



Lithium-Bioleaching

Europe's Green Deal largely depends on lithium imports, but there are environmental concerns against mining in Europe. What if there would be a green, environmentally-friendly 'bio-mining' alternative for Europe?

BACKGROUND

Lithium is the 25th most abundant element of earth's crust and currently in increasingly high demand with prices rising sharply. It's well known as a key ingredient in Li-Ion batteries, but is also used for lubricating greases, pharmaceutical purposes, chemical processes, ceramics and glass manufacturing, in air purification, optics, metallurgy and even as a colorant in pyrotechnics. The three largest lithium producers in the world i.e. Australia, Chile, China have a share of approx. 90% leaving Europe dependent on imports. However, several deposits have been discovered in Europe e.g. Austria, Germany, Finland, Portugal, Serbia, Spain, but with the exemption of a small mine in Portugal, they have not been developed yet, largely due to environmental concern and fierce local protests again because of potential environmental damages. There is the need for more environmentally-friendly mining.

TECHNOLOGY

acib has a long history on successful bioleaching projects i.e. the use of microorganisms for the extraction of valuable metals from ores or waste. For copper approx. 20% of the world production is already extracted by bioleaching, but for lithium there is a lot of untapped potential, although it was already shown that bioleaching can be applied to extract lithium from several lithium-bearing ores such as spodumene and lepidolite. acib is already working with the COMET-center K1-MET on bioleaching of lithium from spent Li-Ion battery active material, further developing microorganisms for the process, but also going beyond that by exploiting metal-binding peptides and other bio-based technologies suited for that purpose. We have thereby laid the foundation for an environmentally-friendly bio-mining process for lithium and other metals!

OFFER

acib is looking for companies and/or investors to further develop our lithium-bioleaching. IP developed in such projects will be fully transferred to you as our investor/industrial partner.

acib-EXPERTS:

Prof. Dr. Georg Gübitz
Dr. Klemens Kremser
Dr. Doris Ribitsch

DEVELOPMENT STATUS:

TRL 3 (Experimental proof-of-concept)

IPR:

New IP can be generated and transferred to YOU as our project partner

KEYWORDS:

Bioleaching, Bio-Mining, Lithium, Microorganisms, Bio-Acidification, Environment

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