

OPINION

by Dr. Vasil Valkov Popov, professor at IBER-BAN

of a dissertation for awarding the educational and scientific degree "doctor" in the field of higher education 4. Natural sciences, mathematics and informatics, professional field 4.2. Chemical sciences, Scientific specialty Organic chemistry

Author: Desislava Plamenova Gerginova

Topic: NMR METABOLOMICS OF BEE HONEY AND WINE

Scientific supervisors: Prof. Svetlana Simova (IOC CP - BAS) and Ch. assistant professor Dr. Yavor Mitrev (IOC CP - BAS)

1. General presentation of the procedure and the doctoral student

The set of materials presented by Desislava Plamenova Gerginova is in accordance with the Regulations for the Development of the Academic Staff of the IOC CP - BAS, and meets the criteria of the IOC CP - BAS for the acquisition of the scientific and educational degree "doctor".

D. Gerginova graduated from the Professional High School of Ecology and Biotechnology "Prof. Dr. Asen Zlatarov". He received a bachelor's degree at the University of Chemical Technology and Metallurgy and a master's degree at Sofia University "St. Kliment Ohridski" with specialization in the field of spectral and chromatographic methods of analysis. Doctoral studies at the Institute of Organic Chemistry with the Center for Phytochemistry - BAS is a logical continuation of professional development and is testimony to the targeted interest in modern NMR techniques for quantitative analysis.

2. Relevance of the topic

The research and results presented in the dissertation are relevant in the context of contemporary problems related to food fraud, which represent a serious problem for the economy, industry and human health.

3. Knowing the problem

The statistical methods used for the analysis of NMR spectroscopic data, widely used in chemometrics, are well presented in the literature review and testify to the good preparation of the doctoral student in this field.

4. Research methodology

In "chapter 4. Experimental part" details are given on the way of applying the individual chemometric methods, which enables an objective evaluation of the obtained results and their interpretation.

5. Characterization and evaluation of the dissertation work and contributions

The dissertation is written on a total of 235 pages and 11 online Appendices. It is well structured in 6 chapters. In the Introduction chapter, the relevance of the research is justified and the main goal and the tasks related to its achievement are formulated. No specifically worded contributions. Instead, the Conclusion Chapter summarizes the main results in the form of conclusions. For the most part, they can

be characterized as scientific and applied contributions related to the creation of new research methods and obtaining and proving new facts. The dissertation is well written and structured. Special mention should be made of the rich illustrative material consisting of 84 figures, 3 diagrams and 26 tables.

6. Evaluation of the publications and personal contribution of the doctoral student

The doctoral student has attached 4 publications (3 in English, 1 in Bulgarian). They present essential parts of the dissertation. In three of the publications, D. Gerginova is the first author, a testimony of the exceptional personal merit in the conducted dissertation research, obtained results and formulated contributions. Two of these publications are in Q1 (Scopus) and one in Q4 (Scopus). The level of submitted publications exceeds the minimum requirements according to the rules. Evidence of their importance is also the significant number of noticed citations (15). A list of numerous (20) participations in scientific conferences (reports and posters) on the topic of the dissertation is also presented.

The essential critical remarks that were made by me during the approbation have been taken into account.

7. Abstract


The abstract corresponds to the content of the dissertation work and reflects the results obtained, their analysis and the conclusions drawn. It concludes with a list of dissertation publications, along with noted citations and contributions to scholarly forums.

CONCLUSION

The dissertation contains scientific, scientific-applied results that represent an original contribution to science and meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of the LDASRB and the Regulations for the Implementation of the LDASRB of the Bulgarian Academy of Sciences. The presented materials and dissertation results fully comply with the specific requirements of the Regulations of IOC CP - BAS for the application of LDASRB.

The dissertation shows that the doctoral student Desislava Plamenova Gerginova possesses in-depth theoretical knowledge and skills in the professional field of Chemical Sciences, scientific specialty Organic Chemistry, demonstrating qualities and skills for independent conduct of scientific research. Due to the above, I confidently give my positive assessment of the conducted research, represented by the above-examined dissertation work, abstract, achieved results and contributions, and I propose to the honorable scientific jury to award the educational and scientific degree "doctor" to Desislava Plamenova Gerginova in the field of higher education: 4. Natural sciences, mathematics and informatics, professional direction 4.2. Chemical sciences, Scientific specialty Organic chemistry.

19. 08. 2022

Prepared the opinion: 

(Prof. Dr. Vasil Popov)