

The Sample Preparation Laboratory

is devoted to the preparation and preservation of different types of samples, but also to the preliminary determination of some characteristics related to pH, conductivity and biochemical oxygen consumption at 5 days (CBO₅).

The sample preparation laboratory includes numerous equipment which may be used for preparing samples depending on the type of environment from which they were collected (water, soil, air, biota) and on their composition. The preservation of the samples, which may or may not have been previously prepared for further analysis, can be done by:

- refrigeration;
- freezing;
- preservation with the help of chemical reagents.

The Sample Preparation Laboratory

Members:

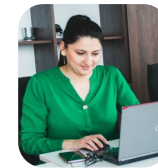
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<https://dcfm.ugal.ro/index.php/membri/2-uncategorised/40-timofti-mihaela>



- **PhD Student Mădălina CĂLMUC**

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The Sample Preparation Laboratory

Equipment:

Magnetic stirrer with multi-station heating, MS-H340-S4, DLAB

Uses:

sample preparation and/or preparation of laboratory reagents.

Technical specifications:

- 4 independent stirring/heating positions with a stirring capacity per position of 0.4 L;
- maximum adjustable temperature of 340 °C;
- overheating protection temperature 420 °C;
- stainless steel platters with ceramic coating.



The Sample Preparation Laboratory

Equipment:

Ultrapure water device with UV filter/final filter, Onsite+ HPLC, ADRONA

Uses:

- preparation of reagents, culture media, buffer solutions needed in analysis with IC, LC, GC, ICP-MS, cell cultures, cellular microbiology, nanotechnologies.
- automatic extraction of distilled/ deionized water from the tank and instant transformation into ultrapure water.

Technical specifications:

- resistivity of water obtained after purification: 18.2 M Ω cm at 25°C;
- OCD < ppb;
- instantaneous flow of water produced by the final filter that removes particles and bacteria in the range of 1.5 ÷ 2 L/min;
- UV lamp that emits at 2 wavelengths: 185 nm and 254 nm, included in the photo-oxidation mode;
- photo-oxidation mode and polishing mode for water purification;
- 50 L tank with tap, for manually filling distilled/deionized water storage, manufacturer Kartell.



The Sample Preparation Laboratory

Equipment:

Ultrasonic bath, DR-P60 Ultrasonic Cleaner, DERUI

Uses:

- sample preparation/analysis and/or reagent preparation.

Technical specifications:

- material: stainless steel;
- tank capacity: 6 L;
- ultrasound frequency 37KHz;
- ultrasonic power 240W;
- ultrasonic timer 0~60 minutes;
- heating power 270W;
- functions: Degas/Sweep/Pulse;
- possibility of water drainage;
- power setting possibility: 0-120%.



The Sample Preparation Laboratory

Equipment:

Water bath, Pura 14, JULABO

Uses:

- sample preparation/analysis and/or reagent preparation.

Technical specifications:

- working temperature range: $+18 \div +99.9$ °C;
- temperature stability: ± 0.15 °C;
- heating capacity: 1.8 kW;
- filling volume between 2 L and 14 L.



The Sample Preparation Laboratory

Equipment:

Technical scale, EX 1103M, OHAUS

Uses:

- weighing samples with mass of the order of grams.

Technical specifications:

- weighing capacity 1100 g;
- reading accuracy: 1 mg;
- 2 touchless sensors.



The Sample Preparation Laboratory

Equipment:

Analytical balance, EX 225D/AD, OHAUS

Uses:

- highly accurate weighing of small amounts of sample or chemicals.

Technical specifications:

- capacity: 220 g;
- weighing accuracy up to the 5th decimal place;
- internal calibration with 2 calibration weights;
- 4 touchless sensors.



The Sample Preparation Laboratory

Equipment:

Laboratory centrifuge with cooling, ROTINA 420R, HETTICH

Uses:

- separation of the solid phase from the liquid phase.

Technical specifications:

- stainless steel centrifuge chamber;
- rotation speed of 16000 RPM, spin speed of 26331 RCF;
- capacity volume max. of centrifugation: 4X750 mL;
- cooling function for the temperature range: $-20\text{ }^{\circ}\text{C} \div +40\text{ }^{\circ}\text{C}$.



The Sample Preparation Laboratory

Equipment:

Laboratory oven, TCF 50 SUPER, SUZHOU BEING MEDICAL DEVICE CO., LTD

Uses:

preliminary preparation of solid environmental samples (eg: soil, sediment, plant tissue, animal tissue) in order to subsequently determine different classes of pollutants.

Technical specifications:

- forced air circulation;
- capacity 50 L;
- heating time (150°C) 20 min;
- resolution 0.1 °C;
- temperature homogeneity at 150 °C \pm 2 %;
- maximum temperature 300 °C;
- temperature min + 5 °C RT;
- temperature variation at 150 °C \pm 0.3 °C;
- possibility of use in the temperature range +10°C above ambient up to 300°C.



The Sample Preparation Laboratory

Equipment:

Laboratory glassware washing machine, GW4060SC-1, SMEG

Uses:

efficient and fast washing of laboratory glassware.

Technical specifications:

- fully automated, microprocessor controlled system with 9 pre-installed defaults and 6 custom programs;
- washing up to 95°C - antibacterial thermal disinfection programs;
- programmable electronic control with microprocessor;
- forced drying system with hot air with air filter 98% DOP;
- high efficiency Ecoslim steam condenser, with cold water;
- peristaltic injection pump for liquid detergent;
- electronic door locking system for user safety electrical connection;



The Sample Preparation Laboratory

Equipment:

Laboratory glassware washing machine, GW4060SC-1, SMEG

Technical specifications:

- main operations performed in a complete cycle without user intervention: pre-wash, wash, rinse, final rinse, drying and cooling;
- washing chamber with two levels and two washing arms (upper and lower);
- HEPA filtered air drying system, at high temperatures, externally and internally via injector, supplied by a turbo-blower;
- separate compartment for storing detergent and neutralizing agent;
- base level rack;
- multifunctional rack with at least 48 injectors;
- rack for simultaneous washing of at least 100 pipettes.



The Sample Preparation Laboratory

Equipment:

Chemical niche with exhaust for acids and solvents, NC_110_C, E-Laborator

Uses:

- preparation of chemical reagents;
- preparation of samples to be analyzed by various advanced analysis techniques.

Technical specifications:

- external dimensions: L x W x H = 1060 mm X 900 mm x 2000 mm;
- internal preparation enclosure with anti-acid technical ceramic top;
- technological control panel with electrical circuit for 2 ÷ 4 16A electrical sockets, chemical niche lighting, niche exhaust system, frequency inverter with the role of engine speed adjustment;
- suction-exhaustion system equipped with filters for ACIDS or SOLVENTS and electric
- motor with single-phase supply, maximum power consumption 1.1 KW, piping and centrifugal fan;
- fixed underbench storage element with inner casing made of fireproof melamine panels and doors/drawer fronts of laminated panel equipped with ventilation grilles connected to the exhaust system.



The Sample Preparation Laboratory

Equipment:

Micropipette set, Transferpette® Electronic Pipette, Transferpette

Uses:

- pipetting small and very small volumes.

Technical specifications:

- pipetting, reverse pipetting, mixing, and dosing programs;
- operation based on batteries that are quickly charged via charger with USB cable;
- the set contains 3 micropipettes with adjustable pipetting volumes:
 - pipetting volume between: 0.5 – 10 μl ;
 - pipetting volume between: 5 – 100 μl ;
 - pipetting volume between 50 – 1000 μL .



The Sample Preparation Laboratory

Equipment:

*System for obtaining ultrapure water, CYCLON/ Labostar Pro,
FISTREEM/ EVOQUA*

Uses:

obtaining deionized, distilled, bidistilled water from which ultrapure water can be prepared.

Technical specifications:

- production capacity 4 L/h double-distilled water and 8 L/h distilled water;
- glass bidistiller;
- water conductivity resulting after bidistillation: $<1\mu\text{S}/\text{cm}$;
- tank for storing the resulting water with a capacity of 30 L with a level sensor with automatic stop of the supply in case of filling the tank;
- ultrapurification device that feeds directly from the double-distilled water tank.



The Sample Preparation Laboratory

Equipment:

Solid phase extraction system and vacuum pump, 20 position system and vacuum pump R-400 Rocker, WATERS / Rocker

Uses:

sample preparation for chromatographic analysis and for determining the content of lubricating oils in water, pesticides in soil, EOX in soil, etc.

Technical specifications:

- control unit which allows control and monitoring of 4 extraction systems, each using a different program. The controller allows storage/recall of different extraction programs and has a multi-function display which allows for simpler programming;
- compressor;
- extraction system consisting of a basic unit with 4 places which allows 4 simultaneous extractions.

