European Training Network for Zero-waste Valorisation of Bauxite Residue (Red Mud)

Fact Sheet

Project Information

REDMUD

Grant agreement ID: 636876

Funded under H2020-EU.1.3.1.

Project website [link]

Overall budget € 3 720 893,40

Start date 1 December 2014

End date 31 October 2019

EU contribution € 3 720 893,40

Coordinated by KATHOLIEKE UNIVERSITEIT LEUVEN Belgium

Objective

To tackle its (critical) raw material dependency, Europe needs comprehensive strategies based on sustainable primary mining, substitution and recycling. Freshly produced flows and stocks of landfilled industrial residues such as mine tailings, non-ferrous slag and bauxite residue (BR) can provide major amounts of critical metals and, concurrently, minerals for low-carbon building materials. The European Training Network for Zero-Waste Valorisation of Bauxite Residue (REDMUD) therefore targets the vast streams of new and stockpiled BR in the EU-28. BR contains several critical metals, is associated with a substantial management cost, whereas spills have led to major environmental incidents, including the Ajka disaster in Hungary. To date, zero-waste valorisation of BR is not occurring yet. The creation of a zero-waste BR valorisation industry in Europe urgently requires skilled scientists and engineers, who can tackle the barriers to develop fully closed-loop environmentally-friendly recovery flow sheets. REDMUD trains 15 researchers in the S/T of bauxite residue.
recovery flow sheets. REDMUD trains 15 researchers in the S/T of bauxite residue valorisation, with emphasis on the recovery of Fe, Al, Ti and rare earths (incl. Sc) while valorising the residuals into building materials. An intersectoral and interdisciplinary collaboration of EU-leading institutes and scientists has been established, which covers the full value chain, from BR to recovered metals and new building materials. Research challenges include the development of efficient extraction of Fe, Al, Ti and rare earths (incl. Sc) from distinct (NORM classified) BRs and the preparation of new building materials with higher than usual Fe content. By training the researchers in pyro-, hydro- and ionometallurgy, electrolysis, rare-earth extraction and separation technology, inorganic polymer and cement chemistry, Life Cycle Assessment (LCA), NORM aspects and characterisation, they become the much needed scientists and engineers for the growing European critical raw materials industry.

Field of science
/engineering and technology/environmental engineering/waste management/recycling
/natural sciences/chemical sciences/electrochemistry/electrolysis
/natural sciences/chemical sciences/inorganic chemistry/metals

Programme(s)

Topic(s)

Call for proposal

H2020-MSCA-ITN-2014

Funding Scheme

MSCA-ITN-ETN - European Training Networks

Coordinator

KATHOLIEKE UNIVERSITEIT LEUVEN

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Oude Markt 13
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Activity type
Higher or Secondary Education Establishments

EU contribution
€ 1 002 240

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<table>
<thead>
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<th>Organisation</th>
<th>EU Contribution</th>
<th>Address</th>
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<td>TARTU ULIKOOL</td>
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<td>Dennewartstrasse 25 52068 Aachen</td>
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<td>TITAN CEMENT COMPANY AE</td>
<td>€ 242 386,92</td>
<td>Halkidos Street 22A 111 43 Athina</td>
<td>Private for-profit entities (excluding Higher or Secondary Education)</td>
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<td>Partners (4)</td>
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