REVIEW

by PhD Dimcho Zahariev Ivanov – Professor at Konstantin Preslavsky University of Shumen
regarding the materials submitted for participation in a competition for the academic position of
Associate Professor
at Paisiy Hilendarski University of Plovdiv
in the Field of Higher Education: 4. Natural Sciences, Mathematics, and Informatics,
Professional Field: 4.3. Biological Sciences (Botany)

In the competition to occupy the academic position of Professor, announced in the State Gazette, No. 96 of 11.11.2025, and on the website of the Paisiy Hilendarski University of Plovdiv for the needs of the Department of Botany and Biological Education at the Faculty of Biology, participates as a candidate, Chief Assistant Professor Krasimir Tihomirov Todorov, PhD, from the Paisiy Hilendarski University of Plovdiv.

1. General presentation of the received materials

By order No. RD-22-39 of 09.01.2026 of the Rector of the Paisiy Hilendarski University of Plovdiv, I have been appointed as a member of the scientific jury in a competition for the academic position of Associate Professor in the field of Higher Education: 4. Natural Sciences, Mathematics and Informatics, Professional Field: 4.3. Biological Sciences (Botany), announced for the needs of the Department of Botany and Biological Education at the Faculty of Biology. The only candidate who submitted documents for participation in the announced competition is Chief Assistant Professor Krasimir Tihomirov Todorov, PhD, from the Paisiy Hilendarski University of Plovdiv.

The set of materials on paper presented by Chief Assistant Professor Krasimir Todorov, PhD, is in accordance with the Regulations for the Development of the Academic Staff of the University of Plovdiv and includes the following documents:

- Application form to the Rector for admission to participate in the competition;
- CV in European format;
- Diploma with an application for higher education with acquired Master Drgree (original and copy);
- Diploma for Doctor of Philosophy Educational and Scientific Degree (original and copy);
- List of scientific works;
- Scientific works (copies of scientific publications);
- List of citations;
- Certificate of compliance with minimum national and additional faculty requirements;

- Annotations of the materials under Art. 76 of PRASPU (in Bulgarian and foreign language) with extended habilitation report;
- Self-assessment of contributions;
- Declaration of originality and authenticity of the attached documents;
- Certificate of work experience;
- Documents for academic work;
- Documents for research work;
- Documents according to the additional requirements of the Faculty of Biology;
- Other documents (list of scientific works used to hold the position of Chief Assistant Professor).

The candidate, Chief Assistant Professor, Krasimir Todorov, PhD, has submitted a total of 23 scientific works, 3 teaching aids and a list of 5 research papers. A list of 6 scientific works used to hold the academic position of Chief Assistant Professor is also attached, which do not repeat the scientific works in this competition. 19 scientific papers that are outside the dissertation are accepted for review, and 3 teaching aids and 5 research projects are taken into account in the final assessment. Four scientific papers on the dissertation are not reviewed. The distribution of scientific works by relevant headings, in the country and abroad, is as follows: 4 scientific publications in scientific journals, referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus), which correspond to the habilitation work and 15 scientific publications in scientific journals, referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus), which are outside the habilitation work. A Certificate of Utility Model with reg. No. 4924U1 dated 12.06.2024 from the Patent Office of the Republic of Bulgaria and a Patent Application with entry No. 113914/12.06.2024, as well as for the benefit of them, have been submitted.

Separately, references are also presented for: participation in two national educational projects, scientific supervision of 6 successfully defended diplomas and 14 participations in scientific forums.

2. Brief biographical data

Chief Assistant Professor Krasimir Todorov, PhD, graduated in Ecology and Environmental Protection, with a Bachelor's degree and received a professional qualification as an ecologist in 2011 at the Paisiy Hilendarski University of Plovdiv. In 2013, he received a Master's degree in Medicinal and Essential Plants, with a professional qualification as a botanist in medicinal and essential plants at the same university. In 2018, he received a Doctor of Philosophy Educational and Scientific Degree in the field of Higher Education: 4. Natural Sciences, Mathematics, and Informatics,

Professional Field: 4.3. Biological Sciences (Botany) with a dissertation topic of Biosystematic Study of the Genus *Carduus* L. (Asteraceae) in Bulgaria. His abilities led him to receive an offer to work as an assistant at the University of Plovdiv after receiving his Master's degree. He teaches the disciplines: Plant Anatomy and Morphology and Plant Ecology. For several months he worked as a biologist and was responsible for the preparation of laboratory exercises and the preparation of a herbarium collection. In 2018 he was elected to the academic position of Chief Assistant, which he holds to the present moment. He teaches lecture courses in the disciplines: Botany and Plant Ecology; exercises and fieldwork in the disciplines: Botany, Plant Anatomy and Morphology, Plant Ecology, Hydrobiology, Pharmacognosy. From 01.09.2025 to the present he is also a Chief Assistant at the Medical University of Plovdiv, Faculty of Pharmacy, Department of Bioorganic Chemistry.

3. General characteristics of the candidate's activities

Evaluation of teaching and learning activities

The teaching experience of Chief Assistant Professor Krasimir Todorov, PhD, is 12 years and is sufficient to hold the academic position of Associate Professor by more than twice the specified threshold of 5 years in the additional requirements of the Faculty of Biology of the University of Plovdiv. The teaching workload for the last 3 years includes lecture courses, laboratory exercises and conducting field practices. The lecture courses are in academic disciplines in the field of the competition: Botany, Anatomy and Morphology of Plants, Ecology of Plants and Hydrobiology. The variety of classes allows the candidate to fully develop as a university lecturer. He is a co-author of 3 teaching aids: 1. Teaching aid on Botany (Pharmaceutical Botany), 2. Teaching aid on Anatomy and Morphology of Plants (Pharmaceutical Botany Part I) and 3. Teaching aid on Systematics of Plants (Pharmaceutical Botany Part II). From 2017 to 2025, he was the scientific supervisor of six successfully defended diplomas in the field of the competition, with at least five required.

Evaluation of scientific and applied scientific activities

The scientific activity of Chief Assistant Professor Krasimir Todorov, PhD, is reflected in 19 scientific works, which are outside the dissertation for the acquisition of the Doctor of Philosophy Educational and Scientific Degree. Publications in scientific journals, refereed and indexed in world-renowned databases of scientific information (Web of Science and Scopus), equivalent to a habilitation thesis, are 4 in number in scientific journals with Q1. They provide 100 points for the group of indicators B. Additionally, 15 scientific articles in scientific journals, refereed and indexed in world-renowned databases of scientific information (Web of Science and Scopus), which provide 218 points for the group of indicators D, are applied. Of these, 3 in number are in scientific journals with Q1, 1 is in a scientific journal with Q2, 1 is in a scientific journal with Q3, 9 are in scientific

journals with Q4 and 1 is in a scientific journal in Web of Science without IF. The number of publications in high quartile journals (Q1 and Q2) is very impressive. The total number of points under indicator group D is 258 due to a utility model certificate and a patent application.

By place of publication, out of a total of 19 scientific publications, 8 were published in international and 11 in national scientific journals. All publications are in English, which is an important condition for their visibility and citation by the international scientific community.

All scientific articles are co-authored, with the candidate being the first author in 1, second author in 2, third author in 3, and fourth or subsequent author in 13 of the joint publications, with a total number of authors ranging from 3 to 18, with most articles having a large number of authors. This is very good evidence of the ability to work in a team, which is highly valued by the international scientific community.

In the period from 2018 to the present, Chief Assistant Professor Krasimir Todorov, PhD, has participated in a total of 7 national research or educational projects. The duration of the projects is from two to five years. This exceeds the requirement that the candidate has participated in at least 2 scientific projects.

The results of the research activity have been popularized through 10 participations in international and 4 participations in national scientific forums. The predominant number of participations in international scientific forums testifies to a good selection in the choice of forum for popularization of the achieved scientific results.

Contributions (scientific, applied science, applied) and citations

As a result of the research activities of Chief Assistant Professor Krasimir Todorov, PhD, 29 scientific, 6 applied scientific and 2 methodological contributions can be formulated. All contributions are of a confirmatory nature.

The scientific contributions are in several areas: Floristic: 1. The diversity of medicinal plants on the territory of Dospat Municipality has been studied [G7.1]. 2. The information on the diversity of wild edible mushrooms on the territory of Strandzha and the Southern Black Sea Coast has been systematized [G7.7]. 3. The information on the diversity of medicinal plants on the territory of Strandzha and the Southern Black Sea Coast has been systematized [G7.8]. 4. The diversity of herbaceous plant species on the territory of the village of Mugla (Western Rhodopes) has been inventoried [G7.9]. 5. The diversity of medicinal plants on the territory of the Canyon of the Waterfalls Eco-trail (Soskovcheto Reserve, Western Rhodopes) has been inventoried [G7.10]. 6. The flora of 14 railway stations in the Upper Thracian Lowland has been studied [G7.12]. Anatomical-morphological: 1. A comparative anatomical study of the leaf epidermis of *Betonica bulgarica*, *Micromeria frivaldszkyana*, *M. dalmatica*, and *Clinopodium vulgare* was conducted [G7.4, G7.11 and

G7.15]. 2. A comparative anatomical study of the leaf and stem epidermis of 2 species of the genus *Marrubium* was conducted: *M. friwaldskyanum* and *M. peregrinum* [G7.13]. Ecological: 1. The species with conservation status among the medicinal plants in the Dospat Municipality were identified [G7.1]. 2. The ecological-trophic structure of wild edible mushrooms on the territory of Strandzha and the Southern Black Sea coast was assessed and a list of species with conservation status was presented [G7.7]. 3. Species with conservation status and Balkan endemics have been identified among the medicinal plants on the territory of Strandzha and the Southern Black Sea coast [G7.8]. 4. Species with conservation status have been identified among the herbaceous plant species on the territory of the village of Mugla (Western Rhodopes) [G7.9]. 5. Species with conservation status have been identified among the medicinal plants on the territory of the Canyon of the Waterfalls Eco-trail (Soskovcheto Reserve, Western Rhodopes) [G7.10]. 6. Alien and adventitious plant species were identified in the flora of 14 railway stations in the Upper Thracian Lowland. It has been confirmed that the railway network plays an important role in the penetration and further settlement of alien species in the Bulgarian flora [D7.12]. 7. Monitoring of the protected plant species *Pancratium maritimum*, *Calluna vulgaris*, *Daphne pontica*, *Ilex colchica*, *Rhododendron ponticum*, *Mespilus germanica*, and *Taxus baccata* was carried out, as well as the invasive species *Amorpha fruticosa* in two protected areas in the Strandzha Nature Park: Marina Reka and Silistar, and measures for their conservation were indicated [D7.14]. Phytochemical and biological: 1. The metabolic composition of the species *Marrubium friwaldskyanum* and *M. peregrinum* was studied [B4.3]. 2. Antioxidant potential and influence on the reactivity of the smooth muscle of the stomach of rats of aqueous extracts of *M. friwaldskyanum* and *M. peregrinum* were established [D7.2]. 3. Selective antitumor activity of extracts of *M. friwaldskyanum* against colorectal adenocarcinoma HT-29 and cervical adenocarcinoma HeLa was established [B4.4]. 4. Antibacterial activity of extracts of *M. friwaldskyanum* against *Escherichia coli* and *Bacillus cereus* was proven [B4.4]. 5. The subchronic toxicity of methanol extract of *Micromeria frivaldszkyana* and its influence on cognitive functions in rats was assessed [D7.3]. 6. The composition of the essential oil of *Betonica bulgarica* was established [D7.4]. 7. The content of 15 trace elements in *Betonica bulgarica* has been determined [G7.4]. 8. It has been established that the essential oils of *Centaurea thracica* have a high content of oleic and linoleic acid, tocopherols and phospholipids [G7.5]. 9. The composition of the essential oils of *Betonica officinalis* and *Stachys sylvatica* has been studied [G7.6]. 10. The content and composition of sugars, organic acids, total polyphenols and total flavonoids in the aerial parts of *Micromeria frivaldszkyana* have been determined [B4.1]. 11. The antimicrobial activity of *M. frivaldszkyana* against *Listeria monocytogenes* ATCC 19111 has been established [B4.1]. 12. It has been established that *M. frivaldszkyana* is a good source of natural antioxidants, and in particular of rosmarinic acid [B4.1]. 13. The metabolic content of a methanol extract of *M. frivaldszkyana* was

studied [B4.2]. Molecular genetics: 1. A molecular genetic study of *Micromeria dalmatica* and *Clinopodium vulgare* was conducted based on sequences in the ITS1 and tRNA-Leu regions. A high degree of identity between the sequences was found [D7.15].

The scientific and applied contributions are as follows: 1. Anti-inflammatory potential of methanol extract of *Micromeria frivaldszkyana* has been established, determining the possible application of the plant as a phytotherapeutic agent [B4.2]. 2. The unique tissue-specific compounds and important bioactivities make *Marrubium friwaldskyanum* and *M. peregrinum* suitable for application in the pharmaceutical field [B4.3]. 3. The established antioxidant potential of aqueous extracts of *M. friwaldskyanum* and *M. peregrinum* is the basis for future in vivo tests revealing the therapeutic potential of the plants [D7.2]. 4. The lack of toxicity of methanol extracts of *Micromeria frivaldszkyana* justifies further studies to identify active compounds, clarify the mechanisms of action of the observed effects on motility and evaluate the efficacy and safety of the extract in animal models of neurodegenerative diseases [D7.3]. 5. The high content of oleic and linoleic acid, tocopherols and phospholipids determines the nutritional and biological value of the oils extracted from *Centaurea thracica* and contributes to their potential use in various directions [D7.5]. 6. The established good antiatherogenic and antithrombogenic properties of *Centaurea thracica* oils, as well as the values of the PUFA/SFA ratio, confirm their possible nutritional and biological properties [D7.5].

The contributions in the field of teaching and learning are: 1. Scientific guidance of students, related to the development and successful defense of 6 diploma theses. 2. Co-authorship in the compilation of 3 teaching aids for the training in the disciplines: Botany (Pharmaceutical Botany), Anatomy and Morphology of Plants (Pharmaceutical Botany Part I) and Systematics of Plants (Pharmaceutical Botany Part II).

The contributions in the publications, equivalent to a habilitation thesis, are the following: 1. The content and composition of sugars, organic acids, total polyphenols and total flavonoids in the above-ground parts of *Micromeria frivaldszkyana* were determined [B4.1]. 2. The antimicrobial activity of *M. frivaldszkyana* against *Listeria monocytogenes* ATCC 19111 was determined [B4.1]. 3. It was determined that *M. frivaldszkyana* is a good source of natural antioxidants, in particular rosmarinic acid [B4.1]. 4. The metabolic content of methanol extract of *M. frivaldszkyana* was studied [B4.2]. 5. The anti-inflammatory potential of methanol extract of *Micromeria frivaldszkyana* was determined, determining the possible application of the plant as a phytotherapeutic agent [B4.2]. 6. The metabolic composition of the species *Marrubium friwaldskyanum* and *M. peregrinum* was studied [B4.3]. 7. Unique tissue-specific compounds and important bioactivities make *Marrubium friwaldskyanum* and *M. peregrinum* suitable for pharmaceutical applications [B4.3]. 8. Selective antitumor activity of *M. friwaldskyanum* extracts against colorectal adenocarcinoma HT-

29 and cervical adenocarcinoma HeLa has been demonstrated [B4.4]. 9. Antibacterial activity of *M. friwaldskyanum* extracts against *Escherichia coli* and *Bacillus cereus* has been demonstrated [B4.4].

The interest of other authors in the candidate's research topic is evidenced by the large number of **citations** in publications, referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus) - a total of 46. They provide 92 points under indicator group E. The citations are in the period 2017-2025 in 14 publications. By year, the citations are distributed as follows: 2017 - 1 citation, 2018 - 4 citations, 2019 - 0 citations, 2020 - 3 citations, 2021 - 9 citations, 2022 - 6 citations, 2023 - 6 citations, 2024 - 10 citations, 2025 - 7 citations. The majority of the citations (79 in number) are from foreign authors, which speaks of the relevance of the topic on an international scale. The large number of citations, including of a single publication (2 publications have 8 and 11 citations each), by research teams from other countries in such a short period is a clear indicator of the interest in the results of the candidate's research. The representativeness of the publications in which the articles of the citing authors have been published is evidenced by their distribution according to Scopus data:

Q1: Agronomy; Food Bioscience; Frontiers in Pharmacology; Industrial Crops and Products; International Journal of Molecular Sciences; International Journal of Nanomedicine; Journal of Ethnopharmacology; Journal of Molecular Liquids; Molecules; PeerJ; Pharmaceuticals; Plants; Pathogens;

Q2: Applied Sciences; Euphytica; Journal of Pharmacy & Pharmacognosy Research; Microscopy Research and Technique; Natural Product Research; Pharmacia; Separations;

Q3: Brazilian Journal of Pharmaceutical Sciences; Chemistry & Biodiversity; Comptes rendus de l'Académie bulgare des Sciences; Iranian Journal of Allergy Asthma and Immunology; Journal of Essential Oil Bearing Plants; Marmara Pharmaceutical Journal; ScienceRise: Pharmaceutical Science;

Q4: Bulgarian Chemical Communications; Caribbean Journal of Science; Cell and Tissue Biology; Ecologia Balkanica; Journal of Horticultural Science and Biotechnology.

Implementation activity

The results of the research activity are applied in the development of a Patch for healing skin wounds, for which a Certificate of Utility Model with reg. No. 4924U1 dated 12.06.2024 from the Patent Office of the Republic of Bulgaria and a Patent Application with entry No. 113914/12.06.2024 have been submitted. The patch includes a polymer mixture of polyvinyl alcohol and 3 BG 4924 U1 chitosan, glycerol and methanol extract of *Marrubium peregrinum* L. The results show increased cell proliferation and collagen synthesis compared to the control samples that do not contain extract of the medicinal plant.

Evaluation of administrative activities

The candidate has administrative experience with participation in the following activities (for some since 2018): participation in the editorial board of the Ecologia Balkanica journal as editor of the Plant Ecology, Plant Biology, Botany, Medicinal Plants section; participation in organizing 2 international forums; participation in committees for: preparation of a candidate student campaign; conducting state exams; attestation of the academic staff at the Faculty of Biology; organization and conduct of a student competition in 3 separate years; member of the Faculty Council of the Faculty of Biology and proto-collegiate head of the Botany and Biological Education Department. This goes beyond the requirement that the candidate have administrative experience (for the last 5 years) in at least one of the listed groups of activities

Everything mentioned so far exceeds the additional requirements of the Faculty of Biology of the University of Plovdiv for the development of the academic staff.

4. Assessment of the candidate's personal contribution

Due to the lack of separation protocols, it can be assumed that the candidate's personal contribution to the submitted publications and formulated contributions is equivalent to the contribution of the other authors.

5. Critical remarks and recommendations

As a result of reviewing the submitted materials for participation in the competition, I have no critical remarks towards the candidate. I recommend that he/she continue his/her active teaching, research and administrative activities.

6. Personal impressions

Since I do not know Chief Assistant Professor Krasimir Todorov, PhD, I cannot provide personal impressions of his work, beyond the materials submitted for the competition.

CONCLUSION

The documents and materials presented by Chief Assistant Professor Krasimir Tikhomirov Todorov, PhD, meet all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of the ZRASRB and the relevant Regulations of the Paisiy Hilendarski University of Plovdiv.

The candidate in the competition has presented a sufficient number of scientific works published after the materials used in the defense of the Doctor of Philosophy Educational and Scientific Degree. The candidate's works contain original scientific and applied contributions that have received international recognition, with a representative part of them being published in journals and in scientific collections published by international academic publishing houses. His theoretical de-

velopments have practical applicability, with some of them being directly oriented towards academic work. The scientific and teaching qualifications of Chief Assistant Professor Krasimir Todorov, PhD, are undoubted.

The results achieved by Chief Assistant Professor Krasimir Todorov, PhD, in academic and research activities fully comply with the minimum national and additional requirements of the Faculty of Biology, adopted in connection with the Regulations of the University of Plovdiv for the implementation of the ZRASRB.

After getting acquainted with the materials and scientific works presented in the competition, analyzing their significance and the scientific, scientific-applied, and contributions contained in them in the field of educational and teaching activities, I find it reasonable to give my positive assessment and recommend the esteemed Scientific Jury to prepare a report-proposal to the Faculty Council of the Faculty of Biology for the election of Chief Assistant Professor Krasimir Tikhomirov Todorov, PhD, at the academic position Associate Professor at Paisiy Hilendarski University of Plovdiv in the Field of Higher Education: 4. Natural Sciences, Mathematics, and Informatics, Professional Field: 4.3. Biological Sciences (Botany).

February 10, 2026 Reviewer: .....

(Professor Dimcho Zahariev, PhD)