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INOW ASIA

VNU Key Laboratory of Advanced
Materials for Green Growth,
University of Science, Vietnam
National University, Hanoi.





The list of equipment purchased at University of Science, Vietnam National University, Hanoi.



- 1) UV-Vis Spectroscopy UV-Vis 722N, INESA
- 2) Magnetic stirrer C-MAG HS7, IKA
- 3) Rotary evaporator RV 8V, IKA
- 4) Multi-Parameter Analyzer, U-54G, Horiba
- 5) Laminar airflow cabinet, FOC200E, Velp.
- 6) Water sampler NT-250, As One
- 7) Benchtop pH meter Model: FP20, Mettler Toledo
- 8) Portable pH meter HI8314, HANNA
- 9) Lincubator VG-4AG-F8, ESCO

Pictures can be seen below



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Description of the application of purchased equipment/instruments for INOWASIA project

- 1) **UV-Vis Spectroscopy UV-Vis 722N, INESA:** used to analyse the concentration of pollutants (organic compounds, dyes, antibiotics, heavy metals, nitrate, nitrite,...) by the absorption of ultraviolet light or visible light by chemical compounds. It is a widely used technique in a number of areas, ranging from environment to chemical research.
- 2) **Magnetic stirrer C-MAG HS7, IKA:** used to stir, dissolve and heat solutions, chemicals, synthesize materials... in the laboratory. It is mandatory for almost all the labs.
- 3) **Rotary evaporator RV 8V, IKA:** used for sample preparation (concentration, solvent recycling, separation, composition analysis in solvent mixtures...).
- 4) **Multi-Parameter Analyzer, U-54G, Horiba**
 - a handheld environmental monitoring device that measure water parameters: pH, ORP, DO, conductivity, salinity, temperature, turbidity, water depth, GPS.
 - used to check and analyze water and waste water quality.
- 5) **Laminar airflow cabinet, FOC200E, Velp:** it is widely used in laboratories, research and production activities, etc. Here it is used for sample preparation (avoid contamination: by dusts, and others). Thereby avoiding the spread of pathogens and toxic substances to the surrounding environment.

Description of the application of purchased equipment/instruments for INOWASIA project

6) Water sampler NT-250, As One: used for mobile and stationary sampling of water, wastewater and surface water.

7) Benchtop pH meter Model: FP20, Mettler Toledo used to determine criteria parameters for water and wastewater: pH, ORP, conductivity, ... in the laboratory

8) Portable pH meter HI8314, HANNA: Highly accurate, compact, portable to analyse water parameters (pH, ORP, temperature, conductivity) in the field.

9) Incubator VG-4AG-F8, ESCO: is a specially designed device with a closed operating chamber. With a special air-flow system that allows protection: Here we apply it in the study of culturing and growing microorganisms.

All of the above equipment will be used for

- Research in water quality and waste water treatment
- Undergraduate and graduate students' practice/lab works related to water quality and management.

- 1) Dr. HA Minh Ngoc is responsible for deploying all of the purchased equipment for research and education (undergraduate and graduate programmes).
- 2) For graduate students
 - ❖ For master Students majoring in master of i) environmental engineering, and ii) environmental chemistry will involve in VNU University of Science's Living Lab where the lab's work/practice of water quality and waste water treatment modules including PBL will be performed. The master and PhD students will also conduct the research for their thesis within this LL.
 - ❖ For internship students of the INOWASIA project, we will host 2 students who will focus their research activities to water quality and water management at the VNU's LL where we have an onsite waste water treatment system based on phytoremediation and microorganisms, with a capacity of over about 30 m³/day .



Equipment pictures

Laboratories



Laboratories



1) UV-Vis Spectroscopy UV-Vis 722N, INESA



2) Magnetic stirrer C-MAG HS7, IKA



3) Rotary evaporator RV 8V, IKA



4) Multi-Parameter Analyzer, U-54G, Horiba



5) Laminar airflow cabinet, FOC200E, Velp.



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7) Benchtop pH meter Model: FP20, Mettler Toledo



8) Portable pH meter HI8314, HANNA



9) Incubator VG-4AG-F8, ESCO



Domestic waste water treatment system: Capacity of more than 30 m³/day





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THANK YOU

