

OPINION

by Prof. Dr. Nikolay Georgiev Vassilev, IOCCP – BAS

Of the materials submitted for participation in the competition to hold the academic position of
Associate Professor in Sofia University "St. Kliment Ohridski"

Professional field 4.2 Chemical sciences (Theoretical chemistry)

In the competition for professor, announced in the State Gazette, issue 21 of 15.03.2022 for the needs of the Faculty of Chemistry and Pharmacy (FCP) of Sofia University as the only candidate participates Ch. Assistant Professor Dr. Iskra Zareva Koleva from FCP at Sofia University.

1. General presentation of the procedure and the applicant

Ch. Assistant Professor Dr. Iskra Zareva Koleva currently works in the Department of Pharmaceutical and Applied Chemistry of the Faculty of Chemistry and Pharmacy of SU "St. Kliment Ohridski". She graduated from higher education in chemistry at SU "St. Kl. Ohridski" in 2012 with excellent success. She defended his PhD thesis on "Quantum-chemical modeling of heterogeneous catalytic systems based on cerium dioxide" in 2017 at the same faculty. From 2017 until now, she is the main assistant at the Department of Pharmaceutical and Applied Organic Chemistry of the Faculty of Chemistry and Pharmacy of the SU "St. Kliment Ohridski".

2. General characteristics of the applicant's activities

From the total list of 18 publications of Ch. Assistant Professor Dr. Iskra Zareva Koleva, she participated in the competition with 14 scientific papers, all of which are publications in scientific journals (11 publications are in journals with rank Q1 and 3 publications are in journals with rank Q2). All were published after obtaining the PhD in 2017, with the exception of a publication in *J. Agric. Food Chem.* from 2015, which is not included in the PhD thesis. According to the attached report, the applicant meets criteria A and B, collects 235 points for indicator group D and exceeds the minimum of 220 points, for indicator group D, she collects 308 points, significantly above the minimum of 70 points, and for indicator group G, she col-

lects 80 points, which exceed the minimum of 70 points. The total number of citations of the candidate is 168, and of the articles presented for the competition is 154. The Scopus database system calculates h index 6 of the articles presented for the competition on Ch. Assistant Professor Dr. Iskra Zareva Koleva.

The habilitation work is dedicated to four articles (No. 4, 6, 10, 13) and summarizes the scientific results of a quantum chemical study of heterogeneous catalytic systems containing cerium dioxide and metal nanoparticles.

The scientific works of the candidate have been published in renowned international journals with a high impact factor: 2 articles in *Angew. Chem. Int. Ed.* (IF = 16.823 for 2021), 2 articles in *Molecules* (IF = 4.411 for 2021), 2 articles in *PCCP* (IF = 3.945 for 2021), 1 article in *Catal. Today*, (IF = 6.766 for 2021), 1 article in *J. Agric. Food Chem.* (IF = 5.895 for 2021), 1 article in *Microporous and Mesoporous Mat.*, (IF = 5.455 for 2021), 1 article in *J. Phys. Chem. C* (IF = 4.126 for 2021), 1 article in *Mater. Chem. and Phys.* (IF = 4.094 for 2021), 1 article in *J. Drug Deliv. Sci. Technol* (IF = 3.981 for 2021) etc. The Q-factors of the journals testify to the high reputation of the journals in which the candidate's scientific works were published: 11 publications are in journals with rank Q1 and 3 publications are in journals with rank Q2.

The scientific works of Ch. Assistant Professor Dr. Iskra Zareva Koleva are in the field of quantum-chemical modeling of various catalytic materials and systems such as modified zeolites, modified mesoporous silicate materials, catalytic systems containing CeO₂, nanoparticles of transition metals. Recently, the interaction of trivalent metal cations with curcumin has been modeled quantum-chemically by the applicant.

Scientific works of Ch. Assistant Professor Dr. Iskra Zareva Koleva are at a very high scientific level, correspond to the theme of the competition and are in the field of theoretical chemistry.

3. Teaching and project activity

Ch. Assistant Professor Dr. Iskra Zareva Koleva has a serious academic load. She leads exercises on: Pharmaceutical analysis I and II part - master's program Pharmacy; Instrumental methods in chemistry Part II – Bachelor's program Engineering chemistry and modern materials; Computational Methods in Spectroscopy - Master's Program Computational Chemistry and Master's Program Modern Spectral and Chromatographic Methods of Analysis; Hybrid (QM/MM) methods - Master's program Computational Chemistry; Modeling of periodic systems and nanostructures - Master's program Computational Chemistry; Biopharmacy - master's

program Pharmacy. The candidate was the supervisor of 1 graduate student. She worked on the implementation of 10 national and international projects.

CONCLUSION:

Ch. Assistant Professor Dr. Iskra Zareva Koleva fully complies with the regulations for the implementation of the academic staff in the Republic of Bulgaria and the regulations adopted by the Council of Ministers, as well as with the requirements of Sofia University “St. Kl. Ohridski” for the occupation of the academic position "Associate Professor". The valuable scientific production presented for participation in the competition is sufficient in volume, it has been published in renowned scientific journals and has found a wide response in the literature. Based on the above, I am convinced of my positive assessment and suggest Ch. Assistant Professor Dr. Iskra Zareva Koleva to be elected to the academic position of “Associate Professor” in the professional field 4.2 Chemical Sciences (Theoretical Chemistry).

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Writing the opinion:

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