**OPINION**

**by Prof. Dr. Valerij Christov Christov, PhD, DSc**
**Konstantin Preslavsky University of Shumen**

in regard to the materials submitted to participate in the procedure for *Professor* Academic job vacancy within the Faculty of Chemistry and Pharmacy at Sofia University "St. Kliment Ohridski", field of higher education **4. Natural Sciences, Mathematics and Informatics**, professional field **4.2. Chemical Sciences,** scientific major **Physical Chemistry**

It is Assoc. Prof. Stoyan Ivanov Karakashev, PhD from the Department of Physical Chemistry at Sofia University "St. Kliment Ohridski" (SU) being the only candidate to participate in the competition for professor, announced in State Gazette no. 25 of 26 March 2019 and on the website of the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski" (FCP-SU) for the needs of the Department of Physical Chemistry.

I was appointed by Order № РД-38-224/10. 06. 2019 of the Rector of SU to be a member of the scientific jury within the procedure of occupying the academic position *Professor* in the field of higher education 4. Natural sciences, Mathematics and Informatics, professional field 4.2. Chemical Sciences, scientific major Physical Chemistry for the needs of the Department of Physical Chemistry of the FCP-SU.

The set of electronic materials submitted is in compliance with the The Regulation on the Terms and Procedure for Acquisition of Academic Degrees and the Occupation of Academic Jobs at SU and includes all administrative and scientific documents necessary for the procedure.

**General Information on Applicant's Activity**

The applicant Assoc. Prof. Dr. Stoyan Karakashev has presented a total of 90 scientific publications, which include two chapters of monographs, 75 referred papers, 7 papers from conferences and 6 papers that are not referred.

The total number of publications with which Prof. Karakashev participated in the professor's competition and which was published after the acquisition of the academic title of Associate Professor (2013) is 21, all referred. The papers in journals with Q1 are 12, those with Q2 – 6 and 3 papers are published in journals without Q. Papers that provoke interest are published in journals with excellent reputation such as *Advances in Colloid and Interface Science* (Q1, 6 papers), *Journal of Colloid and Interface Science* (Q1, 4 papers), *Experiments in Fluids* (Q1, 1 paper), *Journal of Physical Chemistry C* (Q1, 1 paper), *Colloids and Surfaces A* (Q2, 4 papers), *The European Physical Journal E* (Q2, 1 paper).

Assoc. Prof. Karakashev has presented a thorough habilitation work (179 pages) that includes part of his research after 2013. It was structured on the basis of his nine original scientific papers and other authors' research. The work is dedicated to the research on thin micro and macro films in

conventional Sheludko-Exerova cells, a rectangular frame, between bubbles, between a bubble and a solid surface, focusing on their various fundamental and applied aspects.

Dr. Karakashev has great experience in various projects. He was the head of a national project funded by the Science Fund of the Ministry of Education and Science and of the Bulgarian team of three international scientific projects under the 7th Framework Program of the European Commission. He also participated as a member of the working teams developing two scientific projects funded by the Science Fund of the Ministry of Education and Science and two projects funded by the NIS of the SU. The funds from projects managed by Dr. Karakashev are over BGN 360,000.

Dr. Karakashev has won two reintegration grants from the European Union after his return to Bulgaria from Australia. He was also awarded a scholarship from DAAD for a Leibniz Polymer Research Institute in Dresden and a Fulbright scholarship for a visit to Illinois University in Chicago. He has earned the Eureka Foundation Prize for a young scientist and is the top reviewer of Publon's Global Peer Review for 2018.

The report attached shows that Assoc. Prof. Karakashev has an intensive overall academic activity concerning the indicators under Art. 122 § 2 including mainly lecture courses and laboratory experiments on a number of physicochemical disciplines of students from the Bachelor's degree and the Master's degree. It is shown a significant workload in last years. An appendix is available in regard to the assessment of the students in the academic courses conducted by Assoc. Prof. Karakashev. The results of the students on the individual criteria range from Good 4.20 to Very Good 5.10. Appropriate recommendations have also been made. The main one is to improve the quality of teaching methods implied through presentations on different topics form the lecture course and these to be sent to students via e-mail.

After his habilitation, Assoc. Prof. Karakashev was a supervisor of three students who have successfully defended their thesis with Excellent and Very Good grades. He has no PhD students up to now.

There is a list of 24 scientific forums the applicant has participated in - 11 international, 8 national and 5 Australian scientific forums. There is no other information about author`s participation in these forums available. It is recommended an additional information to be provided such as type of presentations - plenary, sectional oral reports or poster presentations, as well as which papers were submitted personally by the author and which with co-authors.

**Scientific contributions and Citations of the Applicant**

The research activity of the candidate corresponds to the profile of the procedure. Assoc. Prof. Karakashev's main scientific interests and contributions are generally focused on thin films and related dispersion systems such as foam and emulsions, as well as in the field of dynamic wetting. The self-assessment submitted in regard to the contributions of the scientific papers of Assoc. Prof. Karakashev reflects thoroughly and precisely the main conclusions in his publications.

What impresses most is the conclusion that Dr. Karakashev has written at the end of the author's report on scientific contributions concerning prospects for future development in regard to his current scientific interests focusing on ion-specific effects on foams, research on the properties of superspreaders, flotation of mineral particles, chemical instantaneous destruction of foams and

intelligent foams and emulsions. These scientific topics could be considered as an ambitious research plan by Dr. Karakashev for enhancing his scientific career.

The results achieved by Dr. Karakashev have impact on academic literature available, expressed by 938 citations of 68 articles (h-index 19). An unpleasant impression is made by the fact of a great number of self-plagiarism and cross-citation availability. My not quite precisely counting detected for about 155 cases of self-citations and about 80 cross-citations. The following articles are distinguished by the number of citations: No. 44 (*International Journal of Mineral Processing*, **2009**) – 64 times, No. 50 (*Minerals Engineering*, **2009**) - 51 times, No. 53 (*Current Opinion in Colloid and Interface Science*, **2008**) - 50 times, No. 59 (*Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2007**) - 50 times, No. 22 (*Advances in Colloid and Interface Science*, **2012**) – 46 times.

**Assessment of the Applicant's Personal Contribution and Personal Impressions**

The applicant`s personal contribution to the developed themes and publications is obvious and significant. The report on scientific contributions correctly summarizes the work done and reflects the scientific results achieved.

I know Prof. Karakashev and I have excellent impressions of his work and professional qualities. I could describe him as a hardworking, tolerant and extremely positive colleague with original scientific ideas and capacity for their realization. Besides, he is always responsible, correct and thorough researcher, with a high chemical knowledge and impressive intellectual capacity. Assoc. Prof. Karakashev fully responds to my notion to be a professor, both with his knowledge, competence and skills, as well as with his attitude to research and academic work.

**Critical Remarks and Recommendations**

I have no critical remarks about the materials which the applicant submitted to participate in the procedure for taking an academic position Professor, except the above-mentioned self-citations and cross-citations. Also, I have no critical remarks on the considerable scientific activity presented for the procedure. On the contrary, I would like to express my satisfaction with the completeness and precision of the presented materials, which fully meet the requirements of the Law and are an illustration of the overall excellent impression of the creative performance of the applicant. The documentation is complete which greatly relieves the work of the members of the scientific jury.

I would like to recommend Dr. Karakashev to be more actively involved in attracting students to the research work through scientific guidance of pupils and graduates and especially in his engagement as a scientific supervisor in the doctoral program in Physical Chemistry.

**CONCLUSION**

The documents and materials submitted by Assoc. Prof. Dr. Stoyan Karakashev meet all the requirements of the Regulations on acquiring academic degrees and occupying academic positions at the SU. The applicant has submitted a significant number of scientific papers published after the acquisition of the academic title of Associate Professor. The applicant has substantial scientific contributions in the field of thin films and related dispersion systems such as foam and emulsions that has received international recognition. The scientific and academic qualification of Dr. Stoyan Karakashev is undoubtedly highly appreciated. The results achieved in the research and academic

activities correspond to the specific requirements adopted in the Recommendations on the criteria for acquiring academic degrees and occupying academic positions at the SU in regard to the professional field "Chemical Sciences".

Once I have read the materials and scientific papers submitted and made an analysis of their significance and the scientific contributions contained in them, I find it worthwhile to give my positive assessment and to recommend to the Scientific Jury to make a report to the Faculty Council of the Faculty of Chemistry and Pharmacy to elect **Assoc. Prof. Dr. Stoyan Ivanov Karakashev** for the Academic Position **Professor** in the Faculty of Physical Chemistry in the Professional Field 4.2. Chemical Sciences, Scientific Specialty Physical Chemistry.

30. 07. 2019 Member of the Scientific Jury:
Sofia (Prof. Dr. Valerij Christov, PhD, DSc)