



Faculty of Geoengineering,  
Mining and Geology



Wrocław University  
of Science and Technology

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DEAR GUESTS  
**WELCOME!**

26th September 2022

# GENERAL INFORMATION

about the campus of Wrocław University of Science and Technology (WUST) and the Faculty of Geoengineering, Mining and Geology.



# Wrocław University of Science and Technology

The University is using its current name since 1945. It was established and organised by scientists from Lviv and Warsaw. Since the very beginning of its existence, it has been an important centre of technical education.

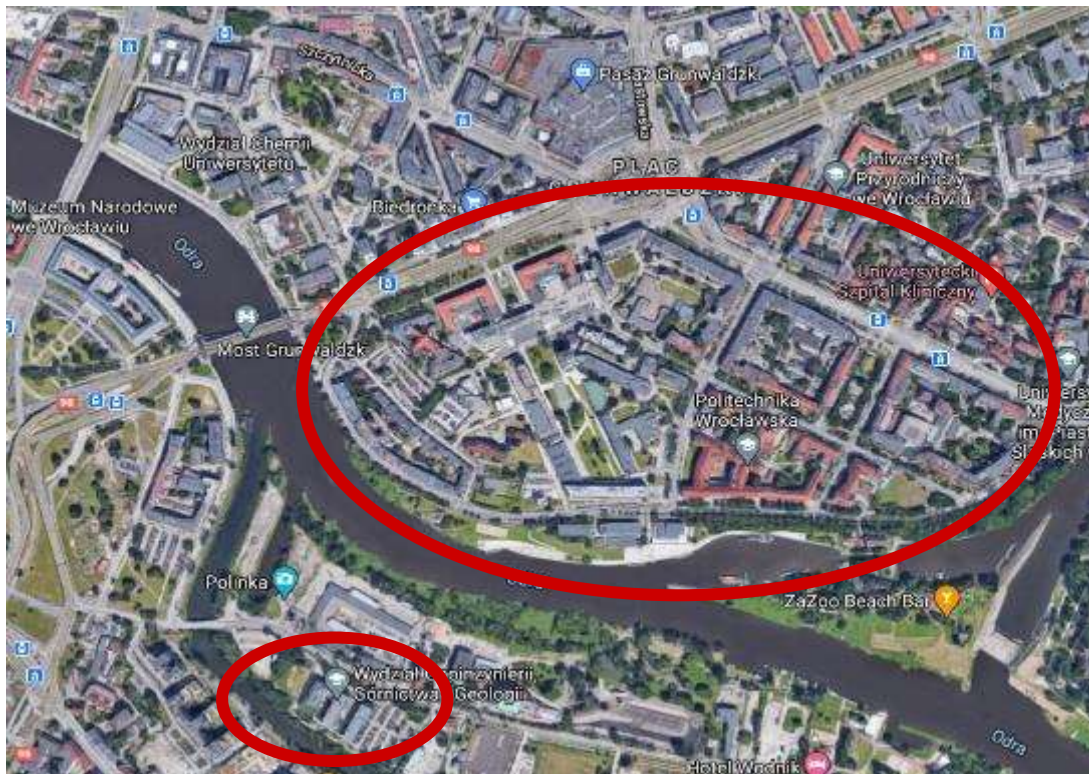


Wrocław  
University  
of Science  
and Technology



Today it is one the best technical universities in Poland:

24 984 students study here under the guidance of over 2 100 academic teachers, at 13 Faculties in Wrocław and 3 branches in Jelenia Góra, Legnica, Wałbrzych





Faculty of Geoengineering,  
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# Discover our Faculty

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- The Faculty was established in 1968
  - In February 2013 we moved to the new Geocentrum building
  - Since November 2019 we have a new laboratory building GEO-3EM beside Geocentrum
  - The GEO buildings are connected with the main WUST campus by a cable car
  - Our campus is close to the city center but it is very green and quiet
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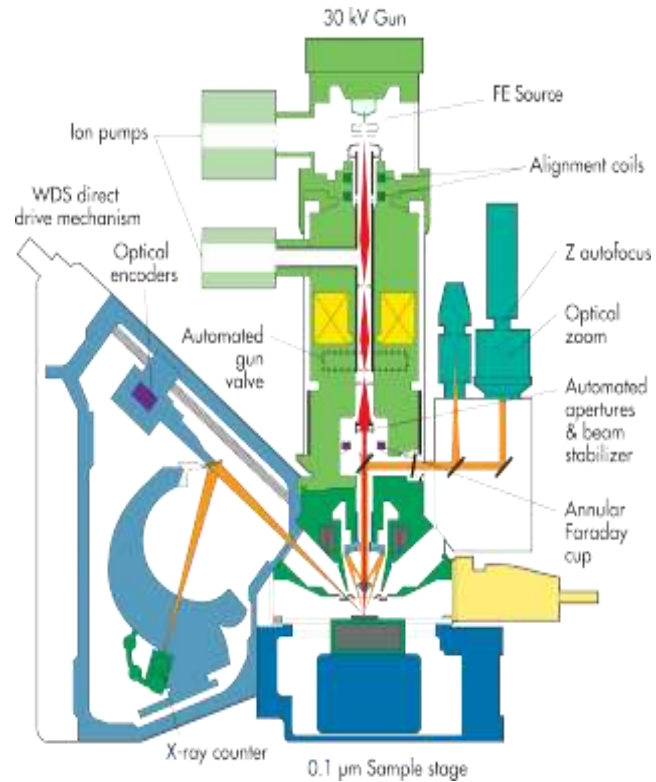


## GEO-3EM - ENERGY ECOLOGY EDUCATION

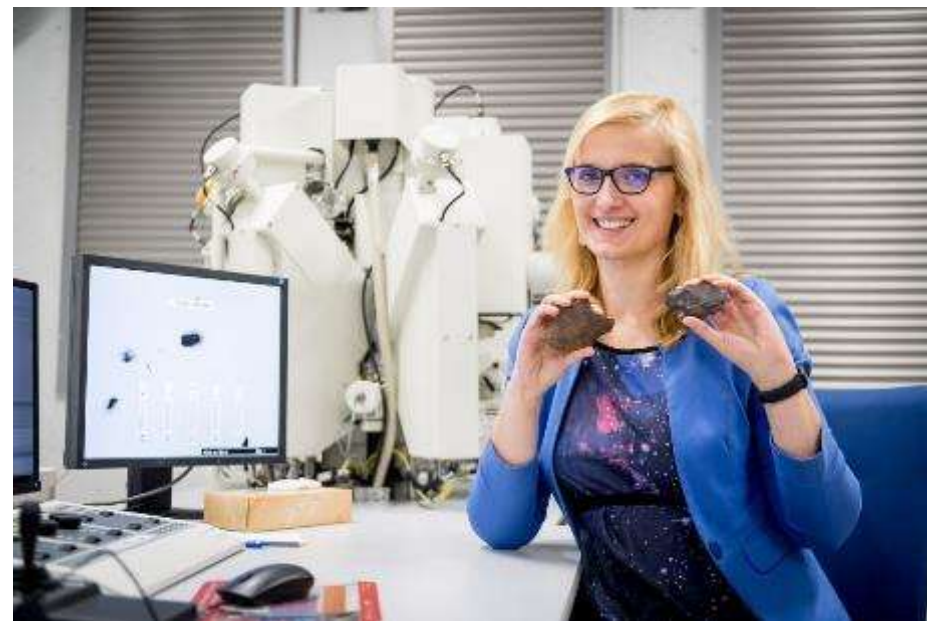
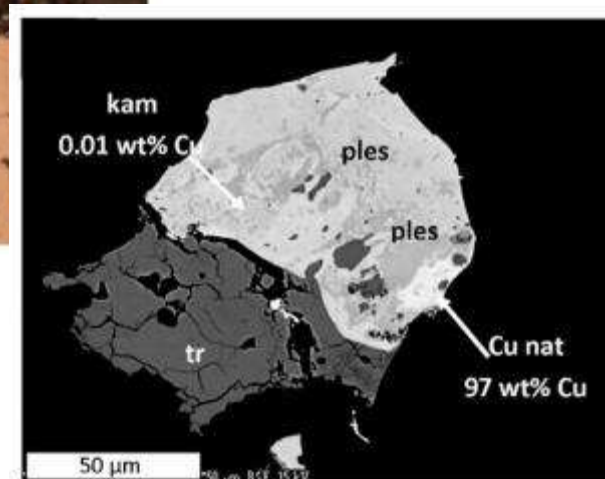
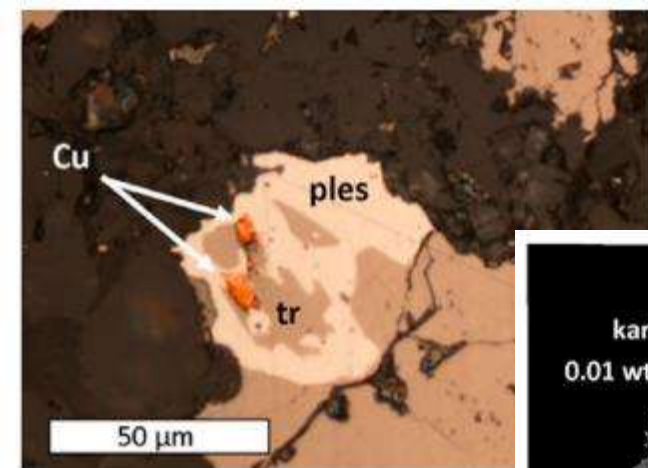
- Laboratory of Earth Sciences and Mineral Engineering
- Laboratory of Modelling Technology in Mining
- Laboratory of Machine Systems in Mining
- Accredited Belt Conveying Laboratory
- Accredited Work Safety Laboratory

# Laboratory of Earth Sciences and Mineral Engineering

## EPMA Cameca SX Five FE Electron Probe Microanalyzer



Isotopic, chemistry, geochemistry and cosmochemistry, geophysics, mineralogy and petrology labs.



# Sky is not the limit

EPMA Cameca SX Five FE  
Electron Probe Microanalyzer

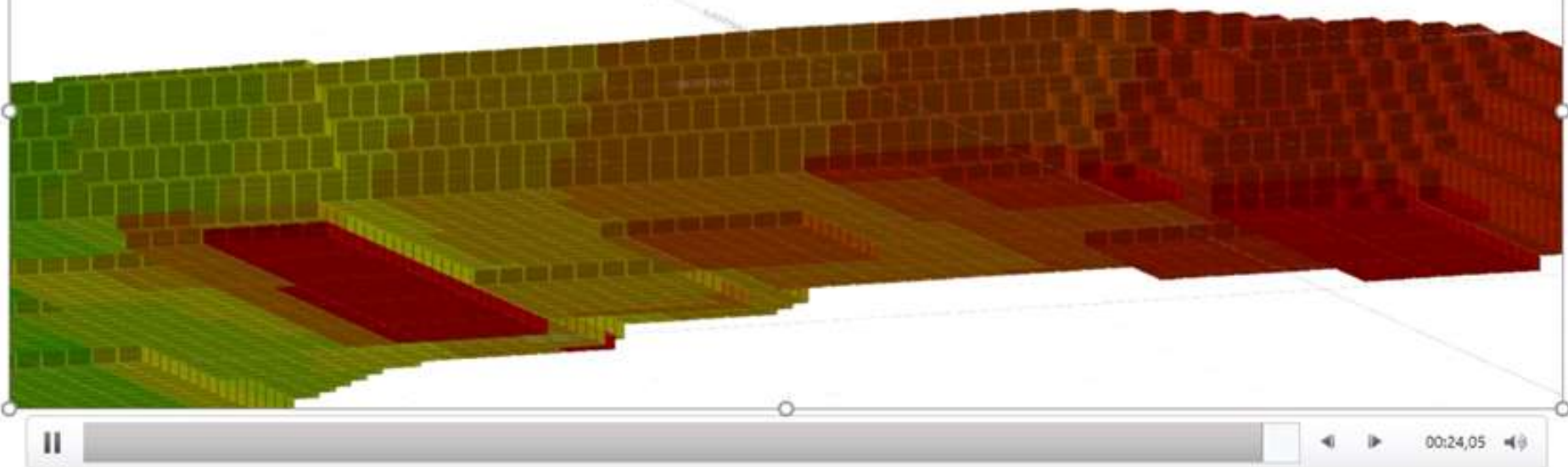


# Unique lab for rocks, natural stone and aggregates testing



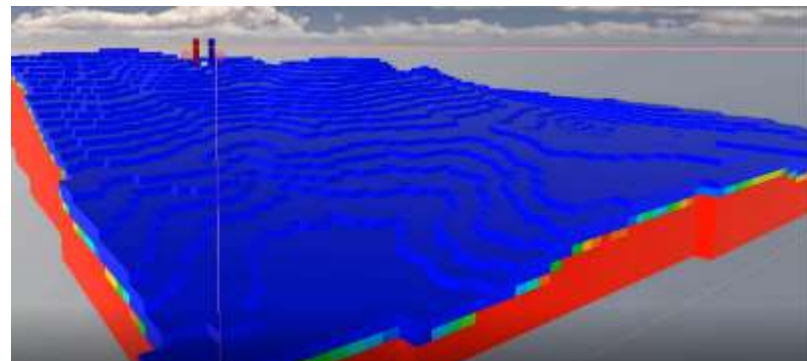
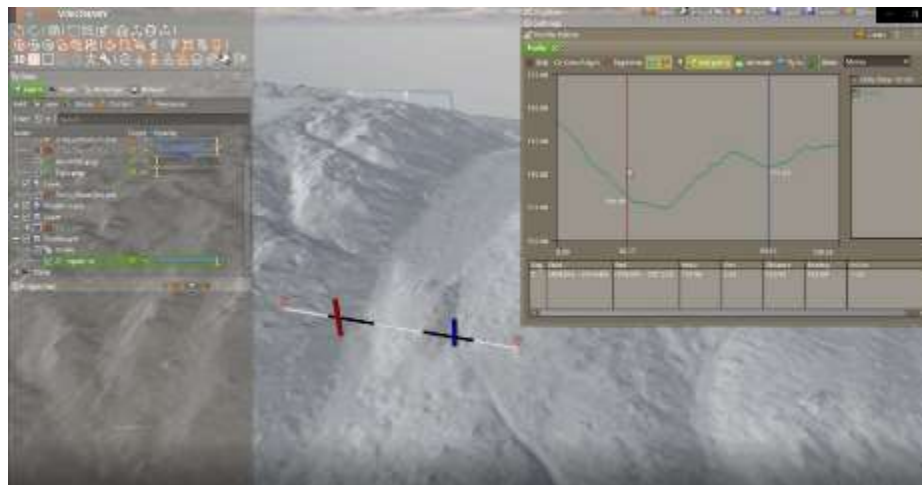
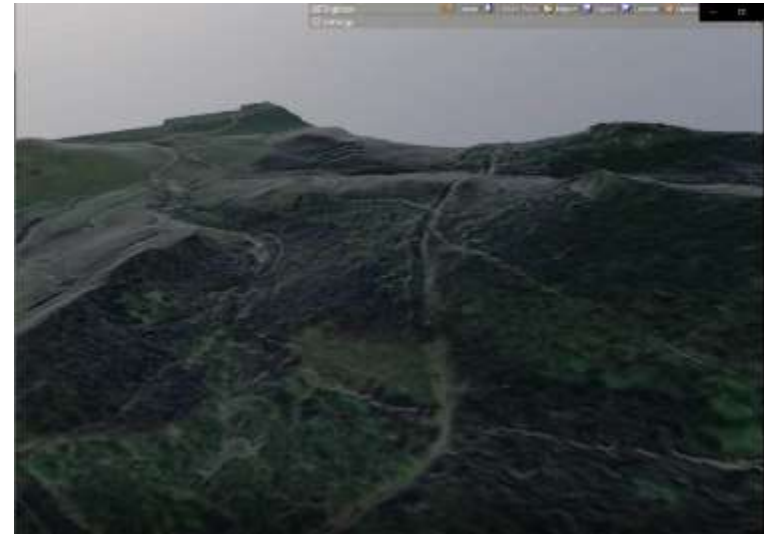
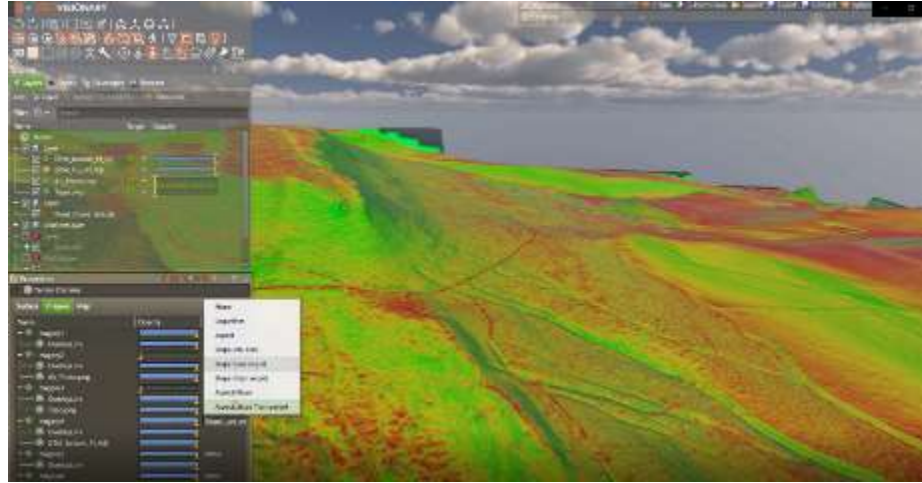
# LABORATORY OF MODELLING TECHNOLOGY IN MINING

(Source: Streich T. Modelling of the Life-of-Mine plan of a lignite surface mine with regard to optional mining costs, Master thesis, WUS&T, 2016)  
[educational licenses of Datamine Studio RM and NPV Scheduler]  
Highest NPV extraction sequence of blocks within the optimised mining schedule  
Years: from: 1 to: 21

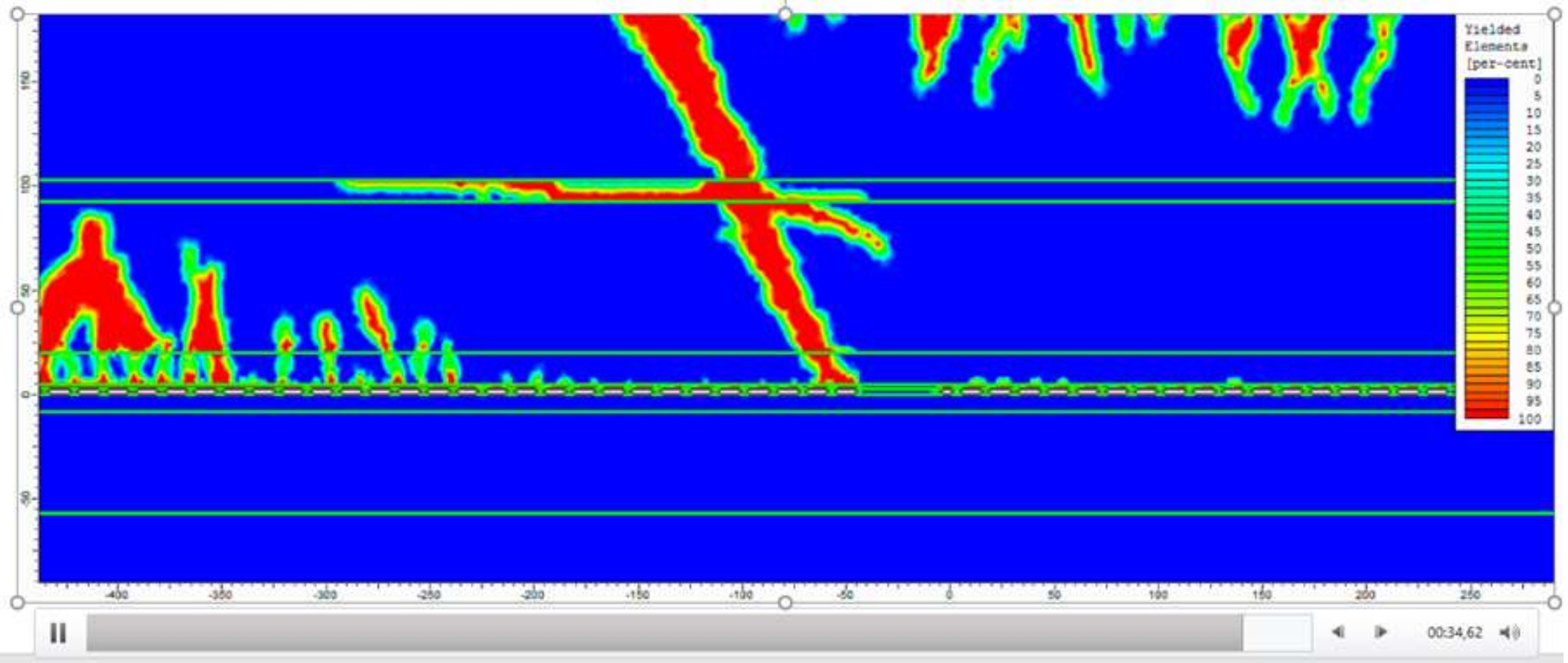


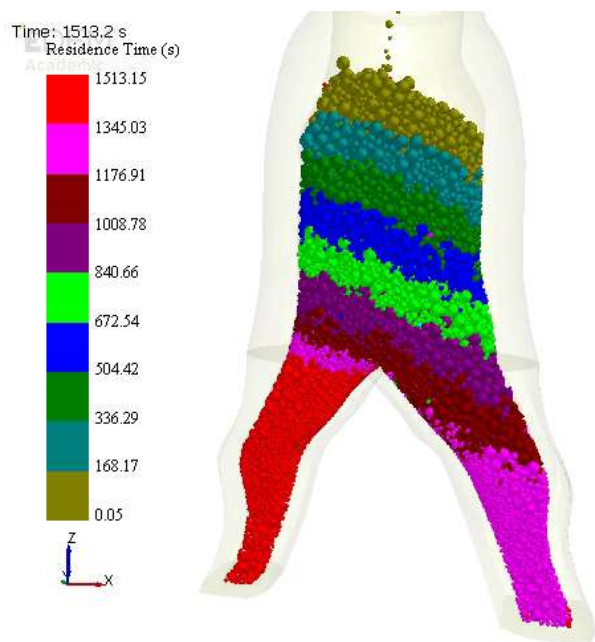
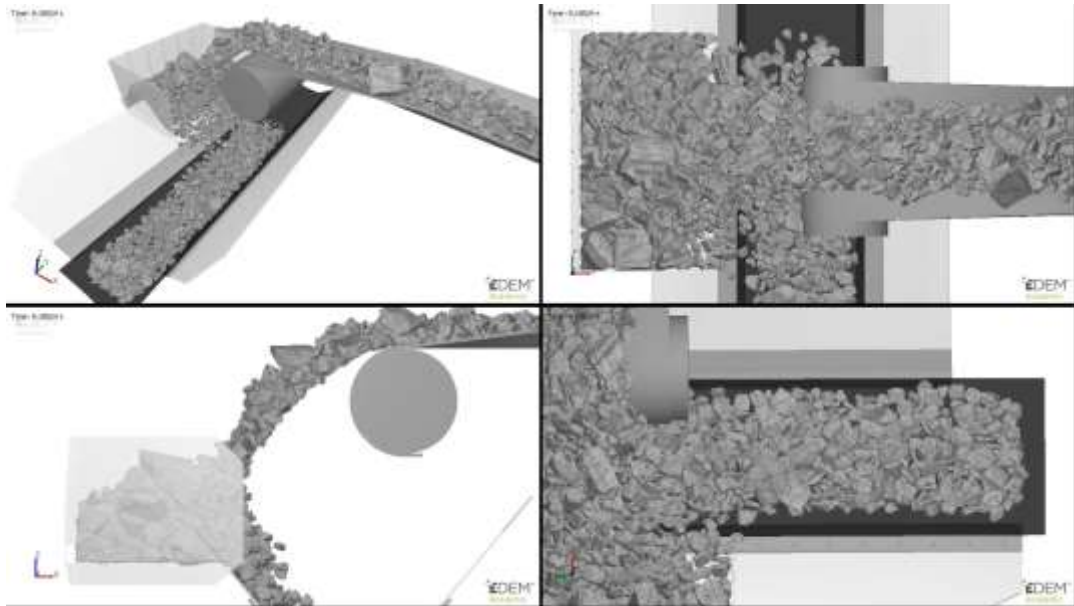
## Laboratory of Modeling Technology in Mining

VR Visualization (GeoVisionary, FlexSim with Flowworks, OptQuest and EDEM modules) in order to carry out analyses on the construction of comprehensive virtual simulation models presenting and processing geospatial objects (geology, surface area, mining) and others.

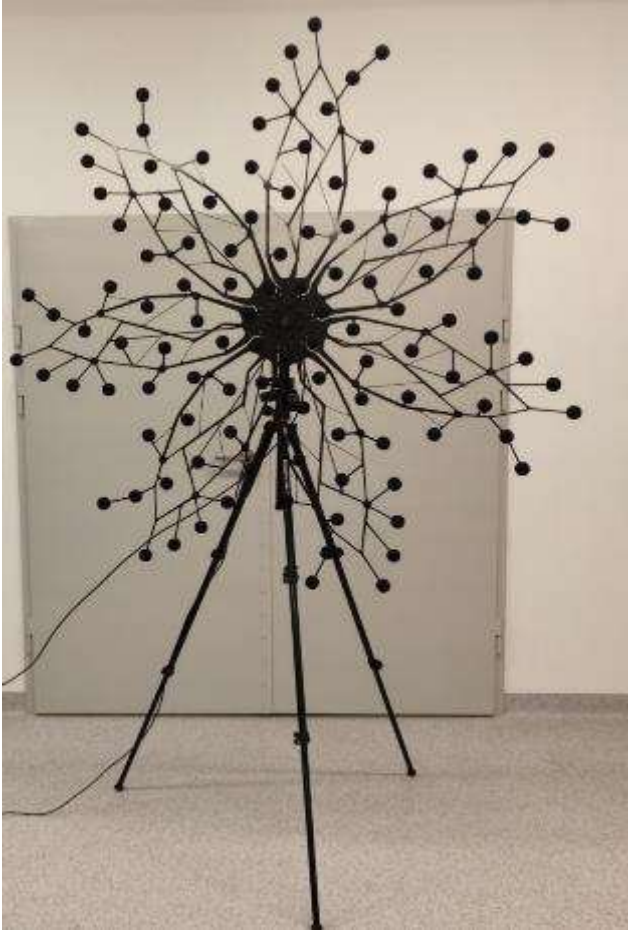


# LABORATORY OF MODELLING TECHNOLOGY IN MINING





# BELT CONVEYING SYSTEMS



# DIGITAL MINING CENTRE

Mobile Inspection Robotics Lab and Monitoring, Diagnostics and Modeling of Processes, Machines and Environment Lab

# Modern Geodesy for mineral exploration and mining

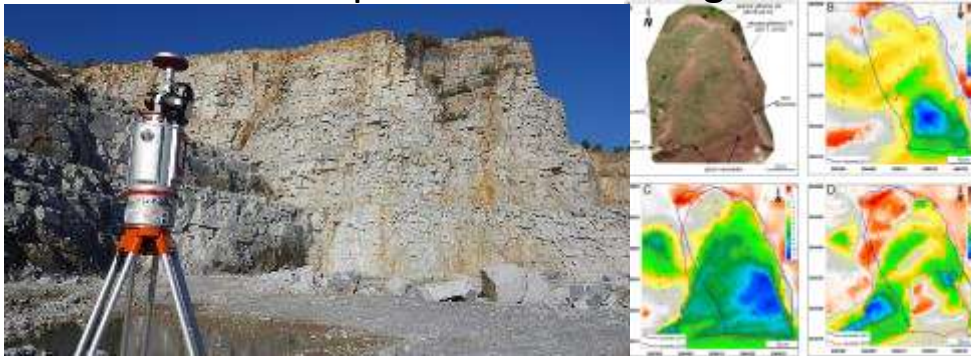
## Mobile Laser Scanning System (MLS LiDAR)



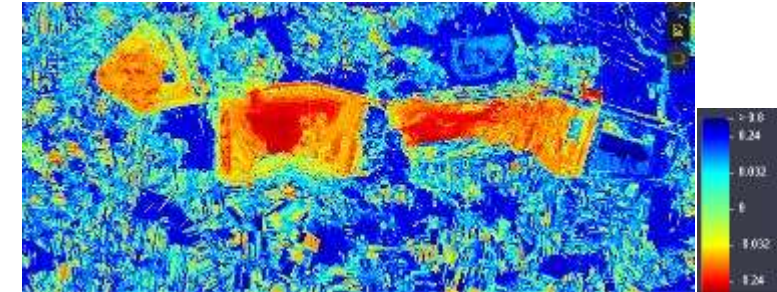
## Remote sensing (Sentinel)



## Landslides and quarries monitoring



Vegetation Index NDVI



Humidity Index

## Photogrammetry



# Projects



Wrocław  
University  
of Science  
and Technology

- VOT3D: Ventilation Optimizing Technology based on 3D-scanning
- Electrical Computerised Hammering Operator (ECHO)
- TIMREX - T-Shaped Master Programme for Innovative Mineral Resource Exploration
- RIS Internship
- "The European Training Network on Monitoring Large-Scale Complex Systems (MOIRA)"
- "Master in Entrepreneurship, Innovation and Technology Integration in Mining (MEITIM),,"
- "AMICOS. Autonomous Monitoring and Control System for Mining Plants"





Students Activity  
*Mining traditions*

Landslide  
Mitigation

Engineering  
Geology

Soil  
Mechanics

Foundation  
Designs

Geotechnical  
Engineering

Research

Laboratory  
Services

PROGRAM  
INFORMATION

## Fields of study

- **Mining and Geology**  
BSc and MSc studies both full time and part time
- **Geodesy and Cartography**  
BSc studies since 2011/2012,  
MSc studies since 2017/18
- **Geoinformatics**  
BSc studies offered for the first time in 2021 (full time)
- **Occupational Health and Safety**  
MSc studies – new in 2022
- **Geoenergy Engineering**  
BSc studies – new in 2022
- **Raw Materials Engineering**  
BSc studies – new in 2022



# UNDERSTAND EXPERIENCE SHARE DISCOVER



High proportion of **active classwork hours** (projects, laboratory classes, seminars, calculation classes)

Good cooperation with the mining industry in Poland – **internships, technical excursions, MSc project topics**

**State of the art computer software for the Mining industry**

Datamine Studio, Datamine 5DP & EPS, Geovariances Istatix, Minesatis, Statsoft Statistica, FlexSim, Geovisionary (VR), : RS3 v.2.0, Dips v.7.0, RocTopple v.1.0, RS2 v.9.0, Slide v. 7.0, RocData, FLAC3D v. 6.0, PFC3D, 3DEC v. 5.2, Rhino, Griddle, ExaMine, SIMCENTER3D, NASTRAN, ARC GIS, Geostudio, GMTSAR, and more

**Industry specialists employed**

# MASTER PROGRAMS IN ENGLISH

- Field of study: **Mining and Geology**
- Specialisations:
  - **Mining Engineering**
  - **Geotechnical and Environmental Engineering**
  - **Geomatics for Mineral Resource Management**
- Field of study: **Geodesy and Cartography**
- Specialisations:
  - **Geomatics**



THANK YOU FOR YOUR  
ATTENTION

HAVE A NICE STAY  
IN WROCLAW!

