

ATTITUDE OF REVIEWER

With respect to the competition, published in „State Gazette”, issue 21/15.03.2022 for occupying the academic position “Associate Professor” in professional field 4.2 “Chemical Sciences”, scientific research specialty “Theoretical Chemistry”

Candidate: Assistant Professor Iskra Zareva Koleva

Member of the Scientific Jury: Prof. Yuri Kalvachev, Institute of Catalysis, Bulgarian Academy of Sciences

The only candidate in the competition is Dr. Iskra Zareva Koleva, who works as an Assistant Professor for Department of Pharmaceutical and Applied Organic Chemistry, Faculty of Chemistry and Pharmacy, University of Sofia.

Iskra Koleva obtained a bachelor's degree in Computational Chemistry in 2012 and a master's degree in Materials Science in 2013 at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski". The following year, she entered the same faculty as a PhD student after winning a competition and successfully defended her educational and scientific degree "PhD" in April 2017. The topic of her dissertation was: "Quantum-chemical modeling of heterogeneous catalytic systems based on cerium dioxide" with supervisor Prof. Dr. Georgi Vayssilov. She then joined the Faculty of Chemistry and Pharmacy as an assistant professor. She has carried out short-term research visits (1-2 months) at the University of Barcelona, Spain in the group of Prof. Konstantin Neyman, who is an a known name in the field of theoretical chemistry.

The scientific research of Dr. Iskra Koleva are mainly in the field of heterogeneous catalysis - quantum chemical modeling of zeolites; of organic molecules adsorbed on zeolites; of other catalytic systems containing ceria and transition metal nanoparticles. Dr Iskra Koleva appeared in the competition, presenting 14 publications, 4 of them in the form of a habilitation thesis (the 4 articles are in Q1 journals). The remaining 10 papers are in journals such as J. Phys. Chem., C; Phys. Chem. Chem. Phys.; Catalysis Today, Microporous and Mesoporous Materials – 7 of them are in the first quartile group - Q1, and the other 3 in second quartile Q2, which indicates a high scientific level. These works have found a wide response in the scientific literature - they have 154 citations in renowned international publications up to the time of submission of the documents, and at the time of writing this statement they are 182. Seven of the works with which she appears in the current competition have been cited seven or more than seven times, which shows, once again, the high quality of the works and the relevance of the solved tasks. The presented studies are original and correspond to the topic of the announced competition.

The provided information about the research work of the Assistant Professor Dr. Iskra Koleva is competently prepared and fully reflects the candidate's contributions.

According to the Rules for the Implementation of the Law for the Development of the Academic Staff in the Republic of Bulgaria, they are divided into two groups of indicators - group "B" - habilitation work (indicator 4) and group "Г" - scientific publications, which are not included in the habilitation work (indicator 7). The contributions of Dr. Iskra Koleva are in quantum chemical modeling of various materials, namely:

- zeolites containing metal cations
- organic molecules with modified mesoporous silicalites;
- catalytic systems containing CeO₂;
- nanoparticles of transition metals;
- trivalent metal cations and their interaction with cucurbiturils.

A list of participation in 23 international and national conferences and congresses in the field of catalysis, synthesis and application of zeolites, environmental protection and nanomaterials is presented, some of which she has given reports on. Here I would like to point out that I have attended Dr. Iskra Koleva's presentations several times and her scientific presentations have always been met with interest. She has participated in 10 research projects - with national and international funding.

I know the candidate personally and my impressions of her as a scientist and specialist are excellent.

Evidential materials have been submitted to cover the conditions of Article 24, paragraph 1, points 1 and 2 - a diploma for the educational and scientific degree "doctor" and a certificate from the SU for holding the position of "assistant professor" for more than 2 years. The careful inspection of the scientific publications provided to me convinces me that item 5 of the same legal norm (art. 24, para. 1) is also fulfilled - absence of plagiarism in the candidate's scientific works.

I firmly believe that Ch. Iskra Zareva Koleva, PhD, meets and exceeds the requirements of Art. 24, paragraph 1, items 3 and 4 of the Law for the Development of the Academic Staff in the Republic of Bulgaria. Based on the above, I propose Dr. Iskra Zareva Koleva to be elected as an associate professor at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski".

July 07th, 2022

Sofia

Prof. Yuri Kalvachev