

Workshop Report for the REASONING Project

Location: mine and flotation “ Rudnik” doo. Mise Mihajlovica 2, 32313 Rudnik

Date: July 11th 2024

Student workshop

A student workshop was held on the premises of "Rudnik" doo on July 11th, 2024 near Mt Rudnik. The event was not only attended by mining and geology students of University of Belgrade, but Rudnik employees and REASONING-project participants as well.

The goal was to provide students with practical experience in the research and processing of mineral raw materials, as well as to familiarize them with current projects and technologies in the industry. Specific attention was paid to the research conducted within the scope of the REASONING, to familiarize the students with the methods and approaches the project applied. Through practical activities and discussions, students delved into both the challenges and opportunities of geological research, ore processing, methodologies to test mining tailings, as well as the importance of taking a multidisciplinary approach in exploring issues related to mining.

Detailed Itinerary

- 7:00 – 9:00: Travel from Belgrade to Rudnik
- 9:00 - 9:30: Mining-flotation tour and briefing
- 9:30 - 11:00: Hand-on experience and demonstration of drilling methods, sampling and measures
- 11:00 - 12:00: Pre-lecture discussion
- 12:00 - 14:00: Lectures
 - o Project Head, Prof. Dr. Vladimir Simić – Overview of REASONING
 - o Project-participant, Stefan Petrović – the Geology and Metallogeny of Rudnik’s Deposits
 - o Goran Umeljić, Head of Rudnik Geological Services - Research Methodology into Rudnik’s Deposits
 - o "Rudnik" Mining Engineer, Nikola Mirković - Exploitation of Rudnik’s Deposits
- 14:00 – 15:00: Post-lecture discussion, questions and answers
- 15:00: Lunch and return to Belgrade

The workshop afforded the students the opportunity to receive first-hand education and experience with the operations of the flotation plant used in processing polymetallic ores (lead, zinc, copper and silver) sourced from Rudnik’s deposits. They visited the flotation tailings facility, where they were presented how tailings disposal functions. During the second half of the workshop, a tour was given of the exploratory drilling rig, which covered the manner and

methodology in which samples were taken for the REASONING project. In line with safety regulations, the tour of the tailings site was carried out following all protection measures.

Lectures were held in four separate sections:

- Vladimir Simić presented the objectives and relevance of REASONING, specifically highlighting the Project's role in improving mining-tailing research in Serbia.
- Stefan Petrović lectured on the deposits' metallogenetic position in SE Europe and Serbia. He also addressed the geological processes leading to the deposits' formation, as well as its geological structure. He pointed out the main mineralogical polymetallic ore characteristics in relation to their importance in processing.
- Goran Umeljić presented on the deposits' main goals and research methodology, referring to geological research activities and focusing on specifics from the research results over the last decade.
- Nikola Mirković reviewed the testing and exploitation methods applied to the deposits, pointing out their effectiveness and giving a brief overview of active mining excavations.

Following the lecture, the floor was opened to all workshop participants to share their own experiences and ask their own questions about the implementation of the REASONING Project to facilitate further discussion and interest into such research.

Conclusion

The workshop provided students with practical experience and significant education on the processes undertaken within mining operations, including geological research, exploitation methods, ore-processing technology as well as mine-waste disposal. The goals of the REASONING project were highlighted to showcase the importance of research into mining waste and its potential repurposing. Moreover, potential sustainable practices necessary for the mining industry were presented, underscoring the importance of proper resource management and environmental preservation. Through practical activities, students were given the opportunity to learn firsthand how these theoretical foundations are applied in practice.