



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:

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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 physico-chemical 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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