, 92421 Schwandorf, Germany

**Orient Abrasives Ltd.**

Jeevan Udyog Bldg., D. N. Road, Fort, Mumbai, India

**Rütgers Germany GmbH**

Kekuléstraße 30, 44579 Castrop-Rauxel, Germany

## Exhibitor

**Saint-Gobain Ceramic Materials GmbH**

Concordiaplatz 3, 51143 Köln, Germany

**Simpex Hydraulik GmbH**

Siemensstraße 39, 07546 Gera, Germany

**Steuler - KCH GmbH**

Berggarten 1, 56427 Siershahn, Germany

**Thyme Hongkong Co. Limited**

RM C&D, 3/F, HOw Ming Fty Bldg., 99 How Ming St, Kwun  
Tong Kln, Hong Kong

**TU Bergakademie Freiberg**

Agricolastraße 17, 09599 Freiberg, Germany

**Uelzener Maschinen GmbH**

Stahlstraße 26 - 28, 65428 Rüsselsheim, Germany

**Velco GmbH**

Haberstraße 40, 42551 Velbert, Germany

**vhi GmbH**

Klingelswiese 2, 56626 Andernach, Germany

**Wassmer Spezialmaschinen GmbH**

Steinmattenstraße 5, 79423 Heitersheim, Germany

**Werner Mader GmbH**

Bullauer Straße 6, 64711 Erbach, Germany

**Zueblin Chimney & Refractory GmbH**

Arsterdamm 72 a, 28277 Bremen, Germany

## Poster

Sponsored by: Refractories worldforum, Göller Verlag GmbH and Steuler-KCH GmbH

- **Delobel, F.** ; Abdelouhab, S.:  
Review of standard test procedure for the gas and liquid permeability values determination.
- **Forys, D.** :  
Influence of various fluidifying admixtures on selected properties of low cement high alumina castables.
- **Henn, I.**; Sax, A., Quirnbach, P.:  
Interacting structural analysis methods for characterization of an innovative Si-O-C insulating ceramic.
- **Boubtane, S.**; Sax, A., Heumannskemper, D., Quirnbach, P.:  
Experimental and thermochemical consideration of combined corrosion reactions during copper production.
- **Seyedi Taji, M.**; Nourbakhsh, A., Lotfian, N., Mokhtarpour, I., Nezaminia, A., Ameri, E.:  
Investigation of process parameters and steel shell deformation on corrosion behavior of refractories in snorkel part of RH– unit in MSC.
- **Szczerba, J.**; Ludwig, M., Sniezek, E.:  
Influence of copper slags on the corrosion resistance of magnesia-chromite refractory material.
- **Szczerba, J.**; Sniezek, E., Ludwig, M.:  
Designing thermal shock resistance of magnesia-based refractories.



- **Sniezek, E.;** Ludwig, M., Szczerba, J.:  
Mullite-zirconia refractories from andalusite and sillimanite.

## NOTES



## CONDITIONS FOR PARTICIPATION AND ADVICES FOR THE COLLOQUIUM ON REFRACTORIES 2019

**Service:** Participation fee and services are valid as mentioned below.

The registration is binding after receipt of the registration form by ECREF.

### **The invoice is at the same time the confirmation of the registration.**

For **cancellations** made before August, 5<sup>th</sup>, 2019 (date of receipt) there will be charged a 30 % service fee. No refund will be possible for cancellation after August 6<sup>th</sup>, 2019.

If there are any other **questions** with respect to registration or changes of registration please contact the congress secretariat in Höhr-Grenzhausen directly. Tel: +49 2624 9433-131 (8.00 - 12.30 am)  
Fax: +49 2624 9433-135

You will receive your **colloquium documents** at the registration counter at EUROGRESS Aachen. The documents will not be mailed.

A **non-participant** can purchase vouchers at the registration counter for the lunches in the Eurogress and the reception at the "Krönungssaal", Aachen.

### **BANK ACCOUNT**

Please remit the invoice amount in Euro **after the receipt of the invoice**  
- all charges paid - to: ECREF gem. GmbH – Colloquium  
Commerzbank AG, Bonn  
**IBAN: DE 42 3804 0007 0127 7227 01**  
**SWIFT: COBADEFFXXX**

stating the name of participant, the number of registration and the invoice number.

All charges due to bank transfers have to be paid by the participant. It is requested that collective remittances should be accompanied by a name list.

If you register late you are kindly requested to present a copy of the paying-in slip for the registration fee when calling for the colloquium documents.

### **REGISTRATION FEES**

The registration is binding after receipt of the registration form by ECREF.

	<b>until 05.08.2019</b>	<b>from 06.08.2019</b>
Participants	EURO 410,00	EURO 460,00
Speakers/Chairperson	EURO 210,00	EURO 240,00
Students	EURO 85,00	EURO 85,00
VDFFI Members	EURO 380,00	EURO 430,00

Incl. value added tax (VAT)

The registration fee includes: lectures, colloquium documents, visit of the exhibition, lunches on September 25<sup>th</sup>, 2019 and September 26<sup>th</sup>, 2019, reception on September 25<sup>th</sup>, 2019 at Krönungssaal, Aachen, 6 softdrinks/coffee.



#### **REGISTRATION COUNTER**

It will be located in the entrance hall of the Eurogress Aachen.  
Opening times: Tuesday, September 24th, 17:00 - 19:00  
Wednesday, September 25th, 08:00 - 18:30  
Thursday, September 26th, 08:00 - 16:00

#### **LANGUAGE**

The colloquium language is **English**.

#### **ACCOMMODATION**

You can make your hotel reservation through the Aachen Tourist Office. We've set up a contingent there.

**Verkehrsverein Bad Aachen e.V.**,  
P.B. 20 07, 52022 Aachen, Germany  
Tel.:+49 241 18029-50/51 Fax:+49 241 18029-30  
www.aachen-tourist.de - info@aachen-tourist.de

Please book your hotel accommodation at the earliest convenience.

#### **RECEPTION**

All participants are welcome to join the **reception** at the **Krönungssaal in the town hall in Aachen, on September 25<sup>th</sup>, 2019** between **20:00 - 22:00 h.**

#### **EXHIBITION**

The exhibition can be visited during the colloquium.

#### **TRAFFIC CONNECTIONS**

The nearest international airports are Düsseldorf, Cologne/Bonn, Brussels and Amsterdam. The most direct connections between the a. m. airports are by train. Access to the EUROGRESS Aachen can be gained by buses number 3 A and 13 A.  
There is a parking garage for cars next to the Eurogress.

#### **LIABILITY**

ECREF only acts as an agent and does not bear any liability for loss, accident, damage or injury to persons or property irrespective of the cause. Guests will take part in the colloquium and all events at their own risks. For travel insurance it is advisable to contact your local travel agency. Verbal agreements will not be binding unless they are confirmed in writing. The decisive date in all cases is that on which incoming mail is stamped by ECREF. Sole place of jurisdiction is Montabaur.

#### **IMPORTANT INSTRUCTIONS FOR SPEAKERS**

- 1) The time for presentation and discussion will be kept within the limit of 20 min.
- 2) The lecture hall is equipped with a beamer. The screening of a film is not accepted.



This seminar will be held  
in German in 2019 and  
in English in 2020

**Date: June 27, 2019 in German language**

**Venue: ECREF gGmbH, Höhr-Grenzhausen, Germany**

**REACH – Einstufung, Kennzeichnung und  
Verpackung von Stoffen und Gemischen (CLP) -  
Arbeitsschutz**

- ◆ REACH abgeschlossen? - Kommt noch was?
- ◆ Sicherheitsdatenblatt - Lesen, verstehen und interpretieren
- ◆ Einstufung und Kennzeichnung von Feuerfesten Produkten
- ◆ Anhang VIII CLP-Verordnung - Meldepflicht an Giftinformationszentren
- ◆ Quarzfeinstaub
- ◆ Sicheres Arbeiten mit Hochtemperaturwollen (HTW)
- ◆ Einfaches Maßnahmenkonzept Gefahrstoffe (EMKG) - Systematische Beurteilung von Gefährdungen

**Referenten:**

Dr. Elke Steinle (Verband der Deutschen Feuerfest-Industrie e. V.),  
Dipl.-Geogr. Norbert Kluger (Berufsgenossenschaft der Bauwirtschaft,  
Berlin), Dipl.-Ing. (BA) Mert Vuraldi (Mineralmahlwerk Westerwald Horn  
GmbH & Co. KG, Siegen) Dr. Frank Lützenkirchen (Quarzwerke GmbH,  
Frechen), Dipl.-Ing. Annette Wilmes (Bundesanstalt für Arbeitsschutz und  
Arbeitsmedizin, Dortmund), Dipl.-Ing. Heinz Wimmer (Consultant Elsdorf)

**Teilnehmergebühr:** für Mitglieder des VDFFI e.V. € 390,-  
für Nichtmitglieder des VDFFI e. V. € 440,-

In der Gebühr enthalten sind Arbeitsunterlagen, Tagungsgetränke, Mittagessen und Abendprogramm. Die Unterbringungskosten sind nicht in der Teilnehmergebühr enthalten.

**Infos for all seminars:**

ECREF European Centre for Refractories gGmbH  
Rheinstraße 58  
56203 Höhr-Grenzhausen  
Tel.: 02624 9433-140 Mail: [info@ecref.eu](mailto:info@ecref.eu)  
Fax.: 02624 9433-135 [www.ecref.eu](http://www.ecref.eu)

This seminar will be held  
in English in 2019 and  
in German in 2020



**Date: September 3 - 5, 2019 in English language**

**Venue: ECREf gGmbH, Höhr-Grenzhausen, Germany**

## **REFRACTORIES -**

### **Key Technology and its Applications**

- ◆ Introduction to refractory science
- ◆ Material science II - basic materials
- ◆ Review of shaped acid products
- ◆ Material science - acid and neutral materials
- ◆ Review of shaped basic products
- ◆ Wear and corrosion of refractories
- ◆ Review of refractory light-weight and insulating materials
- ◆ Review of monolithic refractories
- ◆ Lining concepts and techniques of unshaped refractories
- ◆ Refractory applications for the glass industry
- ◆ Refractory applications for ironmaking
- ◆ Refractory applications for the foundry industry
- ◆ Refractory applications for the steel industry I
- ◆ Refractory applications for the steel industry II
- ◆ Refractory applications for the cement industry
- ◆ Refractory applications for thermal waste treatment and incineration plants

**Speakers:** Prof. Dr. Christos **Aneziris** (TU Bergakademie Freiberg), Dr. Fred **Brunk** (P-D refractories GmbH), Dipl.-Min. Daniel **Cölle** (EKW GmbH), Dr. Christian **Dannert** (Forschungsgemeinschaft Feuerfest e. V.), Dr. Vera **Finke** (Rath GmbH, Meißen), Dipl.-Ing. (FH) Johannes **Imle** (RefraConsult GmbH), Dr. Hans-Jürgen **Klischat** (Refratechnik Cement GmbH), Prof. Dr. Olaf **Krause** (Hochschule Koblenz), Dipl.-Ing. Jens **Pischke** (Salzgitter Flachstahl GmbH), Dr. Stefan **Postrach** (RHI Glas GmbH), Dipl.-Ing. Hans J. **Sauer** (Jünger+Gräter GmbH), Dr. Almuth **Sax** (Universität Koblenz-Landau), Dipl.-Min. Werner **Schönwelski** (Steuler KCH GmbH),

**Registration fee:** member of VDFFI e. V. € 950,-  
non-member of VDFFI e.V. € 1050,-

The fee includes working papers, drinks and lunches. Expenses for the accommodation are not included in the registration fee.

This seminar will be held  
in German only



**Date: November, 5.– 6, 2019 in German language**

**Venue: ECREF gGmbH, Höhr-Grenzhausen, Germany**

### **Prüfung und Bewertung von feuerfesten Rohstoffen und Erzeugnissen**

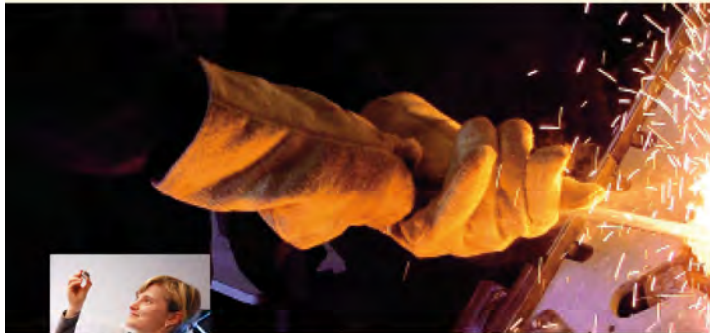
- ◆ Einführung in die Prüftechnik feuerfester Roh- und Werkstoffe
- ◆ Beton & Prüfvorbereitung
- ◆ Physik, Chemie
- ◆ Mineralogie, analytisch, z. B. RBA
- ◆ Mineralogie optisch, z. B. Mikroskopie
- ◆ Wärmeleitfähigkeit, u. a. Heißdraht, Kalorimetrie
- ◆ Hochtemperatur-Eigenschaften, u. a. DE, DFL,  
Strahlverschleiß
- ◆ Korrosion, Schmelz-, Schlacken- und Gaskorrosion

Praktische Vorführung der Prüfverfahren sowie Diskussion der  
Ergebnisse und ihre Bedeutung für die betriebliche Praxis.

**Teilnehmergebühr:** für Mitglieder des VDFFI e.V. € 660,-  
für Nichtmitglieder des VDFFI e. V. € 720,-

In der Gebühr enthalten sind Arbeitsunterlagen, Tagungsgetränke,  
Mittagessen und Abendprogramm. Die Unterbringungskosten sind  
in der Teilnahmegebühr nicht enthalten.

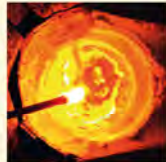
## Research and development for the refractory industry



**Forschungsgemeinschaft Feuerfest is a German research partner for the global refractory industry, enabling new refractory products and efficient production processes through joint Research and Innovation activities.**



Development is conducted in close and confidential co-operation. Forschungsgemeinschaft Feuerfest supports industrial R&I partners with expert know-how and technological expertise based on more than 45 years of experience.



Many research activities in the refractory industry can be supported by national or European funding. Forschungsgemeinschaft Feuerfest manages research projects, from the idea to successful industrial realisation.



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Feuerfest e.V.

Rheinstrasse 58  
56203 Höhr-Grenzhausen  
GERMANY

Partnered with:



[www.fg-feuerfest.de](http://www.fg-feuerfest.de)



### FORSCHUNGSSCHWERPUNKTE:

- Thermoschock- und korrosionsbeständige Keramiken für Hochtemperaturanwendungen in der Metallurgie, Zement-, Kalk-, Glasindustrie und Energietechnik
- Offenporöse Keramiken für Hochtemperaturanwendungen (Metallschmelzefilter, Dieselpartikelfilter)
- Alkalikorrosionsbeständige Wärmedämmstoffe
- Metall-Keramik-Verbundwerkstoffe für Hochtemperatur- und Verschleißanwendungen
- Gießformgebung von fein- und grobkörnigen keramischen Werkstoffen (inkl. Druckschlickergusstechnologie)

### DFG-Schwerpunktprogramm SPP 1418:

“Feuerfest-Initiative zur Reduzierung von Emissionen - FIRE” (<http://tu-freiberg.de/ze/fire/>)



### DFG-Sonderforschungsbereich SFB 920:

“Multifunktionale Filter für die Metallschmelzefiltration - ein Beitrag zu Zero Defect Materials“ (<http://tu-freiberg.de/ze/sfb920/>)



### INSTITUTSAUSSTATTUNG:

- **Analytik**  
Rasterelektronenmikroskopie mit EDX und EBSD, Röntgendiffraktometrie, Computertomographie
- **Thermische Analytik**  
DSC, DTA/TG, Dilatometrie, Erhitzungsmikroskopie
- **Prüftechnik**  
Wärmeleitfähigkeitsprüfer, Druckerweichen- und Druckfließenapparatur, E-Modul-Apparatur bis 1600°C, Heißbiegefestigkeitsprüfer, Rheometer
- **Kleintechnische Anlagen**  
Isostatische und hydraulische Pressen, Strangpressen, Ofentechnik, Druckschlickergussanlage, Flammsspritzanlage, Autoklaventechnik, Stahlgussimulator, Korrosionsprüfanlage

<http://www.ikgb.de>



## **MEDIA PARTNERS / DISPLAY TABLES**

### **DVS Media GmbH**

Aachener Straße 172, 40223 Düsseldorf, Germany

### **Institute of Refractories Engineers**

575 Trentham Road, Blurton, Stoke-On-Trent, ST3 3BN, UK

### **Industrial Minerals**

Nestor House, Playhouse Yard, London EC4V 5EX, UK

### **IMFORMED - Industrial Mineral Forums & Research**

2a The Quadrant, Upper High St., Epsom, Surrey, KT17 4RH, UK

### **International Cement Review**

Old Kings Head Court, 15 High Street, Dorking, UK

### **Refractories Windows**

Chuangxin Building, New & High-tech Development Zone, Tangshan City, Hebei Province, 063020, P. R. China

### **refractories WORLDFORUM**

ceramic forum international, Göller Verlag GmbH, Aschmattstraße 8, 76532 Baden-Baden, Germany

### **Springer Fachmedien Wiesbaden GmbH**

Abraham-Lincoln-Straße 46, 65189 Wiesbaden, Germany

### **Verlag Stahleisen**

Sohnstraße 65, 40042 Düsseldorf, Germany

### **Vulkan Verlag GmbH**

Friedrich-Ebert-Straße 55, 45127 Essen, Germany

## Organizer

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www.ghi.rwth-aachen.de  
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## BILDUNGS- UND FORSCHUNGSZENTRUM KERAMIK E.V.

Das BFZK ist mit seinen acht Institutionen, die auf den Gebieten der Forschung und Entwicklung, der Bildung und der Unternehmensgründung tätig sind, ein Dachverband keramischer Institute und mit dem ECREF-Feuerfestinstitut als Innovations- und Kompetenzzentrum für feuerfeste Erzeugnisse in seiner Konstellation europaweit einzigartig.

Durch den besonderen Verbund der keramischen Ausbildungsinstitute in Höhr-Grenzhausen profitieren Auszubildende, Schüler, Studenten und Berufstätige, da Ausbildungen mit den unterschiedlichsten Voraussetzungen begonnen und auch berufs begleitend absolviert werden können. Mit den aufeinander aufbauenden und durchgängigen Bildungsmöglichkeiten hat jeder die Chance eine fundierte Ausbildung bis zum hochwertigen Hochschulstudium (Bachelor- und Master of Engineering) innerhalb des BFZK absolvieren zu können. Die Universität Koblenz und die Hochschule Koblenz arbeiten bei dem kooperativen Masterstudiengang eng zusammen. Für Master-Absolventen besteht anschließend innerhalb von Forschungsvorhaben die Möglichkeit zur Promotion, auch in den benachbarten außeruniversitären Instituten. Beste Voraussetzungen für einen individuellen Bildungsweg und zukünftige, exzellente Karrierechancen!

### Bildungsmöglichkeiten im BFZK:

#### Hochschule Koblenz

Fachrichtung Werkstofftechnik Glas / Keramik  
www.hs-koblenz.de/keramik | Tel: 02624 - 9109-0



- Bachelor (B.E.) Werkstofftechnik Glas und Keramik
- Master (M.E.) Ceramic Science and Engineering

#### Staatliche Fachschule Keramik

www.fs-keramik.de | Tel.: 02624 - 9407-0



- Staatlich geprüfter Keramiker/techniker/in

Berufsbegleitende modulare Ausbildung möglich.  
z.B.: Modul »Feuerfest« mit den Themen: Beurteilen von feuerfesten Werkstoffen, Qualitätsprüfungen und Einsatzgebiete.

#### Berufsbildende Schule Montabaur

##### Außenstelle Keramik

www.bbs-montabaur.de | Tel: 02624 - 3306



- Aufbereitungsmechaniker/-in
- Industriekeramiker/-in Anlagentechnik
- Industriekeramiker/-in Verfahrenstechnik
- Stoffprüfer/-in

#### BFZK e.V.

Heinrich-Meister-Str. 2 | 56203 Höhr-Grenzhausen  
Tel: 026 24 - 18 60 | E-Mail: info@bfzk.de

[www.bfzk.de](http://www.bfzk.de)



# KERAMIK<sup>2</sup>

Duales Studium  
Werkstofftechnik Glas & Keramik  
am WesterWaldCampus

## Ihre Vorteile auf einen Blick!

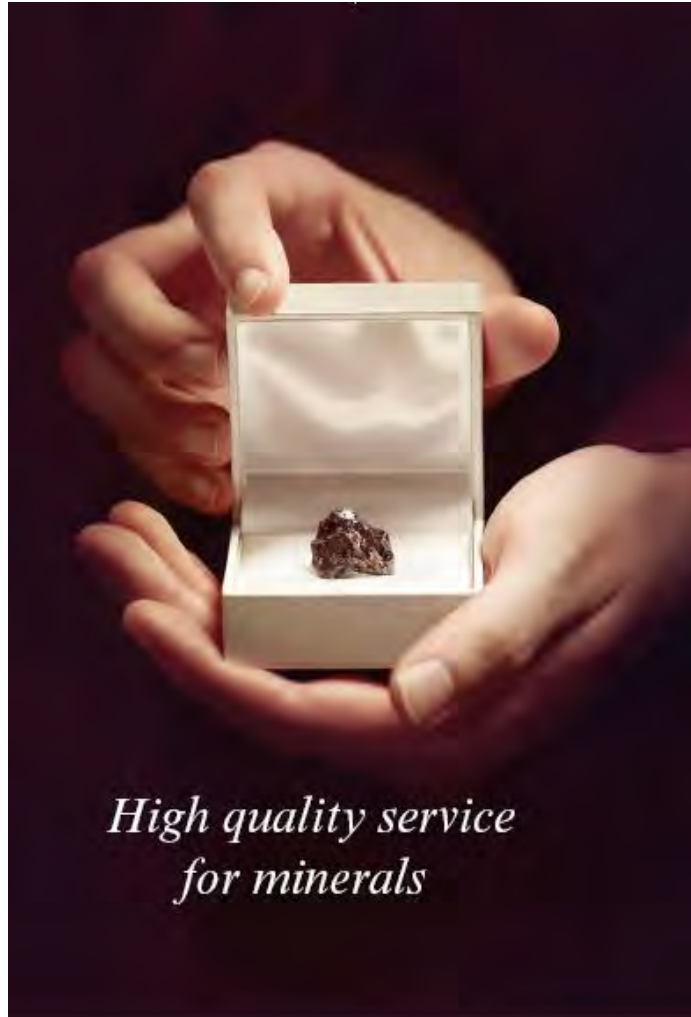
- ▶ **Positionierung als attraktiver Arbeitgeber**
- ▶ **Gezielte Fachkräfteausbildung nach Ihrem Bedarf**
- ▶ **Frühzeitige Bindung von Fachkräften an Ihr Unternehmen**
- ▶ **Am Puls der Zeit:**

Die Kooperationen mit unseren Partnerinstituten wie dem Forschungsinstitut Für Anorganische Werkstoffe Glas/Keramik GmbH, dem CeraTechCenter sowie dem European Centre for Refractories (ECREF) bieten Zugang zu aktuellen wissenschaftlichen Forschungsgebieten.



Weitere Infos unter  
[hs-koblenz.de/WGKDUAL](https://hs-koblenz.de/WGKDUAL)  
oder per Mail an [thomas@hs-koblenz.de](mailto:thomas@hs-koblenz.de)





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