



## Laboratory of flotation

I. Location of the laboratory:

Research, Education and Innovation Centre of Earth and Environmental Science University of Miskolc building C/2 hall 1

II. Operating institute of the laboratory:

Institute of Raw Material Preparation and Environmental Technology

III. Scientific Head of the laboratory:

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IV. Responsible Researcher/person:

Valeria Mádainé Üveges, PhD, Senior Lecturer

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The aims and tasks of the laboratory in the education, scientific and research fields:

The target of the laboratory is the fundamental and applied experimental research, as well as further development of flotation and flotation related processes.

Tasks of education and research:

Research activities include:

- basic and applied research and development of flotation and related physicochemical separation processes: ion flotation, selective agglomeration, electroflotation, etc.
- investigation of the interfacial properties of dispersed mineral-fossil and artificial materials and wastes;
- investigation of the fundamental phenomena in heterogeneous multi-phase coarse disperse material systems;
- determination and optimisation of technological parameters, design and development of technology.

Academic mission of the Laboratory: demonstration and measuring classes in flotation, TDK scientific student work, theses and dissertations within the framework of the B.Sc., M.Sc., Ph.D. and postgraduate education.





- V. Laboratory experiments, services (on-site experiment is possible):
  - Wettability, frothing and flotability testing
  - Particle-particle interaction studies (coagulation and flocculation, adsorption, adhesion) by zeta-potential and other measurements
  - Flotation kinetics investigation
  - Flotation technological studies
  - Technology development research
  - Closed loop flotation computer simulation.
- VI. Available equipment for education, research and innovation
  - Zeta Plus/PALS Brookhaven zeta-potential measuring device with automatic titration unit;
  - contact angle measuring apparatus;
  - stalagmometers;
  - expansibility-, and foam stability-measuring apparatus;
  - Hallimond –tubes;
  - monobubbles flotation tube (Freiberg);
  - plexi flotation columns, V=0,1.....0,6 L (own development);
  - Mekhanobr techn. flotation equipment FML-03 (cell volume:0,05-0,3 L)
  - Self aerated flotation laboratory apparatus (V=1...3 L);
  - pH-Eh meters, conductivity meters, magnetic stirrers, etc.
- VII. Laboratory development plan, requirements:

Our further development plan is linked to both the investigation of the basic phenomena, as well as applied research.

VIII. Main professional partners / references:

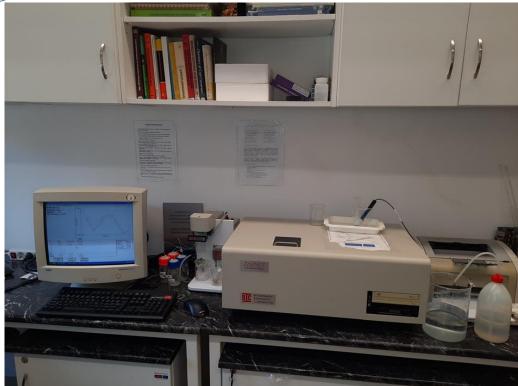
EUROTALC s.r.o., Montanuniversitat Leoben, Wild Horse Energy Kft, BAM Bundesanstalt für Materialforschung und –prüfung, research institutes and universities from Hungary and abroad.

IX. Compiler of the information material:

Ljudmilla Bokányi and Valéria Mádainé Üveges







Flotation lab – Zeta-potential meter



Flotation lab, flotation machines

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