Attitude of Reviewer

By Prof. Dr. Nikolay Georgiev Vassilev, IOCCP - BAS

Of the materials submitted for the competition for the occupation of the academic position
Professor at the Faculty of Chemistry and Pharmacy at Sofia University "St. Kl. Ohridski"
Professional field 4.2 Chemical Sciences (Organic Chemistry – Organic catalysis)

In the competition for the academic position, Professor, announced in the State Gazette, issue 52/02.07.2019 for the needs of the Faculty of Chemistry and Pharmacy of Sofia University "St. Kl. Ohridski" as sole candidate participates Associate Professor Dr. Hristiyan Aleksandrov Aleksandrov from the Faculty of Chemistry and Pharmacy at Sofia University "St. Kl. Ohridski".

1. General presentation of the procedure and the applicant

Associate Professor Dr. Hristiyan Aleksandrov is a graduate from the Faculty of Chemistry at the Sofia University "St. Kliment Ohridski". He obtained his M.Sc. degree in 2002 in the field of Theoretical chemistry and physical chemistry. In 2008 he, under the supervision of Prof. G. Vayssilov, successfully defended a Ph.D. thesis in the Faculty of Chemistry at Sofia University "St. Kliment Ohridski" entitled "Theoretical study of the structure of zinc-containing ions in the pores of ZSM-5 zeolites and the mechanism of the dehydrogenation of ethane on them". In the same year he began his career as a senior assistant, then as a chief assistant, and since 2014 he has been an associate professor at the Faculty of Chemistry and Pharmacy at Sofia University "St. Kl. Ohridski ".

2. General characteristics of the applicant's activities

Associate Professor Dr. Hristiyan Aleksandrov submitted a list of 61 scientific papers, two of which are book chapters and one is a textbook. From this list, 6 scientific publications are equated to habilitation thesis (publications No. 1, 5, 6, 19, 21, 31), 30 are scientific publications with which she participates in the competition for the academic position "Professor" (publications No. 2-4, 7-18, 20, 22-30, 32-36). The distribution of the 6 scientific publications equated to habilitation thesis according to the rank of scientific journals is as follows: all are in scientific publications with Q1. The distribution of the 30 scientific publications with which she participates in the competition for the academic position of "Professor" according to the rank of scientific journals is as follows: 26 are in

scientific publications with Q1 and 4 are in scientific publications with Q2. According to the attached information, the total number of citations is 209. According to the Scopus database, the candidate's h-index is 14. This value is indicative of high scientific productivity combined with wide echoes in the literature.

The attached report shows that Associate Professor Dr. Hristiyan Aleksandrov fulfills the minimum national requirements for occupying the academic position of "Professor" (Indicator A fulfills national requirements, Indicator C is 150 with a minimum value of 100, Indicator D is 730 with a minimum value of 200, indicator E is 418 with a minimum value of 100 and indicator F is 427 with a minimum value of 150).

The research of Associate Professor Dr. Hristiyan Aleksandrov in publications included in the habilitation work is an application of quantum-chemical calculations to clarify the factors influencing the hydrogenation of alkenes on transition metals. The systematic nature of the research is impressive: from drawing up the right model through choosing the right level of theory and analyzing the results to returning to the top to create a more complex model and repeat the whole computational strategy.

The research of Associate Professor Dr. Hristiyan Aleksandrov in the publications by group of indicators "D" represents quantum-chemical research in the following directions:

(1) Quantum-chemical modeling of zeolite systems containing cations and their complexes with applications in catalysis [26,34,40,42,49,50,54,55];

(2) Quantum-chemical modeling of catalytic systems based on CeO_2 [30,31,33,35,37,38,39,44,45,48,52];

(3) Quantum-chemical modeling of transition metal nanoparticles and catalytic transformations on them [23,25,27,28,29,41,43,53];

(4) Quantum-chemical modeling of the interaction of organic molecules with zeolites and graphene [24,32,36,46,47,51,56,57,58].

This group of publications also highlights the systematic nature of research and the increasing complexity of models for quantum-chemical description of catalytic processes.

Scientific works of Associate Professor Dr. Hristiyan Aleksandrov are at a very high scientific level, are relevant to the subject of the competition and are in the field of computational theoretical chemistry. In most of the scientific publications, experimental data have been used to verify the theoretical characteristics of the systems studied. The studies carried out can be categorized as novelty for science as well as enrichment of scientific knowledge by clarifying the structure and properties of various molecular systems and describing the catalytic processes in which they participate.

3. Teaching and project activity

As a lecturer at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kl. Ohridski"Associate Professor Dr. Hristiyan Aleksandrov has developed four courses for both undergraduate and master students; from all specialties of the Faculty of Chemistry and Pharmacy and the Faculty of Biology. Associate Professor Dr. Hristiyan Aleksandrov has one successfully defended PhD student and has supervised one defended graduate student. He was a PhD consultant at the Technical University of Munich (Germany) and the University of Barcelona (Spain). His academic workload in the last 4 years is well above the minimum required.

Associate Professor Dr. Hristiyan Aleksandrov has participated in a total of 30 scientific projects: 22 national projects funded by the Research Fund and various Structural Funds Operational Programs and 8 international projects funded by DFG (Germany), Ministry of Education (Spain) , Ministerio de Economía y Competitividad (Spain), European Commission. The applicant was the leader of one project and the head of the SU team in 4 projects. Assistant Professor Dr. Hristiyan Aleksandrov has two long-term specializations at the Technical University of Munich (Germany) and the University of Barcelona (Spain) and several short-term specializations.

CONCLUSION

Associate Professor Dr. Hristiyan Aleksandrov 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 "Professor". The value of scientific production presented for participation in the competition is sufficient in volume, has been published in reputable scientific journals and has found wide echo in the literature. Based on the above, I am convinced of my positive assessment and suggest Associate Professor Dr. Hristiyan Aleksandrov to be elected to the academic position of "Professor" in the professional field 4.2 Chemical Sciences (Organic Chemistry – Organic catalysis).

Sofia, 25.10.2019 Writing the reviewer attitude: .....

Prof. Dr. Nikolay Vassilev