

the concept of "corruption", which do not contradict, but complement each other: traditional or normative-value; modernist or classical; economic or market-centric; revisionist or functional; behavioral or socio-psychological; institutional or state-administrative; political. It is also advisable to consider the so-called official-legal approach (legislative or legal) to the interpretation of the concept of «corruption», which is based on international documents [1, с. 78].

In conclusion, it can be noted that considering the multifacetedness of such a phenomenon as corruption, it will be advisable to continue the study of this phenomenon.

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COMPOSITE COPPER–ORGANIC MICROPOWDERS

Previously, we investigated copper micropowders obtained by electrochemical and chemical methods in the presence of acrylic acid [1, p.51–58]. The presence of an organic component in the powders was determined and it has been proved that it is a π -complex Cu^+ with an anionic form of acrylic acid. Microbiological tests [2, p.47–51] confirmed the presence of bactericidal activity in such powders, and it was higher than in the copper powder. According to the results of quantum-chemical modeling [3, p.148–151] it can be stated that complex structures with ions of Cuprum can also be formed by maleic acid. The purpose of this work was to obtain and study the composition, structure and thermal properties of copper micropowders, modified by the compounds of maleic acid. The following experimental techniques were used in

the process of work: preparative synthesis and optical microscopy for the study of microstructure of the powders; complexometry for determining the content of Cuprum; thermal analysis for defining the behavior of samples of the powders during heating, as well as sedimentation analysis in order to determine their granulometric composition.

The first stage of the work was the synthesis of copper-organic micropowders. The procedure of chemical recovery of Cu^{2+} ions by metal zinc powder was used. The course of the process is complex and multi-stage, depending on the ratio of quantities of reagents, temperature and pH. The gradual change in the color of the solution from blue to green indicates the restoration of Cu^{2+} ions to Cu^+ , and the appearance of the precipitate confirms its non-metallic character.

Microscopic studies show that the obtained powders consist of small rounded micro-size particles, which create freeform agglomerates. The results of quantitative analysis of the synthesized micropowders for the content of Cuprum showed that its total content varied within $38 \div 61\%$.

Useful information concerning the composition of synthesized powders and their behavior under conditions of temperature change can be obtained from the results of thermal analysis. The quantitative ratios of fixed thermal effects in the powders depended on the conditions of their synthesis. All samples are characterized by exothermic maximums near 300°C , associated with the destruction of the organic component. Small endothermic minimums in the 200°C zone were also recorded, which can be explained by the presence of water in the composition of the complexes. Dispersion analysis was applied for determining the granulometric composition of the obtained materials. It is shown that depending on the conditions of synthesis, the radius of particles decreases from $8.8\ \mu\text{m}$ ($\text{pH} = 0.7$) to $4.7\ \mu\text{m}$ ($\text{pH} = 2.0$).

Thus, the method of preparative synthesis from the solutions of cuprum (II) sulfate of various acidity in the presence of maleic acid has been used for the synthesis of copper microdisperse powders of composite structure containing bound water and the organic component. The obtained materials are promising for further microbiological studies.

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CLICK CHEMISTRY

Usually, the process of discovering new drugs based on natural secondary metabolites is very slow and expensive. Even with the appearance of combinatorial chemistry and high-throughput screening, the synthesis of substances depends on the reliability of individual reactions for constructing a new molecular framework. However, at the beginning of the 21st century, a new age of synthesis began, which was click chemistry.

Click chemistry is a set of chemical reactions adapted to produce quickly and reliably a variety of chemicals by combining a few small elements. This is a concept that uses the most efficient and convenient methods in order to create new molecules that are eco-friendly, safe and highly effective. Each click-reaction is carried out with virtually no by-products. All or almost all atoms that were in the original molecules are included in the final molecule that we assemble. Therefore, there is no waste. Barry Sharpless was the first to invent this concept – "He was the founding father" [5]. Sharpless suggested using only the reagents that were easily accessible and insensitive to oxygen and water. The scientist developed several reactions that meet the requirements of this concept [4; 5]. *Using a Cu(I) salt catalyst makes*