

# OPINION

by **Dr. Romyana Ivanova Bakalska,**

**Associate Professor at Plovdiv University "Paisii Hilendarski"**

of the materials submitted for participation in the competition

to occupy the academic position of "**Associate Professor**"

**of Plovdiv University "Paisii Hilendarski"**

in: higher education field 4 Natural sciences, mathematics and informatics

professional direction 4.2 *Chemical Sciences, Science Specialty Organic Chemistry (Chromatographic Analysis)*

In the "Associate Professor" competition, announced in the State Gazette, no. 39 of 02.05.2023 and on the website of Plovdiv University "Paisii Hilendarski" for the needs of the Organic Chemistry Department at the Faculty of Chemistry, as the **only candidate** participated Chief Assistant Professor **Dimitar Georgiev Bojilov**, PhD, from the Organic Chemistry Department, Faculty of Chemistry, "Paisii Hilendarski" University.

## **1. General presentation of the procedure and the candidate**

By order No. PD-21-1425 dated 30.06.2023 of the Rector of the Plovdiv University "Paisii Hilendarski" (PU), I have been appointed as a member of the scientific jury to ensure a procedure for selecting an "**Associate Professor**" **at the PU** in the field of higher education 4 Natural sciences, mathematics and informatics, professional direction **Organic Chemistry (Chromatographic Analysis)** for the needs of the Department of Organic Chemistry at the Faculty of Chemistry of the PU. The presented by Dr. Dimitar Bojilov, a set of materials on paper and electronic media is in accordance with Article 36 (1) of the Regulations for the Development of the Academic Staff of the PU, and includes all the required documents.

To participate in the competition, the candidate, Dr. Bojilov, submitted a total of **35** scientific articles. The dissertation for the acquisition of the degree "Doctor" is based on 3 articles, but it is not mentioned which articles were used in the competition for the appointment of the administrative position "Chief Assistant". Pursuant to the ZRASRB, in fulfillment of the national minimum requirements for indicators B and D, **24** articles published in publications that are referenced and indexed in the world-renowned *Web of Science (WOS)* and *Scopus*

databases, 6 of which are with quartile Q1, 2 no. are with Q2, 4 pcs. are with Q3 and 12 pcs. are with Q4. The remaining 11 articles were published in publications not referred to by the above-mentioned databases. All scientific publications are co-authored, which is usual for the chemical field, and in 5 of the publications the candidate is the first author.

**Brief biographical data.** Dimitar Bojilov graduated from two higher educations - the University of Food Technology in 2004, majoring in "Meat and Milk Technology", and then in 2008, majoring in "Computer Chemistry" at the University of Plovdiv. In the following year, he studied in the Master's program "Organic Chemistry" at the University of Plovdiv and received the Master's degree in organic chemistry. In the period 2012-2015, he was a doctoral student of independent training in the Department of "Organic Chemistry" of the Faculty of Chemistry of the PU. His dissertation research work is related to phytochemical studies of biologically active secondary metabolites. Successfully mastered high-performance liquid chromatography (HPLC) equipment with a photodiode matrix detector, fluorescence detector, UHPLC-MS, gas chromatography (GC-FIT, GC-MS) and mass spectral methods, and is currently the specialist in chromatographic methods in our department. He successfully defended his dissertation work in 2017, and since then he has been working as a Chief Assistant Professor in the same department. Dr. Bojilov is the head of the postgraduate program in high-performance liquid chromatography.

### **1. General description of the applicant's activity**

Dr. Dimitar Bojilov is distinguished by his intensive teaching and research activities.

**Evaluation of educational and pedagogical activities.** Chief Assistant Bojilov has 13 years of teaching experience in the Department of Organic Chemistry. He conducts lecture courses and exercises in Bioorganic Chemistry, Modern Chromatographic Methods, Chromatographic Analysis, Analysis of Medicinal Substances (for undergraduate students); Chromatographic methods in pharmaceutical analysis, Mass spectrometry and UHPLC-MS, specialized courses in HPLC-DAD-MS (for students and PhD students). Dr. Bojilov is the academic supervisor or co-supervisor of 13 graduates who have successfully defended their diplomas. Sharing my personal impressions, colleague Bojilov gives the impression of a responsible young man, an extremely strict and demanding teacher.

**Evaluation of the candidate's scientific and scientific-applied activity.** Dr. Bojilov's research work is in the field of phytochemical studies of secondary metabolites with biological

activity by high-performance liquid chromatography (HPLC), gas chromatography (GC-FIT, GC-MS) and mass spectral methods. He also studies the antioxidant activity of medicinal plant extracts and foods. Dr. Bojilov is the lead researcher of a successfully completed scientific project funded by the Scientific Research Institute at the PU "P. Hilendarski" in 2021-22, as well as a member of the scientific teams of another 8 projects over the years. He is a member of the organizing committees of the scientific conferences for students and doctoral students "Challenges in Chemistry" in 2013, 2014 and 2015.

**Contributions (scientific, applied science, applied) and citations.** Scientific achievements are generally contributions to the enrichment, expansion and deepening of knowledge in the researched field. The results of these studies are important from the point of view of the application of the investigated plant species both in traditional medicine and in the pharmaceutical, cosmetic and food industries. The scientific and scientific-applied contributions of the papers can be grouped in the following areas:

- Development of a chromatographic “*fingerprint*” profile of the **polyphenolic composition** of a number of medicinal plants and three types of lettuce. The chromatographic profile is of utmost importance in the development of methods for the analysis of foods, medicinal plants and herbal medicines.
- Investigation of the **chemical composition/antimicrobial/antioxidant activity** of essential oils from medicinal plants (*Helichrysum italicum*, *Gleditsia triacanthos L*, *Achillea millefolium*, *Nepeta transcaucasica* and *Nepeta cataria*, etc.) Antioxidant activity of 7 types of wild edible mushrooms was also investigated.
- Combined techniques such as HPLC-PDA, UHPLC-MS and surrogate standards have been applied to identify polyphenols in unexplored herbs.
- The developments have scientific and applied contributions in HPLC-MS/MS for identification and elucidation of the structure of biologically active compounds.
- Mass-spectral analysis of differently substituted 2-phenylethylamines and their cyclic analogs, as well as tryptamine hybrid molecules with different prophenic residues, was performed.
- The in vitro biological activity of the fractionated polyphenolic composition of *C. Botrys* was investigated; of newly synthesized biofunctional hybrid molecules, as well as 1,2,3,4-tetrahydroisoquinoline sulfonamide derivatives, which have shown significant antioxidant, anti-inflammatory activity and anti-arthritis activity.

The total number of observed citations for the **24** publications is **130**, of which **103** are in *Scopus* and/or *Web of Science* databases, and **16** in specialized journals, **8** in foreign dissertations and **3** in foreign Master's theses.

### **3. Critical remarks and recommendations**

I have no critical remarks on the materials presented.

### **CONCLUSION**

The documents and materials presented by the Chief assistant professor Dimitar Bojilov, PhD, **meets all the requirements** of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of ZRASRB and the relevant Regulations of the PU "Paisii Hilendarski". The required number of scientific publications and contributions in them, as well as the applicant's teaching experience are present. I am convinced that with his overall scientific work and teaching experience, Dr. Dimitar Bojilov meets the criteria for holding the position of Associate Professor at the PU. Dr. Dimitar Bojilov's scientific and teaching qualifications are **unquestionable**.

The results achieved by Dr. Dimitar Bojilov in the educational and research activities (with a total of **626** points from the scientometric indicators) **exceed** the minimum national and additional requirements of the Faculty of Chemistry, adopted in connection with the Regulations of the PU for the application of the ZRASRB.

After familiarizing myself with the materials and scientific works presented in the competition, analyzing their significance and the scientific, scientific-applied and applied contributions contained in them, I find it reasonable to give my **positive** assessment and **to recommend** the Scientific Jury to prepare a report-proposal to the Faculty Council of the Faculty of Chemistry for the selection of Ch. assistant professor, **Dr. Dimitar Bojilov**, in the academic position of "Associate Professor" at PU "Paisiy Hilendarski" in: field of higher education 4 Natural sciences, mathematics and informatics, professional direction 4.2. Chemical Sciences, scientific specialty Organic Chemistry (Chromatographic Analysis).

20.08.2023 г.

**Prepared the opinion: .....**

**(Dr. Romyana Bakalska, Assoc. Prof.)**