

The MiCCuR project (Microbial consortia for enhanced copper recovery) is a cooperation between international research groups and companies from Sweden, Germany, South Africa, and Chile. This project will contribute to the EU's Raw Materials Initiative and European Innovation Partnership strategies on raw materials by investigating bioleaching of chalcopyrite and improving its efficiency.

For more than two decades, a part of the world's copper production has been gained through bioleaching of copper sulfides in heaps. It is catalyzed by acidophilic microorganisms oxidizing iron and/ or sulfur. However, bioleaching of primary sulfides such as chalcopyrite has remained problematic.

Within this project, two laboratory-scale, proof-of-concept experiments will be scaled up to a pilot heap including steps of investigating stirred tank and column reactors. The consortium will cover the process in terms of innovation and research and will comprehensively study engineering, chemistry, and microbiology, e.g. by using molecular biological and 'omics' methods.

Stay tuned and meet the members of the MiCCuR project for more detailed insights in our work. The summer school is organized by the MiCCuR team. We are looking forward to welcome you to the beautiful and historical city Freiberg.



MiCCuR Project partners and funding bodies



TECHNISCHE UNIVERSITÄT
BERGAKADEMIE FREIBERG
Die Ressourcenuniversität. Seit 1765.



Bioleaching summer school

at Technische Universität Bergakademie Freiberg

July 4th to 6th, 2022



Freiberg Castle, © Foto TU Bergakademie Freiberg

The summer school will target MSc and PhD students. You will experience a lecture-based summer school involving interactive teaching and workshops. It will take place in physical presence, but joining online is also possible.

The topics range from bioleaching microorganisms and different leaching processes to the recycling of electronic as well as industrial wastes and the recovery of metals from leaching solutions.

Register now, indicating whether you want to participate in physical presence or online:

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There is no registration fee!

Venue: Krüger-Haus, Schlossplatz 3, 09599 Freiberg, Germany



Program: (o = online)

Monday, July 4th, 2022

7:45	Social program	Visit of silver mine for 10 registered people max
10:30 - 10:45	Mark Dopson	Welcome
10:45 - 11:00	Michael Schlömann	Organizational issues
11:00 - 12:30	Alvaro Videla	Overview: Biomining in the context of metal mining, mineralogy and metallurgy
12:30 - 13:45	Lunch	
14:00 - 15:30	Gero Frisch	Aspects of solution chemistry and redox conditions for bioleaching
15:30 - 16:00	Coffee break	
16:00 - 17:30	Sue Harrison	Overview over bioleaching processes: heaps, tanks, in situ
17:30 - 19:00		Poster session

Tuesday, July 5th

09:00 - 10:30	Thanos Kotsiopoulos	Modelling of bioleaching processes
10:30 - 11:00	Coffee break	
11:00 - 12:30	Mark Dopson	Acidophilic microorganisms and their role in iron and sulfur oxidation
12:30 - 13:45	Lunch	
14:00 - 14:45	Barrie Johnson (o)	Acidophiles: physiologies and isolation/cultivation protocols

14:45 - 15:30	Ansgar Poetsch (o)	Use of proteomics to understand acidophile physiology
15:30 - 16:00	Coffee break	
16:00 - 16:45	Mario Vera (o)	Attachment to minerals and biofilm formation
16:45 - 17:30	Mark Dopson	Adaptation to low pH and high metal(loid) concentrations
17:30 - 18:30	Poster session	
19:00 - 23:00		Get together at old silver mine "Alte Elisabeth"

Wednesday July 6th

09:00 - 09:45	Gloria Levicán	Responses to oxidative, osmotic and chloride stress
09:45 - 10:30	Michael Schlömann	Bioleaching in presence of chloride
10:30 - 11:00	Coffee break	
11:00 - 11:45	Sabrina Hedrich	Chalcopyrite bioleaching - challenges and solutions
11:45 - 12:30	Axel Schippers (o)	Reductive Leaching
12:30 - 13:15	Lunch	
13:30 - 14:00	Jana Pinka	Winning metals from the aqueous phase
14:00 - 14:45	Sabrina Hedrich	Bioleaching of valuable elements from industrial wastes (slags, ashes, tailings, dusts)
14:45 - 15:00	Coffee break	
15:00 - 15:45	Agathe Hubau	Bioleaching of electronic waste
15:45 - 16:00	Mark Dopson	Poster awards, closing remarks

Social program:

Visit the silver mine Himmelfahrt Fundgrube

The Ore Mountain mining region is a UNESCO world heritage site. Mining in Freiberg dates back to the 12th century. First, silver was mined around Freiberg, counting as the world's biggest producer from the 14th until 16th century. Later tin, iron, lead, copper, mercury, cobalt, anthracite, and uranium were extracted throughout the history of the Ore Mountain region, being a driving force for the economical and industrial development of Saxony. Mining activities ended in the 20th century. Nowadays the Mine Himmelfahrt Fundgrube belongs to the University and is used for research purposes and student training. In the past, the mine was about 700 m deep, today visitors can go down to 230 m depth. Before starting the summer school, a limited amount of people are invited to visit the mine entering through the colliery named Alte Elisabeth.



Alte Elisabeth, © Foto TU Bergakademie Freiberg

Register now with your name and affiliation to following email address:

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