

OPINION

by **Assoc. Prof. Dimitar Yankov Dimitrov**, member of the Scientific Jury, regarding the competition for appointment to the academic position of **"Professor"** in the field of higher education **4. Natural Sciences, Mathematics and Informatics**, professional field **4.2. Chemical Sciences**, scientific specialty **"Organic Chemistry"**, announced by the Agricultural University – Plovdiv in the State Gazette, No. 48 of 26 May 2026, appointed as a member of the Scientific Jury pursuant to Order No. RD 16-769 of 22 June 2026 of the Rector of the Agricultural University – Plovdiv
Candidate: Assoc. Prof. Eng. Dr. Marin Neykov Marinov

1. Brief presentation of the candidate

Assoc. Prof. Eng. Dr. Marin Neykov Marinov holds a Master's degree in "Biotechnology" from the University "Prof. Dr. Assen Zlatarov" – Burgas. He obtained his PhD degree in the scientific specialty "Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances", with a dissertation entitled "Synthesis and Characterization of Sulfur Analogues of Spirohydantoins and Their Derivatives".

His professional career has been consistently associated with research and teaching activities at Plovdiv University "Paisii Hilendarski" and the Agricultural University – Plovdiv, where he has held the academic position of Associate Professor since 2013. As of the date of submission of his application documents, the candidate has a total of 19 years and 11 months of teaching experience, of which 15 years and 8 months have been at the Agricultural University – Plovdiv.

The submitted materials demonstrate consistent academic development combined with active research, teaching, project-related and scientific supervision activities.

2. General description of the scientific output

For participation in the competition, the candidate has submitted a total of 28 scientific works, including: a habilitation monograph, 22 scientific publications, a book based on his defended dissertation, a university textbook, and four university teaching manuals.

The habilitation work, entitled "Phenothiazines: Synthesis and Antimicrobial Activity", comprises 417 pages and focuses on classical and modern methods for the synthesis of phenothiazines and compounds exhibiting antimicrobial activity. The monograph is thematically related to the candidate's principal research area and to his sustained project and publication activities in the field of phenothiazine derivatives.

Of the 22 submitted and analyzed publications, 1 is in a Q2 journal, 8 are in Q3 journals, 10 are in Q4 journals, and 3 are published in journals indexed with SJR but without an Impact Factor. Of particular note is the publication in the journal *Crystals* from 2024, which is classified as Q2 in Scopus and Web of Science, with an SJR of 0.486 and an Impact Factor of 2.4.

The candidate's scientific results have received 75 citations, including citations in Q1 and Q2 publications, and his Scopus h-index, excluding self-citations, is 7.

A comparison with the works submitted for the acquisition of the academic position of Associate Professor demonstrates the development and expansion of the research topics rather than a mechanical continuation of his previous scientific output. His earlier research focused primarily on hydantoins and spirohydantoins, whereas the present procedure also highlights naphthalimide, phenothiazine and other heterocyclic systems, as well as a broader range of structural and biological studies.

3. Teaching activity

The candidate has extensive and significant teaching experience. For the period 2021/2022–2025/2026, a total teaching workload of 2,750.1 hours has been documented, including lectures, practical classes, examinations and extracurricular activities.

His principal teaching activity is in "Organic Chemistry", but he has also taught "General Chemistry", "Chemistry", as well as courses in the fields of polymers, engineering materials, anticorrosion coatings, and inorganic and analytical chemistry. The candidate has also carried out teaching activities within the Erasmus+ programme.

His educational and methodological activities include the university textbook "Organic Chemistry for Students of Non-Chemical Specialties" and four teaching manuals, including a laboratory exercises manual and a second revised and supplemented edition of a terminology dictionary of organic chemistry.

The candidate has participated in the scientific supervision of two PhD students who have successfully defended their dissertations, as well as three PhD students who are currently undergoing training. The topics of their doctoral research are directly related to his scientific interests – heterocyclic compounds, biological activity and phenothiazine derivatives.

4. Research activity

The candidate's research activity is focused on organic chemistry and, in particular, heterocyclic chemistry, with an emphasis on the structural characterization and biological activity of the synthesized compounds.

Among the submitted results, I would highlight the following principal scientific contributions:

1. Contributions to the synthesis and structural characterization of novel heterocyclic compounds.

Methods have been developed for the preparation of novel derivatives of spirohydantoin, dithiohydantoin, naphthalimides, phenothiazines and other heterocyclic systems. Their structures have been confirmed using a combination of spectroscopic and physicochemical methods, including one- and two-dimensional NMR spectroscopy, IR and Raman spectroscopy.

2. Contributions to the study of the biological activity of heterocyclic compounds.

Novel compounds have been obtained for which antimicrobial and cytotoxic activities have been established. Of particular interest are the naphthalimide and phenothiazine derivatives, for which differences in activity against various bacterial and fungal microorganisms have been established.

3. Contributions to the synthesis and investigation of coordination compounds.

Complexes of Pt, Ru, Ni and Cu with heterocyclic ligands have been synthesized and characterized. Their structural characteristics have been investigated, and in some cases their cytotoxic and antimicrobial activities have also been analyzed. For some of the compounds, coordination geometries have been proposed on the basis of the analytical and spectroscopic data obtained.

4. Contributions to the spectroscopic and structural investigation of organic compounds.

I positively assess the use of modern spectroscopic approaches, including 2D NMR methods and quantum-chemical calculations, for the confirmation and interpretation

of molecular structures. In the investigation of hydrazones, for example, good agreement has been established between the experimental and calculated NMR and IR spectra.

The candidate's project activity is directly related to his publication output, habilitation monograph and supervision of PhD students. It contributes to the sustainable development and expansion of research in the respective field, as well as to the training of young researchers.

Seven nationally led projects, nine projects in which the candidate participated as a member of research teams, and participation in an international project have been presented. Particularly noteworthy is the consistent project activity during the period 2020–2026, focused on phenothiazine derivatives.

The submitted report on the minimum national and institutional requirements demonstrates that the required criteria have been fulfilled, with the candidate achieving a total of 1,000 points against a required minimum of 600 points. The respective minimum requirements have been met or exceeded in all groups of indicators.

5. Remarks and recommendations

I have not identified any deficiencies in the submitted materials.

As a recommendation for his future research activity, I would suggest expanding international scientific cooperation. In view of the increasingly significant problems associated with the development of resistance to plant protection products and medicinal products, it would be particularly important to continue and expand research on biologically active heterocyclic compounds and phenothiazine derivatives.

6. Conclusion

Based on the submitted materials, I consider that Assoc. Prof. Eng. Dr. Marin Neykov Marinov is an established teacher and researcher with extensive academic experience, significant scientific and publication activity, sustained participation in research projects, and demonstrated capacity for scientific supervision of PhD students. His scientific results are characterized by thematic consistency and the development of a sustainable research direction in the field of organic chemistry, and more specifically, heterocyclic chemistry. His contributions are related to the preparation and structural characterization of novel compounds, the investigation of their biological activity, and the properties of coordination compounds.

His publication and project activities, teaching experience, and supervision of PhD students form an academic profile corresponding to the requirements for appointment to the academic position of "Professor".

I consider that Assoc. Prof. Eng. Dr. Marin Neykov Marinov meets the requirements of the Academic Staff Development Act in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of the Academic Staff Development Act (PPZRASRB), and the regulations of the Agricultural University – Plovdiv for appointment to the academic position of "Professor" in the field of higher education 4. "Natural Sciences, Mathematics and Informatics", professional field 4.2. "Chemical Sciences", scientific specialty "Organic Chemistry".

I give a positive assessment of the candidate's overall scientific and teaching activity and recommend that the esteemed Scientific Jury elect Assoc. Prof. Eng. Dr. Marin Neykov Marinov to the academic position of "Professor".

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Plovdiv

Prepared by:

(Assoc. Prof. Dimitar Dimitrov)