

Upgrading Mining Water Streams to Valuable Nano-Structured Magnesium Hydroxide

Timeline: 03/25 - 04/25
Budget: €5,200

Startup



- Name: Accelerated Materials
- Founded: 2020
- Tagline: Nanomaterial synthesis
- Location: Cambridge, UK

Industry partner



- Name: K+S AG
- Founded: 10/1889
- Tagline: Salt, potash & magnesium producer
- Headquarter: Kassel, Germany

The problem

Salty mining water, or more precisely, aqueous magnesium chloride (MgCl_2), is a costly by-product of K+S's production processes. The management of this sidestream is a relevant cost position and environmental concern. Since years, attempts to derive valuable products from the water and reduce its volume, were not promising.

The solution

Accelerated Materials' advanced shearing reactor technology enables the synthesis of nanomaterials. The aqueous magnesium chloride stream of K+S could be used for the synthesis of magnesium hydroxide, a valuable product with applications in different sectors, such as flame retardant additives or acidity regulators.

Project deliverables

- Feasibility Study on chemical reaction, preparation and refining of test methods
- 100 g of magnesium hydroxide slurry in water, meeting K+S' specifications
- Report on the synthesis & technoeconomic analysis for a volume of 1 kg/day



Accelerated materials

Kelvin Yeo
Director of Business Development
kelvin.yeo@acceleratedmaterials.com



RootCamp GmbH

Mario Verbeek
Startup & Innovation Manager
mario@root.camp



K+S

Jan David Griesche
Product & Technology Scouting
(Non-Agri)
jandavid.griesche@k-plus-s.com

