Acta et Commentationes, Exact and Natural Sciences ISSN: 2537-6284
Volume 2(14), 2022, Pages 132–134 E-ISSN: 2587-3644
DOI: 10.36120/2587-3644.v14i2.132-134

Book Review

Study Of Useful Properties Of Some Coordination Compounds Containing Oximic Ligands, by E. Coropceanu, A. Ciloci, A. Ştefîrţă, I. Bulhac, ISBN 978-3-9402237-24-8, 266 p.

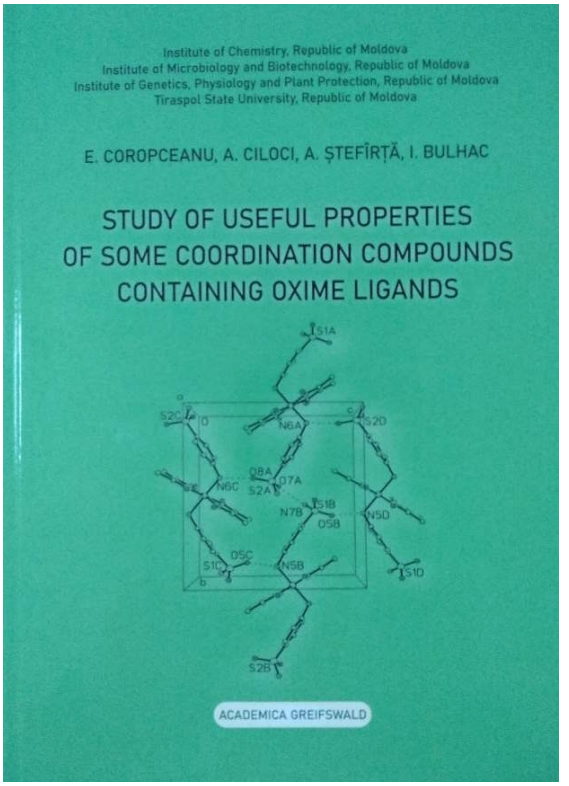
The monograph "STUDY OF USEFUL PROPERTIES OF SOME COORDINATION COMPOUNDS CONTAINING OXIMIC LIGANDS", ISBN 978-3-9402237-24-8, presents a study in the field of synthesis, determination of the composition and structure of new coordination compounds based on ligands with various functional groups, as well as the determination of the fields of practical utility of the new substances. The work includes four chapters on 266 pages.

In chapter I. AN OVERVIEW OF THE PERSPECTIVES OF USING COORDINATION COMPOUNDS BASED ON DIOXIME LIGANDS, studies in the field worldwide are described, which served as the basis for initiating the cycle of studies described by the authors. The most important research directions regarding the class of analyzed compounds and the properties that served to establish areas of practical use are reflected. The evolution of research in the field is briefly described, both from a chronological point of view and the increase in the degree of complexity of the molecules synthesized based on the ligands used for the assembly of metal-organic molecules.

In chapter II. THE INFLUENCE OF DIOXIME LIGANDS BASED COMPLEXES ON THE BIOLOGICAL ACTIVITY OF SOME ENZYME-PRODUCING FUNGI STRAINS describes the studies related to the use of coordinative compounds as an addition to the cultivation medium of some enzyme-producing microorganisms. As enzymes are of particular interest for the food, pharmaceutical and some branches of the agro-industrial complex, it is important to develop new innovative technologies to increase productivity and increase the profitability of economic processes. Studies have been carried out on the genera of fungi *Aspergillus, Rhizopus, Penicillium, Trichoderma, Fusarium*, etc., in which significant increases in enzyme genetic activity, biomass growth and reduction of the technological cycle have been recorded, a fact that increases the yield of cultivation methods and obtaining biologically active substances. Most of the results listed are patented. A number of inventions have been awarded at international salons with gold medals and other trophies.

In chapter III. THE EFFECT OF SOME COORDINATION COMPOUNDS ON PLANT PHYSIOLOGICAL PROCESSES UNDER THE IMPACT OF ECOLOGICAL STRESS describes the influence of new coordination compounds on physiological processes in higher crop plants. It was established that the analyzed compounds possess properties of bioactive substances with a positive impact on the growth, development, increasing resistance and productivity of plants. The treatment of the seeds for sowing and the leaf apparatus during the vegetation, with aqueous solutions of some compositions conditions the optimization of the functional state, growth and development of the plants of some agricultural crops, both in favorable humidity conditions and in a moderate water deficit. The coordinative compounds used have the property of activating vital processes already at the initial stages of individual plant development, stimulate the growth of the root system and the shoot.

In conditions of low humidity, some compositions with coordinating compounds have an influence of reducing the effect of drought on the formation of the assimilative apparatus, the accumulation of biomass and the harvest of plants. The use of physiologically active substances ensures a stabilization of the plant production process. Compositions based on coordinating compounds possess antioxidant properties that are manifested in increasing the antioxidant protection capacity of plants.



In chapter IV. PERSPECTIVES OF USING COORDINATION COMPOUNDS BASED ON DIOXIME LIGANDS IN INDUSTRIAL PROCESSES the fields of perspective for the use of new coordination compounds are presented. The compounds of some transition metals based on α-dioximes show different useful properties: catalysts of different industrial processes; compounds

with dual function properties of catalysts and stabilizers in polyurethane production reactions; inhibitors of steel corrosion processes in the aquatic environment; materials with dielectric properties, etc.

The monograph is valuable in that it describes the achievements of the schools of coordinative chemistry, microbiology and plant physiology in the Republic of Moldova in the last three decades. The work is elaborated in an academic style, presenting scientific results obtained through the use of high-performance research equipment.

The monograph is recommended for students, master's students, doctoral students, but also for the general public of readers, who show interest in the subject addressed.

Received: June 21, 2022 *Accepted: October 28, 2022*

(Aluchi Nicolai) Ion Creangă State Pedagogical University, 1 Ion Creangă St., Chişinău, Republic of Moldova