

## OPINION

on the materials submitted for participation in a competition for „Associate Professor“ in the field 6. Agricultural Sciences and Veterinary Medicine, Professional field Forestry, scientific specialty *“Forest Reclamation, Forest Protection and Special Uses of Forests”* in the discipline *“Soil Science with Fundamentals of Fertilization”*

In the competition for Associate Professor, published in the State Gazette №28/01.04.2025 and on the site of the University of Forestry with the code FOR-AsP-0325-162 for the needs of the Department of Silviculture at the Faculty of Forestry, as a candidate participate Senior Assist. Prof. Kamelia Georgieva Petrova, Faculty of Forestry, Department of Silviculture.

**Prepared the opinion:** Assoc. Prof. Dr. Mariana Blagoeva Hristova, in the professional field 6.1. Crop Science, scientific specialty "Soil Science", from the Institute of Soil Science, Agrotechnologies and Plant Protection "Nikola Poushkarov" (ISSAPP)

### 1. Brief biographical data for the candidate

**Chief Assist. Prof. Dr. Kamelia Georgieva Petrova** is a lecturer with over ten years of professional experience in higher education and a strong commitment to academic development at the University of Forestry in Sofia. She earned her Bachelor's degree in Forestry in 2011, followed by a Master's degree in 2013. In 2020, she received her educational and scientific degree of *Doctor* in the field of *Soil Science*.

Dr. Petrova's professional journey has included roles as a *Training Organizer*, *Assistant Professor*, and *Chief Assistant Professor* (since 2020). She has taught in both the Department of Soil Science and the Department of Forestry at the Faculty of Forestry. As of April 11, 2025, she will have over ten years of service at the University of Forestry, where she has accumulated extensive teaching and administrative experience.

Her teaching covers a range of subjects related to soils, fertilization, and their interactions with forest ecosystems. Dr. Petrova has participated in two editions of the National Programme "Young Scientists and Postdoctoral Fellows" in 2020 and 2021, further enhancing her professional development.

With her scientific degree, established teaching practice, active involvement in national and international programs, and recognized expertise in laboratory and analytical methods, Dr. Petrova is a well-prepared and suitable candidate for the academic position of *Associate Professor*.

### 2. Correspondence of the submitted documents and materials of the applicant according to the Rules of the Development of academic staff at the University of Forestry.

The documents submitted by Chief Assist. Prof. Dr. Kamelia Georgieva Petrova fully comply with the requirements set out in the Regulations for the Development of the Academic Staff at the University of Forestry (Art. 3, para. 2; Art. 60, para. 5). A complete set of

mandatory documents has been provided, including a self-assessment report certifying compliance with the criteria under Art. 2a, paras. 2–4. The established compliance confirms that the candidate meets the regulatory requirements for participation in the competition for the academic position of “Associate Professor.”

**3. Assessment of the candidate’s educational and pedagogical activities** (work with students and PhD students)

**Chief Assistant Professor Dr. Kamelia Georgieva Petrova** has a demonstrated and steadily developing teaching career at the University of Forestry. Over the past five academic years (2019–2024), she has completed a total of 1,867.5 classroom hours and has a planned teaching load of 404 hours for the 2024/2025 academic year. Dr. Petrova delivers a lecture course in *Soil Science with a focus on the Fundamentals of Fertilization* and conducts practical classes for students in the *Landscape Architecture* specialty (full-time study) for a minimum of five consecutive years.

In addition to her teaching responsibilities, she has served as a supervisor for student internships and has prepared reviews of diploma theses. In 2022, she was the thesis advisor for a successful graduate in the *Forestry* specialty. Her teaching activities reflect her active engagement with students in both the Bachelor's and Master's degree programs.

The information presented highlights her consistent involvement, accumulated experience, and significant contributions to teaching essential disciplines, providing a strong basis for a positive evaluation of her educational and teaching performance.

#### **4. Assessment of candidate’s scientific, scientific-applied and publishing activities**

##### **General Description of the Submitted Materials**

Chief Assistant Professor Dr. Kamelia Georgieva Petrova is participating in the competition with the following contributions:

- Publications: A total of 27 publications, consisting of 16 articles in scientific journals with an impact factor and 11 in Bulgarian peer-reviewed editions.
- Projects: A total of 11 projects, including leadership roles in 2 of them.

Out of the 27 publications, 25 are in English and only 2 are in Bulgarian, which clearly indicates an orientation toward the international scientific community. Four articles have been published in foreign journals, while 23 have appeared in national journals. Notably, the majority of these publications are in high-impact scientific journals, with 16 published in editions that have an impact factor.

Regarding authorship, 2 of the publications are single-authored, while the remaining are co-authored, demonstrating active collaborative efforts within scientific teams.

Although there are currently no monographs, textbooks, or teaching aids published, the candidate's scientific output meets both the quantitative and qualitative requirements for the academic position of Associate Professor, and the thematic focus aligns well with the announced scientific specialty.

##### **4.1 Participation in scientific, scientific-applied and educational projects**

Chief Assistant Professor Dr. Kamelia Georgieva Petrova has actively participated in 11 scientific, applied research, and educational projects. She has taken on leadership roles in



two of these projects: one under a National Scientific Programme and another funded by the National Science Fund. The thematic areas of these projects align with her field of expertise, focusing on the assessment of soil properties, degradation processes, environmental risk, and the sustainable management of soil and forest resources.

Dr. Petrova has collaborated with teams from various scientific and educational institutions. A significant portion of the research results from these projects has been published in high-impact journals, demonstrating their scientific value and applicability.

Her involvement in projects under the National Programme "Young Scientists and Postdoctoral Fellows," as well as the Operational Programme "Science and Education for Smart Growth," further underscores her commitment to scientific advancement, interdisciplinary approaches, and the integration of education and research activities.

#### **4.2 Characterization of published scientific results**

The publications of Chief Assist. Prof. Dr. Kamelia Georgieva Petrova present a consistent research focus in soil science and forest reclamation, concentrated on the diagnosis and classification of forest soils, assessment of degradation processes, environmental risk, and sustainable management of soil and forest resources. The studies cover Cambisols, Umbrisols, Histosols, Lixisols, and Acrisols in diverse natural conditions. A significant part of the work addresses the content and dynamics of heavy metals (Fe, Mn, Zn, Pb, Cu, Cd) and their relationship with pH, soil organic carbon, and other soil indicators, applying accumulation coefficients to distinguish between accumulation and migration processes.

Another emphasis is the assessment of soil fertility and erosion risk, including the application of the C-factor and IntEro modelling, as well as monitoring of the chemical composition of forest litterfall and soil solution in permanent sample plots (Vitinya, Yundola). The research traces biogeochemical fluxes, microbiological indicators, and the influence of altitude and vegetation cover on microbial communities. Special attention is given to the relationship between soil parameters (SOC, acidity, waterlogging) and permanent growth depression of *Picea abies*, with practical implications for silvicultural decisions.

Methodologically, the works stand out for integrating laboratory and microbiological analyses with geostatistical and GIS-based approaches (including IDW interpolation and thematic mapping). The publications are in reputable peer-reviewed and indexed journals (Web of Science, Scopus), confirming their scientific value, international visibility, and applicability for the monitoring, assessment, and management of forest ecosystems.

#### **4.3 Reflection of Candidate's Scientific Publications in Literature (known citations)**

Total citations: 6.

Types of citations:

- In peer-reviewed journals and conference proceedings: 6 citations
- In textbooks, monographs, dissertations, etc.: 0 citations

While the competition documentation lists only 6 citations, a search in Scopus reveals a more significant and recognized body of scientific work, including 25 citations in peer-reviewed international publications. These additional citations, along with a leading or final

authorship position in some of the articles, demonstrate a genuine contribution and the ongoing development of a scientific profile that exceeds the minimum requirements.

#### **4.4 Contributions to the candidate's work** (scientific, scientific-applied, applied)

The contributions presented by Chief Assist. Prof. Dr. Kamelia Georgieva Petrova are clearly structured in the summary attached to her application documentation and encompass three main directions:

1. **Diagnosis and classification of soils in forest ecosystems** – identification of the initial stage of podzolization in brown forest soils and determination of the relationship between soil characteristics and truffle development, contributing to the advancement of knowledge in Bulgarian soil science and forest ecology.
2. **Assessment of environmental risk and soil health** – quantitative evaluations of erosion risk, carbon stocks in peat soils, heavy metal content, and the use of bioindicators for pollution. An integrated approach combining chemical, biological, and microbiological indicators is emphasized, representing a methodological innovation with practical value.
3. **Sustainable management and restoration of soil resources** – development and application of modern analytical and geostatistical methods (including GIS and IDW interpolations) for monitoring and planning in forest reclamation.

Beyond the national context, the candidate's contributions are integrated into international scientific initiatives, including participation in intensive monitoring under ICP Forests protocols, which ensures data comparability and standardization.

As a reviewer, I find that the grouping of contributions by the candidate into scientific, scientific-applied, and applied results largely reflects the actual content and scope of the presented publications. The formulations are well-reasoned and supported by specific works, covering both fundamental research and developments with direct practical relevance. At the same time, I believe that in some cases the emphasis could be further sharpened on the integrated methodological approach and participation in standardized international monitoring networks, which, in my opinion, are essential elements of the candidate's professional profile..

#### **5. Assessment of the applicant's personal candidate**

The assessment of **Chief Assist. Prof. Dr. Kamelia Georgieva Petrova's** personal contributions should take into account her role in scientific publications and project activities, as well as her overall research trajectory.

In many of her submitted publications, the candidate serves as the lead or first author, indicating her active involvement in developing the research concept, organizing studies, and analyzing and interpreting results. Notably, in two of her submitted habilitation publications, she is the sole author, and in others, she co-authors with only one or two colleagues, demonstrating her significant input in the content of these works.

Her role as a leader of scientific and applied research projects is substantial. She is responsible for defining objectives and tasks, coordinating the research team, preparing scientific publications and reports, and ensuring a connection between scientific work and its practical applicability.



Particularly noteworthy is her consistent research focus on forest reclamation, restoration of degraded lands, and soil condition monitoring. Her contributions extend beyond mere participation; she has developed an independent research profile that builds upon existing knowledge in the field. Her approach integrates chemical, microbiological, and spatial analyses, with a clear emphasis on applicability and scientific validity.

Given these factors, the candidate's personal contributions should be assessed as high. This conclusion is supported by both quantitative indicators—such as authorship and project leadership—and qualitative expertise, original interpretations, and the establishment of an independent research identity.

## 6. Critical remarks

There are no critical remarks concerning the submitted materials and research activities of **Chief Assist. Prof. Dr. Kamelia Georgieva Petrova**. The documentation is complete and well-prepared, and her contributions are clearly demonstrated. Her scientific and teaching activities fully meet the requirements for the academic position of *Associate Professor*.

## 7. Personal impressions

I know **Chief Assistant Professor Dr. Kamelia Petrova** as an exceptionally dedicated scientist and lecturer. She is distinguished by her analytical precision, depth of knowledge, and a responsible approach to both scientific research and teaching.

In addition to these qualities, I greatly appreciate her consistent commitment to professional improvement. She has advanced her skills in laboratory analyses through certified training in operating an ICP-OES spectrometer. Furthermore, she has participated in various international engagements and obtained qualifications, including:

- An exchange program in the United Kingdom at *Forest Research – Alice Holt*
- Involvement in the global laboratory network GLOSOLAN under the FAO
- Recognition from the National Science Fund for outstanding results in scientific activity
- Election as an Associate Councilor of WASWAC

These certifications and commitments clearly demonstrate her active scientific standing, international recognition, and dedication to professional development.

## 8. Conclusion

In connection with the above, I propose that Chief Assist. Prof. Dr. Kamelia Georgieva Petrov be elected as a „Associate Professor“ in the discipline *Soil Science with Fundamentals of Fertilization* in the Professional field 6.5. Forestry, scientific specialty *Forest Reclamation, Forest Protection and Special Uses of Forests*.

Prepared the opinion:

Assoc. Prof. Dr. Mariana Blagoeva Hristova

Opinion delivered to: