1. **Name of scientific laboratory** A-541

2. **Objectives of the scientific laboratory**: research within the framework of the project “Metal-organic coordination polymers based on azoles: synthesis, study of properties, production of new functional materials” state budgetary research No. 327/2 dated November 27, 2020, leader Kasanova A.Zh.

**List of laboratory equipment**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **№**  | **Name of the equipment** | **Brief characteristics of the equipment**  | **Tasks performed on the equipment** | **Year of manufacture** | **Certification (yes/no)**  | **Date of equipment verification** | **Notes** |
| 1 | Microscope Altami CM0745-T | Optical system: Greenough Optical System.Zoom ratio: 6.4:1 (7X-45X)Total range of possible magnifications: 2.59X-270X.Attachment: binocular (CM0745). Tilt angle of eyepiece tubes: 45°.Interpupillary distance adjustment: within the range of 52-75 mm. | designed for observing three-dimensional images of objects in reflected or transmitted light. When a digital camera is connected to the microscope, the image can be displayed on the monitor screen. In this case, the researcher receives high-quality enlarged images that can be saved to a computer hard drive | 2021 | no | - |  |
| 2 | Drying cabinet Loip LF-25/350-VS2 | Maximum heating temperature, °C +350Error in reproducing the set temperature, °C ±3Temperature maintenance error, °C ±1Warm-up time to maximum temperature, no more than 45 minDimensions of the working chamber, -(WxHxD), not less than mm 250x275x250Camera material - stainless steel. steelThere is a fan, the controller is programmableRated supply voltage, V 220Rated power, W 1200 f | for heating and drying various materials, carrying out analytical work in air, heat treatment of plastics and other materials in stationary conditions at temperatures from 50 to +350°C. | 2021  | no | - |  |
| 3 | Spectrofluorimeter SM 2203 | Sensitivity signal-to-noise ratio - no less than 160 (190)Excitation and registration double monochromators with dispersion addition, with automatically tunable light filters that cut off higher orders of the spectrumSpectral range in spectrofluorimeter mode 220…820 nm (220-920)Single-position thermostatically controlled cell holder (10…60°С with resolution of 0.1°С)Minimum sample volume 1 ml in a standard 10 mm cuvetteSpectrophotometer modeSpectral range 220…1100 nmPhotometric range - 0.3...3 B | The device combines the functions of a spectrofluorimeter, spectrophosphorimeter, spectrophotometer and chemiluminometer. Provides highly sensitive and stable measurements in the ultraviolet and visible regions of the spectrum. Measurement of fluorescence and phosphorescence spectra (excitation, emission, synchronous, polarization, temperature), as well as absorption (transmission) spectra of liquid and solid samples Chemiluminescence measurement Determination of sample concentration using fluorimetric and photometric methods using factor, single point calibration, multi-point calibration curve Kinetic measurements at one, two, three wavelengths Relative quantum yield measurements Multi-wavelength luminescence and absorption measurements Measurement of fluorescence and phosphorescence temperature dependence spectra Phosphorescence lifetime measurement | 2020  | no | - |  |
| 4 | Laboratory centrifuge CM-6MT | Rotor speed 100-3500 rpm in increments of 100 rpmTimer up to 99 minutesRelative acceleration of the centrifuge 2300 gMaximum tube size: length – 120 mm, diameter – 16.8 mmNoise level no more than 55 dBPower supply 220 V, 50 HzPower consumption 250 WOperating conditions operating temperature 10-40°C, humidity up to 80%Overall dimensions 430×410×220 mmWeight 12 kg | for separation of fractions of liquid solutions of different densities under the action of centrifugal forces, as well as for sample preparation for further research | 2021  | no | - |  |
| 5 | Rotary evaporator Stegler RI-213 | Evaporation flask 500 and 1000 ml Receiving flask 1000 mlDiagonal refrigeratorCondensation area m2 0.14Rotation speed rpm 5-180Max. evaporation rate (H20) l/hour 1.2Maximum vacuum Pa <133 (1.33 mbar, 1 Torr)Bath power kW 1.5Adjustable temperature range °C up to 100Bath diameter 240 mm Bath material stainless steel SUS304Voltage V/Hz 220/50 or 60Assembled dimensions (WxDxH) 880×530×700 mmBath height 150 mm Bath volume 6 lNumber of containers: 2 pcs. | used for high-quality and simple distillation and evaporation of solvents and separations of liquid media from a rotating flask at reduced atmospheric pressure | 2021  | no | - |  |

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