



EXPERT OPINION

regarding competition for the academic position of “Associated Professor”

Presented in front of Scientific jury, assigned with the Sofia University Rector’s order №
РД-38-304/10.06.2024 г.

ANNOUNCED COMPETITION: academic position “Associate Professor” in Professional Field 4.3. **Biological Sciences (Plant Physiology – Symbiotic relationships in plants)**, announced in the State Gazette, issue 32 of April 9, 2024, for the needs of the Department of Plant Physiology, Faculty of Biology, Sofia University St. Kliment Ohridski.

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Only one candidate has applied to the announced competition – Dr. Marieta Georgieva Hristozkova, Assistant Professor at the Department of Plant Physiology, Faculty of Biology, Sofia University St. Kliment Ohridski. The candidate’s documents have been administratively prepared and presented following the requirements of Sofia University St. Kliment Ohridski.

1. GENERAL INFORMATION FOR THE PROFESSIONAL CAREER OF THE CANDIDATE

1.1. EDUCATION

Dr. Marieta Georgieva Hristozkova was born on May 11, 1979. In 1997, she completed her secondary education at the Natural Sciences and Mathematics High School in Vratsa. During the period 1997-2002, she studied at the Faculty of Biology at Sofia University “St. Kliment Ohridski,” where she obtained a Master’s degree in “Molecular Biology” with a specialization in Plant Physiology. In 2008, she obtained a PhD in Plant Physiology from the Bulgarian Academy of Sciences - Institute of Plant Physiology, Section: Mineral Nutrition and Water Regime. The topic of her dissertation thesis was “*The effect of molybdenum deficiency on nitrogen assimilation in nitrogen-fixing plants pea and alfalfa. investigation of the general stress response in Sinorhizobium meliloti under nitrogen and carbon starvation conditions*”. PhD Diploma of the Higher Attestation Commission, 32425/09.06.2008, approved by Protocol No./date: 6-03/08.04.2008.

1.2. PROFESSIONAL CAREER

From October 1, 2002, to January 1, 2004, she held the position of Specialist Biologist at the Bulgarian Academy of Sciences - Institute of Plant Physiology and Genetics, Section: Mineral Nutrition and Water Regime of Plants. From May 1, 2005, to October 31, 2005, she was a trainee under the SIGNAL program of the Marie Curie Foundation (6th Framework Programme of the European Union), where she participated in the project “Changes in gene expression of the

microsymbiont *Sinorhizobium meliloti* under carbon and nitrogen starvation conditions.” The specialization was conducted at the Laboratory of Plant-Microbe Interactions (LIPM) at UMR INRA/CNRS, Toulouse, France. From June 2007 to October 2008, she again held the position of Specialist Biologist at the Bulgarian Academy of Sciences - Institute of Plant Physiology and Genetics, Section: Mineral Nutrition and Water Regime of Plants. From June 2008 to September 2008, she completed another specialization at the Georg-August University, Plant Nutrition Section, Göttingen, Germany, on a DAAD-BG project with the National Science Fund of the Ministry of Education and Science on the topic “The importance of CO₂ fixation processes in legume nodules for their adaptation to low phosphorus concentrations in the environment”. Upon her return, from October 2008 to November 2018, she held the position of Assistant Professor at the Bulgarian Academy of Sciences - Institute of Plant Physiology and Genetics in the same section. Following a competition in November 2018, Dr. Marieta Hristozkova was appointed to the position of Assistant Professor at the Department of Plant Physiology, Faculty of Biology, Sofia University St. Kliment Ohridski, where she remains to this day.

In the course of her education and professional development, Assistant Professor Dr. Marieta Hristozkova has acquired professional experience and skills in two main areas: research activities and teaching activities. The professional realization of the candidate to date is related to the theme of the competition and reflects current and prospective directions in the field of plant physiology and biochemistry.

2. EVALUATION OF THE SUBMITTED DOCUMENTS

2.1 ACCORDING TO THE REQUIREMENTS OF THE ACT FOR DEVELOPMENT OF THE ACADEMIC STAFF IN THE REPUBLIC OF BULGARIA.

Based on the review conducted and the provided supporting material, the evaluation is summarized in the table below.

Indicator	Submitted documents	Actual points	Minimal requirement
A	PhD thesis and the enlisted articles.	50	50
B4	Scientific publications in journals that are refereed and indexed in the world-famous information databases (Web of Science and Scopus), in which the candidate is the first or corresponding author, chapter from a book, collective monograph.	(3 - Q1 and 2 - Q2) 115	100
C	Г7 Scientific publications in journals that are refereed and indexed in the global scientific information databases (Web of Science and Scopus) outside of the habilitation work. Scientific publications in non-refereed journals with scientific peer review or edited collective volumes. Г8 – A published chapter from a collective monograph.	(1 - Q1; 3 - Q2; 6 - Q3) 175 (2- Q2; 3 - Q3; 3 - Q4) 121 (1 chapter) 15 311	200
D	Citations in scientific publications, monographs, collective volumes, and patents, referenced and indexed in globally recognized scientific information databases (Web of Science and Scopus).	(223 citation in Scopus) 446	50

Conclusion on item 2.1: Candidate Assistant Professor. Dr. Marieta Georgieva Hristozkova complies with the requirements of the Act for the Development of the Academic Staff in the Republic of Bulgaria and the regulation of its application.

2.2 ACCORDING TO THE REQUIREMENTS OF THE REGULATION FOR THE DEVELOPMENT OF THE ACADEMIC STAFF IN SOFIA UNIVERSITY

A total of **27** scientific publications have been presented, with 4 of them in Q1 journals, 7 in Q2, 9 in Q3, and 3 in Q4 scientific articles. **17** of the provided scientific publications are in journals with an impact factor, with the candidate's total impact factor being **26.361**. In 8 of these publications, the candidate is the first author. The number of citations in scientific publications, referenced and indexed in globally recognized scientific information databases (Web of Science and Scopus), excluding self-citations and related citations, is **223**. The candidate's project involvement is reflected in her participation as a team member in 7 scientific projects. An analysis of the candidate's teaching workload over the last five academic years shows high commitment and engagement in the department's educational process. Under her supervision, a total of 3 students have defended their theses at the department. Courses for the mandatory discipline "Plant Physiology" in the Bachelor's degree program "Biotechnology of Medicinal and Aromatic Plants" have been successfully developed under her leadership, as well as an elective course "Superfoods" for the Bachelor's degree program.

Conclusion on item 2.2: The presented by the candidate documentation of Assistant Professor Dr. Marieta Hristozkova complies with the requirements of the Regulation for the development of the academic staff of Sofia University.

3. ASSESSMENT OF THE SCIENTIFIC CONTRIBUTIONS OF THE CANDIDATE

The scientific-theoretical and scientific-applied contributions of the research works submitted for the competition can be categorized into four main directions as follows: *A. Beneficial plant-microbial interactions in plants:* A.1. Impact of arbuscular mycorrhizal fungi on plant development. A.2. Symbiotic nitrogen fixation in leguminous plants. *B. Influence of abiotic stress conditions on plant development:* B.1. Effect of salt stress and mitigation of its negative consequences on plant development. B.2. Product quality from medicinal and aromatic plants grown in industrially polluted soils with heavy metals and their potential use for phytoremediation. *C. Methods for enhancing the quality and evaluating the antioxidant activity of medicinal and aromatic plants. Study of antioxidant activity in vitro propagated plants compared to those grown from seeds or wild-grown medicinal and aromatic plants.*

The scientific areas in which Dr. Marieta Hristozkova works are current and fully align with the broad scientific research profile of the Department of Plant Physiology. Application of mycorrhizal fungi improves crop productivity and enhances their resistance and tolerance to stress conditions. Mycorrhizal fungi stimulate soil fertility, plant biomass accumulation, and flavonoid accumulation in the leaves of various test plant species. The impact of heavy metals in polluted soils on the yield obtained from medicinal and aromatic plants has been studied, along with their potential use in phytoremediation. An evaluation of the antioxidant activity of the studied medicinal and aromatic plants has also been conducted.

4. ASSESSMENT OF THE TEACHING ACTIVITY OF THE CANDIDATE

As an Assistant Professor at the Department of Plant Physiology, Dr. Marieta Hristozkova is highly involved and committed to the educational process within the department. In the Bachelor's degree program, she delivers 45 hours of lectures in a mandatory discipline and also participates in practical training for students during the summer school practice at the Department of Plant Physiology.

CONCLUSION

In terms of the volume, content, and quality of the presented scientific materials and teaching activities of the only candidate in the announced competition for the academic position of “Associate Professor”, Assistant Professor Dr. Marieta Hristozkova **meets the requirements of** the Act for the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation, and the Regulations for the conditions and the order for acquiring scientific degrees and holding academic positions in Sofia University St. Kliment Ohridski.

In conclusion of everything stated in this opinion, I can summarize that the complex assessment of the submitted materials, as well as the overall performance of the candidate, gives me full confidence to recommend to the academic jury to appoint Assistant Professor Dr. Marieta Hristozkova as ASSOCIATE PROFESSOR in the professional field 4.3. Biological Sciences (Plant Physiology – symbiotic relationships in plants), announced for the needs of the Department of Plant Physiology, Faculty of Biology at Sofia University St. Kliment Ohridski.

July 16, 2024

Sofia

Member of the Scientific Jury:

/Assoc. Prof. Dr. Yana Evstatieva/