International Workshop

Registry of secondary mineral resources for the production of low-carbon cement

February, 2021
Thank you for your interest to participate to the International workshop: “Registry of secondary mineral resources for the production of low-carbon cements” organized within the RIS ALiCE Project: “Al-rich industrial residues for mineral binders in ESEE region”. The project is supported by European Institute for Innovation and Technologies (EIT – Raw Materials).

The organization team have been working hard to make this event effective and practical for all participants from academia, industry, research and development institutions and others interested parties.

In participant booklet can be found important information for workshop organization. Please read it before the start of the workshop.

You are welcomed on 26th February, 2021!

RIS-ALiCE workshop organization team
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RIS ALiCE Project

European Union Commission promotes using natural resources more efficiently with the focus on the recycling. Currently, there is a significant amount of unused secondary raw materials which are mostly landfilled.

Huge amounts of various Al-rich residues (steel slag, red mud, ash, landfills of bauxite mines) with a low recycling rate or landfilled in RIS countries present a high secondary mineral resources potential. A promising way of recycling these waste mineral materials is the synthesis of sustainable mineral binders with high Al content, which can be further used as environmentally friendly construction material.

On the other hand, high Al content is the main pain point for the production of Al-rich mineral binders because of the high demand for bauxite, a valuable natural resource. In RIS-ALiCE, this challenge will be successfully overcome by the replacement of bauxite with Al-rich industrial and mining residues. Moreover, this approach will represent an innovative recycling case study for the ESEE region.

The main goal of RIS-ALiCE project is creation of a network of relevant stakeholders in the area of currently unused and landfilled Al-rich industrial residues and contribution to the increase of the innovation potential and competitiveness of the ESEE region. By interlinking local partners, valorising Al-rich residues for innovative mineral binder and creating an upgradeable online registry, we will help enhance sustainable mineral resource management in the ESEE region will be enhanced.

The main outcomes of RIS-ALiCE project are:

- establishes a long-term network between the producers/holders and the end-users of Al-rich industrial residues;
- valorises the Al-rich residues by the production of environmentally friendly high-Al mineral binder based on data from Slovenia, Hungary, and Bosnia and Herzegovina;
- transfers knowledge from Slovenia, Hungary, and Bosnia and Herzegovina to the whole ESEE region;
• implements the circular economy and zero-waste management for Al-rich industrial residues in the ESEE region.

The project will impact:

• **EU by encouraging circular economy** and thus enhancing the raw materials self-sufficiency;

• **EIT Raw Materials** through the **implementation and promotion of sustainable raw materials management**, introducing innovative raw materials recycling approaches to the ESEE region and by setting up and strengthening the networks connecting waste producers and mineral end-users;

• **RIS-ALiCE consortium by creating new business opportunities** with focus on advanced and sustainable solutions with a focus on Al-rich residues in an environmentally friendly way.

More information: [http://ris-alice.zag.si/about](http://ris-alice.zag.si/about)
Partners of RIS ALiCE Project

Academia:

Research organizations:

Industry:
International Registry Workshop

The topic of the workshop is the circular economy and sustainable management of secondary mineral raw materials for their use in the production of low-carbon cements, as well as strategies and solutions that can fast track decarbonisation in the cement industry.

Developed registry of Al-containing industrial and mining residues ([https://alice-registry.eu/](https://alice-registry.eu/)) with the data valuable for both, waste providers as waste users in Eastern-Southeastern Europe region will be introduced. The specially tailored registry to suit the needs of cement industry will provide data on the available and appropriate secondary resources for cement production which will contribute to the implementation of sustainable management of raw materials and circular economy. The registry will offer long-term “marketplace” of mineral residues for their potential use in cement production, and thus will serve as a matchmaking tool between the waste holders/ producers and cement plants. Later on registry can include other materials and be upscaled also to other regions of Europe and globally.

The International Registry workshop will be hosted at Ss. Cyril and Methodius University in Skopje (UKIM), Faculty of Technology and Metallurgy (FTM), Skopje, Republic of North Macedonia.

<table>
<thead>
<tr>
<th>Data</th>
<th>26\textsuperscript{th} February, 2021</th>
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<tbody>
<tr>
<td>Time</td>
<td>9.30-14.30 (CET)</td>
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<tr>
<td>Place</td>
<td>FTM-UKIM / online</td>
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Connection Links and attendance instruction

The main goal of this workshop is to promote ALiCE registry among participant and to engage participants in dynamic discussion.

Zoom Platform has been chosen for this online event. Instruction about Joining a Zoom Meeting can be found:

https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-meeting

The Zoom link for participation is:

Join Zoom Meeting: **RIS ALiCE Workshop 26.02.2021**

https://us02web.zoom.us/j/84182903475?pwd=TVhwYjBXZ2QvdFVDWkFFV1rck9NZz09

Meeting ID: 841 8290 3475

Passcode: 256570

**The zoom link will be available at 9 AM, please connect in advance.**

In order to have structured workshop we would appreciate if you keep in mind the following guidelines:

Please, test Zoom in advance.

Use your **Name** and **Surname**, so all participants can easily identified you.
Turn your **camera** on when you are asked from organizer and when you will **present** or **speak**.

Keep yourself **muted** when it is not your time to speak.

**Rice** your hand when you want to say something and wait the moderator to give you the right to speak.

Put your hand **down** when you already commented on what you want to say.

Use **chat** for comments or questions.
# Program of the International Registry Workshop

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Title of presentation</th>
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<tbody>
<tr>
<td>9.30-9.35</td>
<td>Prof. Emilija Fidanchevski</td>
<td>Workshop opening</td>
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<tr>
<td>9.35-10.15</td>
<td>Prof. Karen Scrivener</td>
<td>Plenary Lecture</td>
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<tr>
<td>10.15-10.45</td>
<td>Mr. Nikos Nikolakakos</td>
<td>Co-processing developments &amp; the European circular economy</td>
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<td>10.45-11.15</td>
<td>Mr. Robert McQuillan</td>
<td>Alternative raw materials in LafargeHolcim Europe</td>
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<td>11.15-11.30</td>
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<td>Coffee break</td>
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<tr>
<td>11.30-11.40</td>
<td>Dr. Sabina Dolenec</td>
<td>RIS ALiCE Project presentation</td>
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<td>11.40-12.20</td>
<td>Dr. Gorazd Žibret</td>
<td>ALiCE Registry presentation</td>
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<td>12.20-12.30</td>
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<td>Coffee break</td>
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<tr>
<td>12.30-13.00</td>
<td>Mr. Stèphane Pepin</td>
<td>Reuse and recycling of NORM into construction materials: a regulatory perspective</td>
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<tr>
<td>13.00-13.30</td>
<td>Prof. Konstantin Kovler</td>
<td>Natural radioactivity of building products containing industrial residues</td>
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<tr>
<td>13.30-14.00</td>
<td>Dr. Efthymios Balomenos</td>
<td>Bauxite Residue Management Practice and vision at Mytilineos Metallurgy</td>
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<td>14.00-14.30</td>
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<td>Discussion</td>
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<td>14.30</td>
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<td>Workshop closing</td>
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List of Invited Speakers

Keynote 1: Plenary Lecture

Prof. Karen Scrivener

Institution: EPFL - Swiss Federal Institute of Technology Lausanne, Switzerland

Background: More than 40 years research on cement and concrete with materials Science approach! Now focussed on sustainability: LC3 – blended cement with limestone and calcined clay: CO₂ up to 40% lower. Former editor in Chief of Cement and Concrete Research. Founder of Nanocem research network.
Keynote 2: Co-processing developments & the European Circular Economy

Mr. Nikos Nikolakakos

Institution: CEMBUREAU - The European Cement Association, Belgium

Background: Working in CEMBUREAU since 2017, dealing with the topics of alternative fuels and materials use by the European cement industry, the environmental legislation & emissions to air and the biodiversity conservation.
Keynote 3: Alternative Raw Materials in LafargeHolcim-Geocycle

Mr. Robert McQuillan

Institution: LafargeHolcim-Geocycle, France

Background: He works as Business Development Manager and has 23 years’ experience in developing circular economy projects, Alternative Fuels and Alternative Raw Materials (ARM) for the Cement Industry. He has held both operational and functional roles in Europe and Africa.

Current role in corporate team leading development of ARM and CO₂ reduction initiatives. He is originally from Aberdeen, Scotland, but he is based in Lyon, France.
Keynote 4: RIS ALiCE Project Presentation

Dr. Sabina Dolenec

Institution: ZAG- Slovenian National Building and Civil Engineering Institute, Slovenia

Background: Researcher at Laboratory for cements, mortars and ceramics, 15 years of experience in the field of mineral and microstructural characterization of materials (cements and other mineral binders, mortars, secondary raw materials).
Keynote 5: AliCE Registry Presentation

Dr. Gorazd Žibret

Institution: GeoZS – Geological Survey of Slovenia, Slovenia

Background: Dr. Gorazd Žibret is senior researcher, with 18 years of experiences in conducting basic and applied geochemical research and research for minerals sector.
Keynote 6: Reuse and Recycling of NORM into Construction materials: a regulatory perspective

Mr. Stéphane Pepin

Institution: Federal Agency for Nuclear Control Section “Surveillance of the Territory and Natural Radiation”, Belgium

Keynote 7: Natural radioactivity of building products containing industrial residues

Prof. Konstantin Kovler

Institution: Technion – Israel Institute of Technology, Israel

Background: Building materials, performance and technologies; sustainability and durability; recycling of industrial by-products in construction; protection of public from ionizing radiation and radon mitigation.
Keynote 8: Bauxite Residue Management Practice and vision at Mytilineos Metallurgy

Dr. Efthymios Balomenos

Institution: Research and Sustainable Development, MYTILINEOS – Metallurgy BU, Greece

Background: Metallurgist with a PhD in Thermodynamics. More than 10 years of experience in Bauxite Residue reuse research.
Organization team:

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<tr>
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<tr>
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<td>GeoZS – Geological Survey of Slovenia, Slovenia</td>
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<tr>
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<th>Katerina Šter</th>
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<td><a href="mailto:katarina.ster@zag.si">katarina.ster@zag.si</a></td>
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Supported by

RawMaterials
Connecting matters

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