

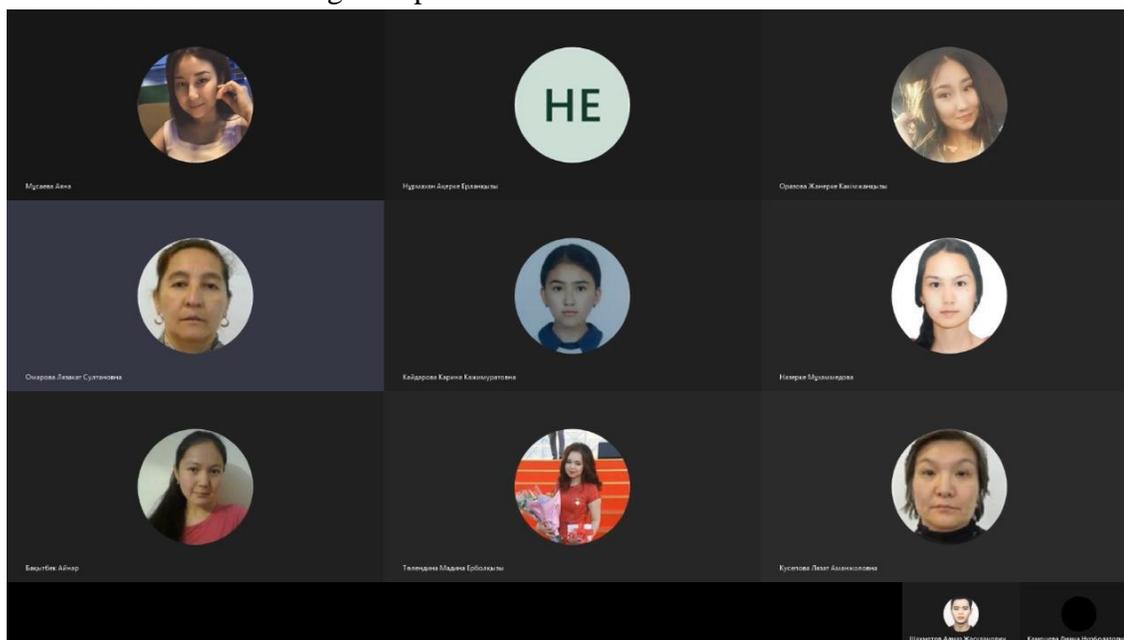
## Report on pre-diploma practice of 4th year students 2020-2021

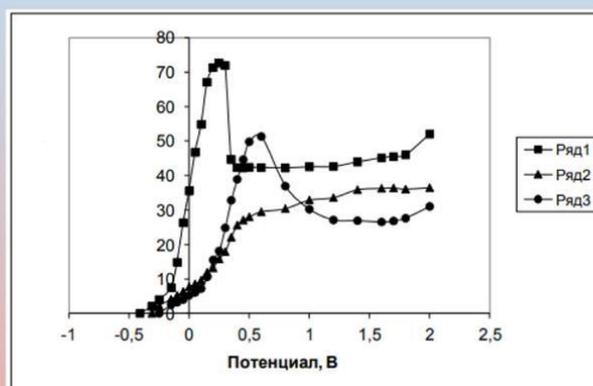
*The educational conference of pre-diploma practice* of Xm-41,42 group students in specialty 5B060600-Chemistry was held March 05, 2021, through Microsoft Teams platform.

Head of the Chemistry Department, E. E. Kopishev, gave a talk on the task and purpose of the pre-diploma practice. He also answered the students' questions. The practice manager introduced students with the work plan and the reporting documents: the introduction, work schedule and the diary.

At the Department of Chemistry on May 11, 2021, the 4th year students defended their *pre-diploma practice* before the members of the approved commission. Participants: head of the Department, Candidate of Chemical Sciences, Associate Professor E. E. Kopishev, members of the commission are Candidate of Chemical Sciences, Professor T. T. Mashan, Candidates of Chemical Sciences, Associate professors Beisembayeva G. A., Tazhkenova G. K., A. S. Uali, supervisor of the practice Doctor of Chemical Sciences Professor S. B. Rakhmadiyeva, Candidates of Chemical Sciences, Associate Professors Zh. E. Dzhakupova, L. A. Kusepova, G. Zh. Baysalova, R. M. Shlyapov, Candidate of Chemical Sciences, senior lecturer Tursynova A. G., PhD, senior lecturer M. Shaimardan, PhD K. S. Tosmaganbetova, practice manager – senior lecturer L. S. Omarova, and 4th year students - 15.

Students gave reports to the commission on their work completed during the period of 08.03.2021- 08.05.2021 through the platform of Microsoft Teams.





**Сурет-2: Ерітінділердегі болаттың анодты поляризация қисықтары:  $H_2SO_4$  (0,5 M) (1-қатар);  $H_2SO_4$  (0,5 M) + 0,5% калий хроматы( 2-қатар); NaCl 3% (3 қатар)**



During the pre-diploma internship, students completed the following tasks:

Zhangaliyev Dastan, Maral Nurbol, Orynbasar Aigerim, Nurmakhan Akerke, Tolendina Madina, Ni Alexander were trained in compliance with strict quarantine measures at the workplace. Students got acquainted with new devices and learned the principles of working with them.

Nurmakhan Akerke conducted a comprehensive study of the deposition of a copper template on a polyethylene terephthalate (PET) template with the participation of AS and studied the influence of parameters such as pH, the number of repetitions of activation of the polymer template, and the duration of deposition to determine the optimal precipitation conditions. When studying the effect of the pH of the solution (in the range of 3.0-6.0) on the reduction of copper in the presence of ascorbic acid, samples of composites were obtained, the structure of which was studied by modern physical and chemical methods. I got acquainted with the technique of working on the KFC machine.

Zhangaliyev Dastan studied the composition of non-ferrous and rare metals in the technogenic emissions of the Zhezkazgan copper smelter.

Orynbasar Aigerim determined the laws of Palladium(II) complexation in the system of a mixture of extractants. The concentration of metal in the aqueous phase was determined by atomic absorption spectroscopy, the optimal requirements for the extraction of palladium (II) from aqueous solutions by stearic acid melt were studied, and the composition of extracted palladium (II) compounds determined by solid-phase spectroscopy was determined. A method for preparing solid samples has been developed, and the extraction of palladium (II) from a solid extract by extraction solid-phase spectroscopy has been practically determined.

Tolendina Madina synthesized the biodegradable mineral hydroxyapatite.

Maral Nurbol studied the methods of extraction of essential oils from different types of mint and their biological properties.

Alexandar Ni studied the phytochemical properties of the plant *Circaea lutetiana* L. In the course of the work, the qualitative composition in the roots, stems, and leaves of the plant was studied and its biologically active components were determined. This work is the first of its kind to identify compounds not only from the aboveground parts of the plant *Circaea lutetiana* L, but also from the root of the plant. The work is also notable for the fact that along with the definition of polyphenolic compounds, which include tannins, flavonoids, and other phenocarboxylic acids, this work also considers the definition of the spectrum of amino acids and carbohydrates. Obtaining extracts of roots, stems, and leaves and analyzing them will allow them to be used for further use as BAS.

The rest of the students, due to the epidemiological situation, visited the workplaces during the permitted time, performed online tasks with their scientific supervisors, and conducted research on the topic of their thesis. We worked with literature. Students started studying their theses using foreign and domestic scientific bases. After the report, the members of the commission exchanged views with the students and asked questions.

At the end of the pre-graduate practice, the members of the commission commented on the work of each student and gave appropriate grades.



Figure 1. Nurmakhan Akerke-Measurement of gas permeability of track membranes by manometric method .

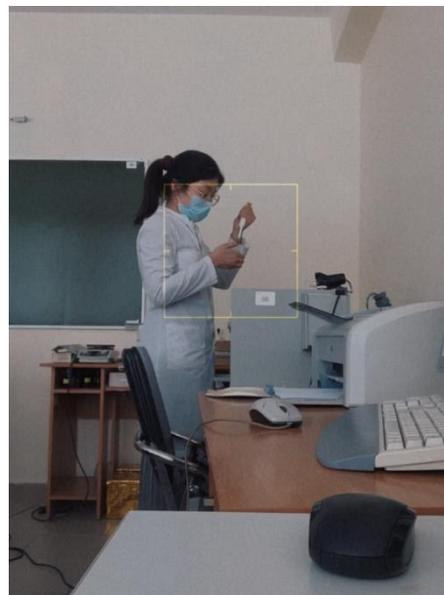


Figure -2. Orynbasar Aigerim-Determination of the concentration of metals in the aqueous phase by atomic absorption spectroscopy



Figure-3. Mural Nurbol - Method of extraction and analysis of mint essential oils.



Figure 4. Alexander Ni studies the phytochemical properties of the plant *Circaea lutetiana* L.