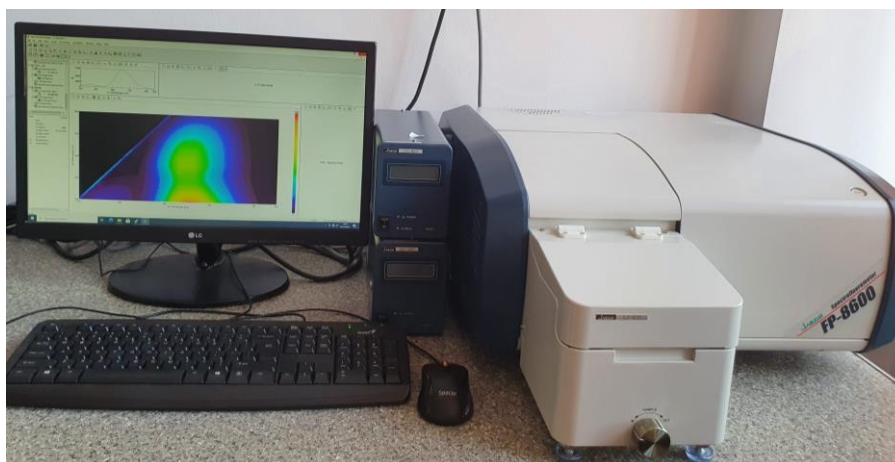


FP-8600 UV-VIS/NIR Fluorescence Spectrometer (Jasco, Japan)



► **Technical specifications:** Wavelength range: Excitation (Ex): 200-850 nm, Emission (Em): 200-1010 nm; Monochromators: 1800 lines/mm, Selectable spectral bandwidth: 1, 2.5, 5, 10 or 20 nm, special bandwidth adjustment for small sample volumes; Wavelength accuracy: ± 1.0 nm; Selectable scan speed: 10 – 60000 nm/min (Ex), 10 – 120000 nm/min (Em); High sensitivity S/N > 3500 Signal-to-noise ratio (RMS, measured on water Raman peak, Ex and Em bandwidth 5 nm, response: 2s), Automatic gain and sensitivity adjustment; Built-in mercury lamp for precise wavelength control; Automatic filters to remove higher order diffraction bands; Automatic accessory recognition system; Control: Spectra Manager software (JASCO).

INTEGRATING SPHERE MODULE FOR DETERMINING THE EMISSION QUANTUM YIELD

100 mm integrating sphere, model ILF-835

Calibrated D2 light source used for the emission part, between 260 nm and 380 nm

Tungsten-Halogen light source for 350 nm -1000 nm

1 mm liquid sample cell, 1 x 10 x 25 mm

2 mm liquid sample cell, 2 x 10 x 25 mm

Cell for solid samples 3 mm, 3 x 10 x 25 mm

Fluorescence Emission Quantum Yield Calculation Program (FWQE-880)

► Types of measurements:

Emission spectrum of a chemical compound in solution or solid samples

Excitation spectrum of a chemical compound in solution

Quantitative analysis based on calibration curves

Measurements under continuous irradiation at fixed wavelengths

Simple kinetic measurements

Measurements of three-dimensional fluorescence spectra

Determination of the emission quantum yield of some liquid and solid samples of interest

► **Total value:** FP8600 spectrometer (155.890 lei); Computer system (7.735 lei); Integrating sphere (110.908 lei)

► **Aquisition year:** 2019 + annexes (2020)

► Applicability:

Investigation of the luminescence properties of some materials in the spectral domain (Uv-Vis-NIR),

Characterization of the interaction of some exo- or endogenous chromophores with different (nano)particles applied in medicine or biology;
Molecular fluorescence correlation studies;
Quantitative and qualitative studies of some fluorophores of interest;
Pharmaceutical studies;
Investigation of chemical/biochemical/plasmonic sensors;
Investigating the conformational changes of some proteins of interest;
Study of mechanisms and dynamics of fluorescence inhibition;
Detection of molecular interactions;
Quantification (quantitative measurements) of high precision of DNA and RNA;
Detection of pesticides;
Detection of water contaminants;
Determination of the emission quantum yield of some newly synthesized fluorescent molecules;
Up-conversion studies.

► **Availability for Access and Use**

Contact persons:

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Available for a pre-evaluation of the complexity of the samples and estimation of the working time, in the **9:30 - 17:30 interval**, based on a preliminary email or phone appointment. The system is permanently functional, during the working hours of the operators, being available for internal/external UBB services on a scheduled basis.

Usage conditions: exclusively by the personnel responsible for the mentioned specialty

Analysis price - extern UBB: Preliminary evaluation – free of charge; Emission/excitation/sincron spectra: 150 lei/sample; 3D Fluorescence emission maps: 150 lei/sample; Quantum yield determination: 300 lei/sample

Analysis price - intern UBB: free of charge