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 +350  Error in reproducing the set temperature, °C ±3  Temperature maintenance error, °C ±1  Warm-up time to maximum temperature, no more than 45 min  Dimensions of the working chamber, -(WxHxD), not less than mm  250x275x250  Camera material - stainless steel. steel  There is a fan, the controller is programmable  Rated supply voltage, V 220  Rated 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 spectrum  Spectral 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 cuvette  Spectrophotometer mode  Spectral range 220…1100 nm  Photometric 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 rpm  Timer up to 99 minutes  Relative acceleration of the centrifuge 2300 g  Maximum tube size: length – 120 mm, diameter – 16.8 mm  Noise level no more than 55 dB  Power supply 220 V, 50 Hz  Power consumption 250 W  Operating conditions operating temperature 10-40°C, humidity up to 80%  Overall dimensions 430×410×220 mm  Weight 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 ml  Diagonal refrigerator  Condensation area m2 0.14  Rotation speed rpm 5-180  Max. evaporation rate (H20) l/hour 1.2  Maximum vacuum Pa <133 (1.33 mbar, 1 Torr)  Bath power kW 1.5  Adjustable temperature range °C up to 100  Bath diameter 240 mm  Bath material stainless steel SUS304  Voltage V/Hz 220/50 or 60  Assembled dimensions (WxDxH)  880×530×700 mm  Bath height 150 mm  Bath volume 6 l  Number 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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