OPINION

Regarding the competition for the academic position of PROFESSOR
in the field of Higher Education Area 6. Agricultural Sciences and Veterinary Medicine,
professional field 6.1. Crop Science, scientific specialty "Soil Science",
announced in State Gazette No. 60 of July 25, 2025,
with candidate Assoc. Prof. Dr. Pavlina Naskova Atanasova

Member of the Scientific Jury: Assoc. Prof. Dr. Rositsa Stoyanova Ilieva,
University of Forestry – Sofia, appointed by Order No. 613/24.09.2025
of the Rector of the Technical University of Varna

General Characteristics of the Candidate's Research and Applied Scientific Activity

For participation in the competition for the academic position of *Professor* at the Technical University of Varna, the sole candidate, **Assoc. Prof. Dr. Pavlina Naskova Atanasova**, has submitted for review: one habilitation work – a monograph; one published book based on her defended doctoral dissertation for the award of the educational and scientific degree *Doctor*; twenty-two (22) articles and papers published in scientific journals and proceedings indexed in international scientific databases; eight (8) articles and papers published in peer-reviewed but non-indexed journals or in edited collective volumes; one (1) university textbook and two (2) laboratory manuals.

The candidate has provided verification that she:

- holds an educational and scientific degree *Doctor*, awarded in 2016, following a successfully defended dissertation entitled **"Management of Heavy Metal Pollution in Natural, Agro- and Urban Ecosystems"**;
- has been conferred the academic position *Associate Professor* in the professional field of **Crop Science**, scientific specialty **Soil Science**, confirmed on 21 May 2018.

In addition to the mandatory requirements, the candidate has published an independent monograph related to the topic of the present competition, entitled **"Modeling the Dynamics of Organic Substances and Heavy Metals in Soil"**, Gea Print Publishing House, Varna, 2024, ISBN 978-619-184-067-0, 194 pages.

Furthermore, she is the author of a book based on her doctoral dissertation: **"Management of Heavy Metal Pollution in Natural, Agro- and Urban Ecosystems"**, Gea Print Publishing House, Varna, 2024, ISBN 978-619-184-070-0, 315 pages.

Assoc. Prof. Naskova has also presented a published **university textbook**, *Soil Science, Soil Pollution and Purification Technologies*, University Press of the Technical University of Varna, ISBN 978-954-20-0766-1 (co-authored), as well as two **university teaching manuals** (co-authored):

- *Manual for Laboratory Exercises in Microbiology*, University Press of the Technical University of Varna, ISBN 978-954-20-0785-2;
- *Manual for Laboratory Exercises in Microbiological Control of Chemical Pollution in Plant Production and the Environment*, University Press of the Technical University of Varna, ISBN 978-954-20-0809-5.

Of the submitted scientific publications, 22 belong to Group of Indicators G.7 – works published in refereed and indexed scientific journals, and 8 belong to Group G.8 – works published in peer-reviewed non-indexed journals or edited collective volumes. The total number of points accumulated under Group G amounts to 329.85, exceeding the required minimum of 200 points.

The candidate has also provided evidence of 22 citations, 12 of which are in refereed scientific publications, as well as a report on participation in or management of 8 internal TU–Varna projects, 5 national and 2 international projects, and documentation confirming the supervision of four PhD students, two of whom have successfully defended their dissertations.

Summary: *The submitted documentation has been prepared accurately, reflecting the essential scientific and applied achievements of the candidate without repetition of works or activities presented in previous procedures. With a total of* ***1014.85 points****, Assoc. Prof. Naskova not only meets but significantly exceeds the National Minimum Requirements for the academic position of Professor (550 points).*

Evaluation of the Candidate's Teaching Activity

The supporting documentation concerning the candidate's teaching activity demonstrates that Assoc. Prof. Dr. Pavlina Naskova Atanasova is an experienced lecturer who, over the past three academic years, has delivered lectures and practical exercises in seven (7) courses at the *Bachelor's* level and four (4) courses at the *Master's* level. Her total teaching load during this period amounts to 1,452 contact hours, thus exceeding several times the minimum required teaching load.

The candidate is the author of eight (8) curricula, has participated in five (5) national and two (2) international projects, and has realized seven (7) mobility activities under the *Erasmus Programme*. Under her supervision, twenty four (24) students have successfully defended their diploma theses. Moreover, students under her mentorship have presented their research results at seven (7) student scientific sessions. She is currently the supervisor of four (4) doctoral students, two of whom have successfully defended their doctoral dissertations.

A report verifying compliance with the additional institutional requirements of the Technical University of Varna for candidates applying for the position of *Professor* has also been

submitted. According to this report, at a required minimum of 230 points, Assoc. Prof. Atanasova has achieved 490 points, i.e., more than twice the established minimum.

***In conclusion**, it may be stated that **Assoc. Prof. Dr. Pavlina Atanasova** is a well-established university lecturer who has developed innovative curricula and actively engages with her students not only through classroom instruction but also through guidance and consultation during the preparation of diploma theses and collaborative work on various academic and research projects.*
She has successfully supervised two PhD candidates who have already defended their dissertations.

Main Scientific and Applied Scientific Contributions

Scientific Contributions

1. A simulation model has been developed to describe the movement of organic substances and heavy metals in soils by employing the mathematical tools of multidimensional probabilistic analysis (Indicators: B.3, G.6).
2. A comprehensive model for managing heavy metal aerosol pollution in natural, agro-, and urban ecosystems has been developed.
   The theoretical novelty of the model lies in the integration of experimental methods for direct measurement of investigated indicators (such as lead, cadmium, and others) with probabilistic and statistical pattern recognition approaches into a unified framework for the assessment and forecasting of open and closed ecosystems (Indicators: B.3, G.6).
3. A complex methodological approach and toolkit for the assessment, prediction, and management of processes in ecosystems and agriculture has been proposed (Indicators: B.3, G.6, G.7.1, G.7.7, G.8.1, G.8.6).
4. A comprehensive approach, general model, and technologies have been developed for the production of extractive solutions using various raw materials (Indicators: G.7.2, G.7.3, G.7.11, G.7.12, G.7.16, G.7.18, G.7.19, G.7.20).
5. A complete model for digitalization in agriculture has been designed, representing an integrated platform of experiments, agro- and bio-analyses, and statistical software tools for hypothesis testing, pattern recognition, and prediction of the condition of soil ecosystems (Indicators: B.3, G.6, G.7.1, G.7.5, G.7.7, G.8.1).

Applied Scientific Contributions

1. Technologies have been developed for obtaining extracts from essential oil crops and for their application in crop production and medicine (Indicators: G.7.2, G.7.3, G.7.5, G.7.11, G.7.12, G.8.1).
2. The allelopathic effect of extracts from essential oil crops on the germination and growth characteristics of vegetable crops has been evaluated (Indicators: G.7.16, G.7.20).
3. Approaches have been proposed for assessing plant quality and productivity based on the potential of soil microorganisms and biological mechanisms (Indicators: G.7.5, G.7.6, G.7.8, G.7.21, G.7.22, E.22.1).

4. The beneficial effect of lavender and basil on the microflora of sludge from wastewater treatment plants has been studied (Indicator: G.8.6).

Practical Contributions

1. Models for assessing soil fertility under specific conditions have been proposed, the generalized and systematic form of which is presented in the candidate's monograph (Indicators: B.3, G.6).
2. Databases containing agrochemical and microbiological analyses of agrogenic and urban soils, depending on depth and distance from pollution sources, have been made available for further use (Indicators: B.3, G.6).

Teaching and Methodological Contributions

1. Fundamental knowledge in soil science has been integrated with current environmental issues, such as soil pollution and purification technologies.
   The presented purification methods and soil assessment techniques are applicable both in practice and in the educational process (Indicator: E.22.1).
2. Specialized microbiological knowledge has been systematized and adapted into an accessible form aligned with academic curricula and student levels.
   Practical exercises have been designed in accordance with modern requirements for microbiology education in agricultural and biological specialties (Indicators: E.23.1, E.23.2).

Significance of the Contributions to Science and Practice

The presented scientific works and supporting materials clearly demonstrate that Assoc. Prof. Dr. Pavlina Naskova significantly exceeds the quantitative criteria required for holding the academic position of *Professor*.
The importance of her contributions to science and practice is further confirmed by the number of verified citations, most of which appear in refereed and peer-reviewed scientific journals.

In my opinion, her contribution as a teacher and researcher is even more substantial - she educates students, engages them in various projects, guides their work on diploma theses and doctoral dissertations, and fosters the development of young researchers.

In conclusion, it can be stated that the candidate for the academic position of Professor at the Technical University of Varna, ***Assoc. Prof. Dr. Pavlina Naskova Atanasova****, has presented a body of work that is both* ***quantitatively sufficient and qualitatively significant****, comprising* ***scientific, applied scientific, and teaching-methodological contributions****.*
These contributions have been recognized through numerous citations in reputable scientific publications as well as through the successful defenses of diploma and doctoral theses by her students and PhD candidates.

Critical Remarks and Recommendations

I would recommend that the contributions be restructured, as many of them sound and are perceived as conclusions.

Personal Impressions

I do not know Assoc. Prof. Dr. Pavlina Atanasova personally; however, based on the materials submitted, I am convinced that she is a scholar of substantial scientific achievements within the field of the competition and a well-established university lecturer.

Conclusion

Based on a comprehensive review of the submitted scientific works, their significance, and the scientific, applied, and practical contributions contained therein, I find it **well justified to propose** that **Assoc. Prof. Dr. Pavlina Naskova Atanasova** be appointed to the academic position of **Professor** in the field **6. Agricultural Sciences and Veterinary Medicine**, professional area **6.1 Crop Science**, specialty **Soil Science**, for the needs of the **Department of Crop Production**, Faculty of Mechanical Engineering and Technologies, **Technical University of Varna**.

Date: November 10, 2025

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Заличена информация
по Регламент (ЕС)
2016/679