

OPINION

Regarding the competition for the academic position "Professor" in professional field 4.2. "Chemical Sciences", scientific specialty "Physical Chemistry", as per the announcement in State Gazette Issue No. 24 from 21.03.2025.

By Assoc. Prof. Biliانا Chavdarova Georgieva, PhD, Institute of Optical Materials and Technologies "Acad. Yordan Malinovski" – Bulgarian Academy of Sciences, appointed as a member of the Scientific Jury by order of the Director of IOMT No. RD-15305/14.05.2025.

Candidate: Assoc. Prof. Silvia Emilova Angelova, PhD, Institute of Optical Materials and Technologies "Acad. Yordan Malinovski" – Bulgarian Academy of Sciences

1. General Evaluation of the Submitted Materials

The sole candidate, Assoc. Prof. Dr. Silvia Angelova, participates in the competition with 19 publications divided into two groups. The first group includes 7 publications, equated to habilitation work (group indicators "B"), which accumulate 165 points from the required minimum of 100, in accordance with the Regulations for the Implementation of the Development of Academic Staff in the Republic of Bulgaria Act (ZRASRB) for the academic position "Professor". The second group (indicators "G") includes 12 publications with a total of 245 points from the required minimum of 220.

All 19 publications are distinct from those used for obtaining the doctoral degree and for the academic position of "Associate Professor". The publications from group "B", equated to habilitation work, are in journals with impact factor and classified in Q1 (5 papers) and Q2 (2 papers), published between 2020 and 2024. The publications in group "G" are also in impact factor journals, except one. According to the candidate, the quartile classification is: Q1 (6 publications), Q2 (4 publications), and Q3 (1 publication), with a publishing period ranging from 2009 to 2025.

Upon reviewing Appendices 3–5, I identified a minor discrepancy. One article (No. 6 in group G) is marked as Q1. The journal *Inorganica Chimica Acta*, in which this paper was published, was classified as Q2 according to Journal Citation Reports-IF. Of course, the fact that this article is published in a second-quartile journal (Q2) in no way compromises its scientific value, and the correspondingly lower point total does not affect the final result — Assoc. Prof. Angelova still meets the minimum requirements for the position of "Professor".

In the remaining indicators, Assoc. Prof. Dr. Angelova also meets the minimum requirements outlined in the ZRASRB Regulations for the position of "Professor": group A – 50 points (min. 50), group D – 170 points (min. 120), group E – 280 points (min. 150).

It should be noted that part of the data presented in group E, concerning participation in research projects and attracted financial resources, refers to ongoing projects and therefore cannot currently be considered completed academic contributions. This adjustment does not affect the overall outcome, as the minimum requirements are still fulfilled.

According to Scopus, Assoc. Prof. Angelova has 101 publications, over 800 citations, and an h-index of 13.

2. Overview of Scientific, Teaching, and Administrative Activities

Assoc. Prof. Dr. Silvia Angelova works in the field of theoretical chemistry, and her scientific results are of fundamental nature, contributing to the understanding of matter properties and their relationship to

structure. In her work, she employs *ab initio* and DFT methods to study intermolecular interactions and assess the relative thermodynamic parameters of various chemical systems and reactions.

Regarding her teaching activities, Assoc. Prof. Angelova leads a course entitled “Computer Modeling of Molecular Structure and Optical Properties of Single Molecules and Supramolecular Aggregates” at the Training Center of the BAS, and has supervised 16 diploma students from the Faculty of Chemistry and Pharmacy at Sofia University “St. Kliment Ohridski” and from the University of Chemical Technology and Metallurgy – Sofia. She also possesses solid administrative experience, having served as Scientific Secretary of IOMT-BAS since 2022.

3. Scientific Research Contributions

The contributions of the publications equated to habilitation work are grouped thematically into three main areas:

1. Application of quantum-chemical calculations for studying electronic structure in the ground state and properties of chemosensory systems based on 1,8-naphthalimides and rhodamine;
2. Application of quantum-chemical calculations for examining host–guest dye–cucurbit [7] uril complexes;
3. Application of quantum-chemical calculations for investigating electronic structure in the ground state and properties of D-A+(D) chromophores for nonlinear optical applications.

In all the publications, Dr. Angelova planned and carried out the theoretical calculations, interpreted the results, and contributed to the analysis of experimental data where applicable.

The scientific contributions in group G relate to the application of the computational methods that Dr. Angelova specializes in to explore the structure and properties of various organic compounds and complexes. The selected publications demonstrate a broad range of scientific problems, addressed using diverse functionals within TD-DFT calculations. Dr. Angelova exhibits deep understanding of theoretical chemistry — from the widely used B3LYP, through modern and more accurate approaches such as M06, M06-2X, and PBE0, to advanced and computationally intensive functionals like ω B97XD and MN12-SX.

4. Conclusion

In conclusion, Assoc. Prof. Dr. Angelova fully meets the requirements of the ZRASRB and the regulations of IOMT-BAS for its implementation. The available scientometric indicators, including an h-index of 13, demonstrate the high quality of her scientific publications and confirm her significant contributions to her chosen research field.

Based on the above, I provide a positive assessment and recommend that the esteemed Scientific Jury support the candidacy and propose to the Scientific Council of IOMT-BAS that Assoc. Prof. Dr. Silvia Angelova be awarded the academic position of "Professor" in professional field 4.2. Chemical Sciences.

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