5th International Postgraduates Seminar on Refractories
May 9-10, 2022 Online

Organized by:
• International Postgraduates Seminar Organization Committee

Supported by:
• The Programme of Introducing Talents of Discipline to Universities, Hubei Province, China
• Refractory Branch of the Hubei Ceramic Society
• The State Key Laboratory of Refractories and Metallurgy, China
• National-provincial Joint Engineering Research Center of High Temperature Materials and Lining Technology, China
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Jacek Szczerba  
AGH University of Science and Technology, Poland

*Rotating Chairperson of fifth seminar 2022*: Prof. Harald Harmuth

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Guotian Ye  
Zhengzhou University, China

Xudong Luo  
University of Science and Technology Liaoning, China

Juntong Huang  
Nanchang Hangkong University, China
### TIME SCHEDULE OF THE 5TH INTERNATIONAL POSTGRADUATES SEMINAR

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>University</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meeting website Day 1</strong>&lt;br&gt;Meeting website Day 1</td>
<td></td>
<td>Cisco Webex Meetings</td>
<td><a href="https://unileoben.webex.com/unileoben/j.php?MTID=m716b9368ed7750de61ee5542c261c72f">https://unileoben.webex.com/unileoben/j.php?MTID=m716b9368ed7750de61ee5542c261c72f</a></td>
</tr>
<tr>
<td><strong>Monday 9th, May, 2022</strong>&lt;br&gt;<strong>Session A 14:40-17:40 (GMT+8)</strong></td>
<td></td>
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<tr>
<td>14:40-14:50</td>
<td>Miriam Bach</td>
<td>TU Bergakademie Freiberg</td>
<td>14:40-14:50 Recycled carbon fiber composites as carbon source in refractories</td>
</tr>
<tr>
<td>14:50-15:10</td>
<td>Yichong Li</td>
<td>Wuhan University of Science and Technology</td>
<td>14:50-15:10 Aluminothermic slag from ferrotitanium production: a low-cost hibonite source in refractories</td>
</tr>
<tr>
<td>15:10-15:30</td>
<td>Yaning Bai</td>
<td>China University of Geosciences (Beijing)</td>
<td>15:10-15:30 Study on preparation and properties of high temperature resistant materials based on ceramic for waste building</td>
</tr>
<tr>
<td>15:30-15:50</td>
<td>Qingqing Gao</td>
<td>Anhui University of Technology</td>
<td>15:30-15:50 Preparation of high-performance fly ash-based porous structural ceramics by optimizing rheological behaviors of ceramic slurries</td>
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<td>15:50-16:10</td>
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<tr>
<td>16:10-16:20</td>
<td>Seungjo Baek</td>
<td>Seoul National University</td>
<td>16:10-16:20 Phase diagram study and thermodynamic assessment of the Y₂O₃-YF₃ system</td>
</tr>
<tr>
<td>16:20-16:40</td>
<td>Wang Xin</td>
<td>Henan Polytechnic University</td>
<td>16:20-16:40 Preparation of carbon nanotubes by Fe/Co/Ni bimetallic-catalyzed pyrolysis of phenolic resin</td>
</tr>
<tr>
<td>16:40-17:00</td>
<td>Shenghao Li</td>
<td>Wuhan University of Science and Technology</td>
<td>16:40-17:00 Interfacial behavior between refractories and molten slags in weak static magnetic field</td>
</tr>
<tr>
<td>17:00-17:20</td>
<td>Florian Kerber</td>
<td>TU Bergakademie Freiberg</td>
<td>17:00-17:20 Interactions of MgO-C refractory materials with Al-deoxidized steel</td>
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<td>17:20-17:40</td>
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<td>17:40-19:10</td>
<td>Yunhe Fu</td>
<td>Zhengzhou University</td>
<td>17:40-19:10 Anti-oxidant Si substitution by andalusite fine powder in Al₂O₃-SiC-C castables</td>
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<td>19:10-19:30</td>
<td>Wenjing Liu</td>
<td>Wuhan University of Science and Technology</td>
<td>19:10-19:30 In-depth investigation of pore structure and fracture behavior of CAC bonded alumina-spinel castables treated at 110 ~ 1600 °C</td>
</tr>
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<td>19:30-19:50</td>
<td>Mingyang Liu</td>
<td>Zhengzhou University</td>
<td>19:30-19:50 Effect of micro-sized calcium carbonate on the hydration rate and hydrates of CAC during curing at 20 °C</td>
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<td>19:50-20:10</td>
<td>Otavio Henrique Borges</td>
<td>Federal University of Sao Carlos</td>
<td>19:50-20:10 Zinc oxide as an inducer of spinel-like phase on alumina-based castables</td>
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<tr>
<td><strong>Break</strong></td>
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<tr>
<td><strong>Dinner</strong></td>
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<tr>
<td><strong>Monday 9th, May, 2022</strong>&lt;br&gt;<strong>Session B 19:10-20:30 (GMT+8)</strong></td>
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**Session A 14:40-17:40 (GMT+8)**

**Opening ceremony**
Rotating Chairperson of 2022: Prof. Harald Harmuth

Session Chair: Prof. Christos G. Aneziris, Technische Universitaet Bergakademie Freiberg, Germany

**Session Chair: Prof. Harald Harmuth, Montanuniversitaet Leoben, Austria**

**Session B 19:10-20:30 (GMT+8)**

Session Chair: Prof. In-Ho Jung, Seoul National University, South Korea

**Monday 9th, May, 2022**

**Session A 14:40-17:40 (GMT+8)**

**Session Chair: Prof. Christos G. Aneziris, Technische Universitaet Bergakademie Freiberg, Germany**

**Session Chair: Prof. Harald Harmuth, Montanuniversitaet Leoben, Austria**

**Session B 19:10-20:30 (GMT+8)**

**Session Chair: Prof. In-Ho Jung, Seoul National University, South Korea**
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<tr>
<td>15:00-15:20</td>
<td>Jiyuan Luo</td>
<td>Xi’an University of Architecture and Technology</td>
<td>Improved thermal shock resistance of low-carbon Al$_2$O$_3$-C refractories by CNTs/MgAl$_2$O$_4$ interphase layers between aggregate and matrix</td>
</tr>
<tr>
<td>15:20-15:40</td>
<td>Maximilian Klopf</td>
<td>Montanuniversitaet Leoben</td>
<td>Development of a testing setup for modified shear test at elevated temperatures under reducing conditions for carbon containing materials</td>
</tr>
<tr>
<td>15:40-16:00</td>
<td>Guangyao Chen</td>
<td>Shanghai University</td>
<td>BaZrO$_3$ refractory crucibles for vacuum induction melting of industrial Zr-based bulk metallic glass master alloys with Y addition</td>
</tr>
<tr>
<td>16:00-16:20</td>
<td>Yunling Jian</td>
<td>Xi’an University of Architecture &amp; Technology</td>
<td>MAX bonded corundum low carbon refractory fabricated by reactive melt infiltration with Al$<em>{50}$Si$</em>{50}$ alloy</td>
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<tr>
<td>16:20-16:30</td>
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<td>Break</td>
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</table>

**Tuesday 10th, May, 2022**

**Session C 15:00-17:50 (GMT+8)**

**Session Chair:** Prof. **Yawei Li**, Wuhan University of Science and Technology, China

**session Chair:** Prof. **Shengli Jin**, Montanuniversitaet Leoben, Austria

<table>
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<tr>
<td>16:30-16:50</td>
<td>Robert Świerszcz</td>
<td>Zakłady Magnetyzowe „Ropczyce” S.A., AGH University of Science and Technology</td>
<td>Optimization of the design of the tundish nozzle to minimize non-metallic inclusions in the steel</td>
</tr>
<tr>
<td>16:50-17:10</td>
<td>Jeong Min Cheon</td>
<td>Seoul National University</td>
<td>Thermodynamic modeling of the Al$_2$O$_3$-AlN system and the MgO-Al$_2$O$_3$-AlN system</td>
</tr>
<tr>
<td>17:10-17:30</td>
<td>Guohan Yu</td>
<td>University of Science and Technology Beijing</td>
<td>The optimization of the service environment of refractory in the reduction section of hydrogen-based direct reduction shaft furnace</td>
</tr>
<tr>
<td>17:30-17:50</td>
<td>Jeronimo Guarco</td>
<td>Montanuniversität Leoben</td>
<td>A modelling approach to dissolution of ceramic materials in liquid slags</td>
</tr>
<tr>
<td>17:50-19:20</td>
<td></td>
<td></td>
<td>Dinner</td>
</tr>
</tbody>
</table>

**Tuesday 10th, May, 2022**

**Session D 19:20-21:30 (GMT+8)**

**Session Chair:** Prof. **Pawel Stoch**, AGH University of Science and Technology, Poland

<table>
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<tr>
<td>19:20-19:40</td>
<td>Sebastian Sado</td>
<td>Zakłady Magnetyzowe „Ropczyce” S.A., AGH University of Science and Technology</td>
<td>Application of regression techniques for wear rate prediction of MgO-C refractories</td>
</tr>
<tr>
<td>19:40-20:00</td>
<td>Murilo Henrique Moreira</td>
<td>Federal University of Sao Carlos</td>
<td>Neutron tomography analysis of drying – proof of moisture clog and heating rate effects</td>
</tr>
<tr>
<td>20:00-20:20</td>
<td>Xingjun Duan</td>
<td>University of Science and Technology Beijing</td>
<td>Maximizing the mechanical performance of Ti$_3$AlC$_2$ based MAX phases with aid of machine learning</td>
</tr>
<tr>
<td>20:20-20:40</td>
<td>Luís Otávio Zaparoli Falsetti</td>
<td>Federal University of Sao Carlos</td>
<td>A deep dive into the fundamentals: how close are foamed slags to refractory macroporous ceramics?</td>
</tr>
<tr>
<td>20:40-21:30</td>
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<td><strong>Closing remarks</strong></td>
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</tbody>
</table>

**Rotating Chairperson of 2023:** Prof. Victor Carlos Pandolfelli
2018 CHINA-AUSTRIA POSTGRADUATES SEMINAR