

OPINION

by **Assoc. Prof. Nataliya Dimitrova Berberova-Buhova, PhD**

Institute of Optical Materials and Technologies "Acad. Y. Malinowski" – Bulgarian
Academy of Sciences

regarding the competition for the academic position of **"Professor"** in professional field
4.2 Chemical Sciences, scientific specialty Physical Chemistry, announced in State
Gazette, No. 24 of March 21, 2025

with a single candidate: Assoc. Prof. Silvia Emilova Angelova, PhD

I have been appointed as a member of the Scientific Jury (SJ) for the abovementioned competition by order No. RD-15-305 dated May 14, 2025, issued by the Director of IOMT-BAS. This opinion is prepared in accordance with item 3 of the agenda of the first meeting of the Scientific Jury, held on May 28, 2025.

1. General presentation of the candidate

The candidate in the competition, Assoc. Prof. Dr. Silvia Angelova, began working in 1996 at the Institute of Organic Chemistry with Centre of Phytochemistry (IOCCP) at the Bulgarian Academy of Sciences as a chemist. In 2009, she obtained the educational and scientific degree "Doctor" in professional field 4.2 Chemical Sciences, scientific specialty Theoretical Chemistry, with a dissertation titled "Quantum-chemically calculated NMR parameters as a tool for studying tautomeric and conformational transformations".

From 2005 to 2011, she served as Scientific Secretary. Between March 2012 and March 2013, Assoc. Prof. Angelova completed a postdoctoral specialization at the University of Alcalá (Madrid, Spain).

Since 2019, the candidate has held the academic position of Associate Professor at the Institute of Optical Materials and Technologies "Acad. Y. Malinowski" – Bulgarian Academy of Sciences. In 2022, she was elected Scientific Secretary of IOMT.

2. General characteristics of the materials submitted for the competition

The materials submitted by Assoc. Prof. Silvia Angelova comply with the Law on the Development of Academic Staff in the Republic of Bulgaria and with the Regulations for acquiring scientific degrees and holding academic positions at IOMT-BAS. According to the provided CV, the candidate is a co-author of 113 publications, 95 of which are in journals indexed in Scopus. Her publications have received over 800 independent citations, with an h-index of 15 in Scopus. In the period 2020–2025, she delivered 31 invited, oral and poster presentations at international and national scientific forums, most of which were presented personally, and the rest by co-authors. The candidate is a member of the Union of Scientists in Bulgaria, the Union of Chemists in Bulgaria, and the European Peptide Society.

In the competition, Assoc. Prof. Silvia Angelova participates with a total of 19 articles in scientific journals with impact factor, of which 11 are published in Q1 journals, 6 in Q2 journals, and 1 in a Q3 journal. In the submitted competition documents, she has indicated that she is the principal investigator of one national project and a participant in 18 national and international projects. The competition includes 85 citations of publications in which she is a co-author.

All publications and citations included in the present competition have not been used in previous procedures for obtaining the educational and scientific degree "PhD" or for acquiring the academic position of "Associate Professor."

The documents submitted by Assoc. Prof. Angelova show that her scientific activity meets and exceeds the minimum national requirements in the respective indicator groups as follows:

Group A – 50 (minimum required: 50)

Silvia Angelova obtained her PhD in 2009 with a dissertation entitled "Quantum chemically calculated NMR parameters as a tool for the study of tautomeric and conformational transformations."

Group B – 165 (minimum required: 100)

Seven publications equivalent to a habilitation thesis have been submitted. These are published in peer-reviewed scientific journals indexed in the established databases Scopus and Web of Science. Five of the publications are in Q1 journals and two in Q2 journals, which demonstrates the high quality of the research conducted.

Group G – 245 (minimum required: 220)

Twelve publications in established international journals with impact factor indexed in Web of Science and Scopus have been presented. Of these, 6 are in Q1 journals, 4 in Q2, and 1 in Q3.

Group D – 170 (minimum required: 120)

Eighty-five citations in peer-reviewed journals indexed in globally recognized scientific databases (Web of Science and Scopus) have been submitted. Of these, 76 citations are from the last five years (2020–2025), indicating the relevance and timeliness of the candidate's scientific work.

Group E – 280 (minimum required: 150)

- E-14. Participation in a national research or educational project – 170 points
- E-15. Participation in an international research or educational project – 20 points
- E-16. Leadership of a national research or educational project – 20 points
- E-18. Funds attracted through projects led by the candidate – 70 points

3. Evaluation of the candidate's research activity

The scientific and applied research contributions of Assoc. Prof. Dr. Silvia Angelova are related to the application of computational methods (quantum chemical calculations) to study the structure and properties of organic compounds and complexes. Her scientific contributions can be grouped into the following main areas:

1. Application of quantum chemical calculations to study the electronic ground-state structure and properties of chemosensor systems based on 1,8-naphthalimides and rhodamines
2. Application of quantum chemical calculations to study host-guest complexes of dyes and cucurbit[7]uril
3. Application of quantum chemical calculations to study the ground-state electronic structure and properties of D-A⁺(D) chromophores for nonlinear optical applications

Each of these research areas contains significant and innovative results, published in reputable international scientific journals.

4. Teaching and expert activities of the candidate

According to the provided reference, Assoc. Prof. Silvia Angelova teaches a specialized doctoral course at the Training Centre of BAS titled: "Topic 3.3.9. Computer Modeling of Molecular Structure and Optical Properties of Single Molecules and Supramolecular Aggregates." She has also supervised 16 graduation theses – 11 Bachelor's and 5 Master's theses. In the period 2019–2024, Assoc. Prof. Angelova has prepared more than 30 project evaluations for the Bulgarian National Science Fund, 9 reviews and expert opinions for procedures for scientific degrees and academic positions, and over 100 anonymous peer reviews for scientific articles and other materials.

Her activities in education and expert evaluation demonstrate a high level of commitment and contribution to the academic and scientific community.

Critical remarks

I have no critical remarks regarding the submitted documents or the reference detailing the candidate's scientific contributions.

Conclusion

The scientometric data and indicators in the materials submitted by Assoc. Prof. Silvia Angelova exceed the minimum national requirements set by the Law on the Development of Academic Staff in the Republic of Bulgaria, as well as the additional requirements outlined in the Regulations for acquiring scientific degrees and holding academic positions at IOMT-BAS.

Her scientific work includes original research and applied contributions, evidenced by publications in prestigious international journals and a significant number of citations, including many in the past five years.

Based on the above, I hereby express my positive opinion and confidently recommend that the esteemed members of the Scientific Council of IOMT-BAS elect Assoc. Prof. Silvia Emilova Angelova to the academic position of Professor in professional field 4.2 Chemical Sciences, scientific specialty Physical Chemistry.

Sofia, 08.07.2025

Prepared by:
/Assoc. prof. Nataliya Berberova-Buhova/