



VIII. Laboratory of Measuring Technics

- 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:

József Faitli, PhD, DSc, Professor
3515 Miskolc-Egyetemváros A/4 II. 203.
Telephone: +36-30-9654420
e-mail: jozsef.faitli@uni-miskolc.hu
- IV. Responsible researcher/person:

Roland Romenda, research fellow

3515 Miskolc-Egyetemváros C/2 building, 1.hall
e-mail: roland.romenda@uni-miskolc.hu
- V. The aims and tasks of the laboratory on the education, scientific and research fields:

The primary aim of the laboratory is the development of new measuring equipment and techniques for the prototype production of the Institute. Furthermore, an important role of the laboratory that it gives up-to-date theoretical and practical information to the students about the knowledge of modern measurement techniques of raw materials preparation industry. The BSc course “Measurements of Raw Materials Preparation” is taught in this lab as well.
- VI. Laboratory experiments, services (on-site experiment is possible):

The laboratory undertakes to carry out measurement tasks and complex plant testing in outer places besides its regular in-house teaching and research duties. In every case study, we design a complex sampling and measuring plan, and then we install the necessary supplementary computer data acquisition system and carry out complex sampling on the examined technology. By this way we gain quantity and quality information about the material flows and technical parameters of the technology and this information make it possible to evaluate and further develop the given technology.



VII. Available equipment for education, research and innovation

- Computer data acquisition systems
- DAQ cards (100 ... 200 kHz, 12 ... 16 bits)
- LabWindows CVI data acquisition software
- AC and DC measuring amplifiers
- No dead space gauge pressure transducers: ATM – Hottinger 1 ... 10 bar
- Differential pressure transducers: Hottinger 0.01 ... 2 bar
- Inductive flow transducers: Kaliber NA 25 ... 50
- Polysius ultrasonic flow meter (0 ... 8 m/s)
- UVP Duo ultrasonic flow meter (for measuring velocity profiles in max. 3 m length and 1 mm resolution)
- Force transducers: Kaliber 50 ... 1000 kg
- Torque transducers (0 ... 20 Nm)
- Differential pressure transducers (0 ... 5000 Pa)
- Prandtl and Pitot tubes
- Different manometers (tilted and U tube, etc..)
- Floating bodies density measuring set for liquids (50 floating bodies, 700 3000 kg/m³)
- Digital electrical power testers
- Digital balances (100 g, 1 kg, 2 kg, 10 kg, 60 kg, 150 kg)
- Digital “handheld” balances (5 kg, 10 kg, 50 kg, 100 kg)
- Laboratory power supplies
- Digital multi-meters
- Instruments to test particle size distribution (laser back scattering, image analysis, zeta potential testing, ...)
- Handheld meters (temperature, “hot wire” air velocity, revolution number, magnetic susceptibility, ...)

VIII. Laboratory development plan, requirements:

Further development of instrumentation and DAQ programming.

IX. Main professional partners / references:

Enexio Kft.; Ventifilt Légtechnikai Rt.; 3B Hungária Kft.; .A.S.A Magyarország Kft., Felső-Bácskai Hulladékgazdálkodási Kft., Weir Minerals,

X. Editor of this information material: Prof. Dr. József Faitli



Photos:



The laboratory

Miskolc, 19 June 2024