Partners

TU BERGAKADEMIE FREIBERG

G.E.O.S.

SAXONIA Standortentwicklungs- und -verwaltungsgesellschaft mbH

AKW Equipment + Process Design

Contact

Philipp Büttner
Helmholtz Institute Freiberg
for Resource Technology at the
Helmholtz-Zentrum Dresden-Rossendorf
Phone +49 351 260 4417
p.buettner@hzdr.de

Address
Halsbrücker Straße 34
09599 Freiberg, Germany

www.hzdr.de/remining

Updated: February 2014

Strategic Raw Materials from Mining Residues

RESOURCES . RESEARCH . TECHNOLOGIES

Helmholtz Institute Freiberg for Resource Technology

HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

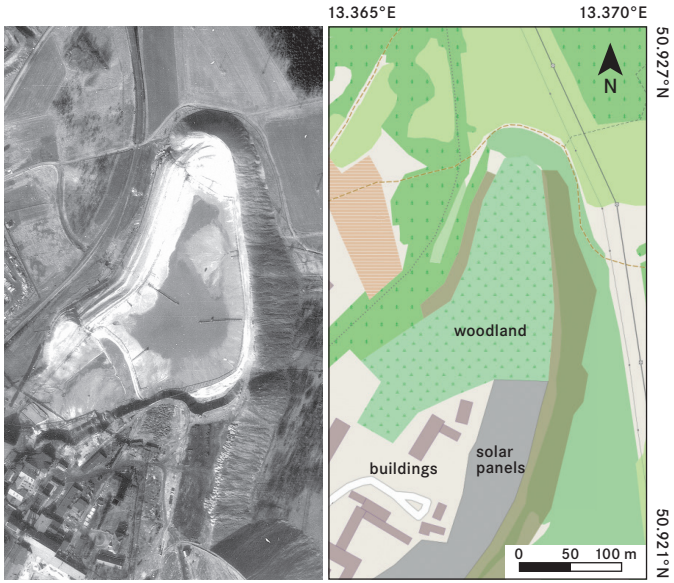
TU BERGAKADEMIE FREIBERG

BACKGROUND

"Remining"

Old tailing dams are an important potential source of raw materials. They still harbor large amounts of valuable resources - it is just that, in the past, the technologies available to extract these resources were inefficient or the resources we now seek simply were not of interest then. Tailing dams in Saxony, Central Germany, are among those that hold tremendous potential - what that potential is specifically is the subject of research being done at the Helmholtz Institute Freiberg for Resource Technology (HIF) and its partners. Its focus is on tailings that originated by processing complex ores containing metals such as tin, zinc, silver, or wolfram, and associated elements like lithium or indium, which today are of particular importance for high tech applications.

Tailing dams are so much more than simply a remnant of a former source of raw materials. By mining the tailings, or, in effect, "remining" them, the dams' inherent potential can be tapped.



Old tailing dams like the Davidschacht in Freiberg, Central Germany, harbor high concentrations of valuable raw materials (left side © SAXONIA Standortentwicklungs- und -verwaltungsgesellschaft mbH, 1967; right side © OpenStreetMap, 2014).

THE GOAL

Economical and Environmentally-Friendly

Experts are looking into how the valuable resources found in old tailing dams may be extracted in an economical and environmentally-friendly way. This would also help minimize the environmental risk inherent in the tailings, which contain high amounts of heavy metals. We are trying to answer the question whether it is possible to efficiently mine, concentrate, and metallurgically process these raw materials. Researchers are currently testing different kinds of technologies for this purpose. The ultimate goal is to come up with a reference method for extracting strategically important raw materials from residues of historic mining and beneficiation industries.

In addition, researchers are compiling data on Saxony's top 20 largest tailing dams - including geographic location, ownership details, structure, resource content, the dams' value-added potential, as well as the origin of the materials found within them - and entering all that information into a database. They also record information about potential technologies to use for mining and processing raw materials, and on their associated costs.

Our Strengths

// We are conducting interdisciplinary research, combining different technologies in order to reach a high level of profitability and environmental friendliness during the planned mining of residues of mining and beneficiation. This allows us to tap new fields of technology for use in raw materials extraction and beneficiation from secondary sources.

// We are working closely with our network of partners from science, research, and industry. Because of this, we have a wide range of laboratory and commercial grade methods and technologies available for resource analysis and beneficiation.

// Our goal is the transfer of our findings to other types of mining residues.

Interested in working with us? Get in touch!