OPINION

by Prof. Dr. Elena Zdravkova Ivanova, Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences

on the materials submitted for participation in a competition

for the academic position of Associate Professor at the Institute of Organic Chemistry with Centre of Phytochemistry (IOCCP), BAS

in field of higher education 4. Natural Sciences, Mathematics and Informatics,

professional field 4.2. Chemical Sciences, scientific speciality Organic Chemistry

In the competition for the academic position of Associate Professor, announced in the State Gazette, issue No. 13 of 03.02.2026, and on the website of IOCCP-BAS, one candidate has been admitted for evaluation: Dr. Ivalina Ognyanova Trendafilova.

1. General presentation of the procedure and the candidate

Dr. Ivalina Trendafilova has submitted all required documents for participation in the competition. The submitted report clearly demonstrates the candidate's compliance with both the minimum national requirements and the requirements of IOCCP-BAS for the academic position of Associate Professor, as summarized below:

Indicator group	**Indicator**	**Quantitative data**	**Points**
А	Educational and scientific degree "Doctor"	1	50
В	Publications submitted as a habilitation thesis	5 publications - 3 (Q1), 2 (Q2)	115
Г	Publications outside the habilitation thesis	11 publications - 7 (Q1), 1 (Q2), 1 (Q3), and 2 (Q4)	234
Д	Citations in refereed and indexed journals	198	396

All 16 publications submitted are outside the dissertation work and are included in the present competition procedure. The data show that the candidate not only meets but also exceeds the required minimum indicators for the academic position of Associate Professor.

2. Brief biographical data

Dr. Ivalina Trendafilova is a researcher with consistent development in the field of porous and mesoporous silica-based materials and their hybrid derivatives. Her professional career is associated with IOCCP-BAS, where she was a PhD student, an Assistant Professor, and is currently a researcher. She has carried out postdoctoral research at the National Institute of Chemistry in Ljubljana and at the University of Namur, as well as short-term specializations in France and the USA.

Her scientific interests are focused on the development of porous and mesoporous silica-based materials and hybrid carriers for the delivery of biologically active substances, as well as on catalytic and adsorption applications. The curriculum vitae indicates that she is the author of 32 scientific publications, with 368 citations excluding self-citations and an h-index of 13.

Her professional development has also been accompanied by a number of distinctions, including the Acad. Rumen Tsanev Award, the Prof. Marin Drinov Award, the Award of the National Endowment Fund "13 Centuries Bulgaria", and the Prof. Hristo Balarev Award of the Union of Chemists in Bulgaria.

3. General characterization of the candidate's activity

The scientific output of Dr. Trendafilova is concentrated in an interdisciplinary field related to the design, synthesis and application of porous and mesoporous silica-based materials and their hybrid derivatives. Her studies combine fundamental aspects of structure and surface functionalization with a clearly expressed scientific-applied orientation toward systems for drug delivery, catalysts and adsorbents.

The habilitation thesis has been presented as an equivalent set of 5 publications, of which 3 are in Q1 and 2 in Q2. They outline an independent scientific direction related to the preparation and investigation of modified mesoporous silica-based carriers as systems for the delivery of biologically active substances, mainly natural polyphenols, enabling their stabilization and controlled release. The publications under indicator group Г logically extend this line toward more complex hybrid systems and more specific biomedical applications.

The candidate's scientific results have been presented at 36 national and international scientific forums in Bulgaria and abroad, including oral presentations, a plenary/keynote lecture, and invited contributions. This is an indication of the good international visibility of her research.

The candidate's project activity is also significant. She is the coordinator of national and international scientific projects, including a project funded by the Bulgarian National Science Fund, as well as an international project co-funded under the Marie Skłodowska-Curie Actions. In addition, she participates in several other national and international research projects.

The scientific publications of Dr. Ivalina Ognyanova Trendafilova have received a good response in specialized literature. According to the submitted curriculum vitae, the total number of citations excluding self-citations is 368, and the candidate's h-index is 13. These scientometric indicators testify to the good visibility and recognizability of her scientific results in the international specialized literature.

Contributions (scientific, scientific-applied, applied)

The research activity of Dr. Ivalina Ognyanova Trendafilova is focused on the interdisciplinary field of porous and mesoporous silica-based materials and hybrid materials as carriers of biologically active substances. A leading place in the submitted works is occupied by delivery systems for natural polyphenols, in which the appropriate selection of carrier, surface modification and coating with a polymeric or lipid layer aim to improve loading, solubility, stability and release profile. The main scientific line is outlined in the publications under indicator group B and has been consistently expanded in the works under indicator group Г toward more complex functional systems and more specific biomedical applications.

The developed effective systems for the delivery of quercetin, curcumin, capsaicin, morin, hesperetin and kaempferol, as well as sulfadiazine, verapamil, prednisolone, tamoxifen and miltefosine, should be regarded as scientific-applied contributions. It has been shown that their loading into suitably modified carriers leads to improved solubility and stability, to controlled or prolonged release, and in a number of cases to enhanced biological activity. For some of the

systems, higher antitumor activity than that of the free substance has also been established, in the absence of significant intrinsic cytotoxicity of the unloaded carriers.

4. Assessment of the candidate's personal contribution

The personal contribution of Dr. Ivalina Trendafilova in the submitted publications is clearly recognizable. Particularly indicative are the works included in the habilitation thesis, in which she is the first author in 4 out of a total of 5 publications. This gives grounds to accept that she has played a leading role in formulating the research tasks, selecting and modifying the carriers, interpreting the results, and formulating the scientific conclusions.

Her overall scientific output shows a consistently developed independent line directed toward the relationship between the structure and surface functionalization of porous and mesoporous silica-based materials and their behavior as carriers, catalysts or adsorbents.

Summary

Dr. Ivalina Trendafilova is a researcher with a clearly defined scientific profile and a consistently developed research topic in the field of porous and mesoporous silica-based materials and their hybrid derivatives. The submitted scientific output is thematically coherent, published in reputable international journals, and has received a good response in the specialized literature. Her works reveal a clearly recognizable personal contribution, especially in the development of modified mesoporous and hybrid systems for the delivery of biologically active substances, ensuring their stabilization and controlled release. The candidate demonstrates good international visibility, project activity, ability to work in a scientific team, and capacity for the independent development of scientific ideas.

Conclusion

After reviewing the submitted materials and scientific works, as well as their significance and contributions, I give my positive assessment and recommend that the Scientific Jury prepare a report-proposal to the Scientific Council of IOCCP-BAS for the election of Dr. Ivalina Ognyanova Trendafilova to the academic position of Associate Professor in professional field 4.2. Chemical Sciences, scientific speciality Organic Chemistry.

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Reviewer:

/Prof. Dr. Elena Zdravkova Ivanova/