

Statement

on a competition for the academic position "Associate professor", professional field 4.2
Chemical Sciences (Physical Chemistry), announced in SG no. 45 / 28.05.2021

applicant Dr. Kamelia Pavlova Kamburova - Petkova, Chief Assistant Professor in IPC-BAS
by the Member of the Scientific Jury: Krastanka Georgieva Marinova, PhD, Associate
Professor at the Faculty of Chemistry and Pharmacy, Sofia University "St. Kliment
Ohridski "

1. General characteristics of the research activity of the candidate: The materials presented by the only candidate in the competition Chief Assist. Prof. Dr. Kamelia Kamburova meet the minimum national requirements of the the Act of Development of Academic Staff of the Republic of Bulgaria and the Regulations for its implementation, as well as the Rules of the Bulgarian Academy of Sciences (BAS) and the Regulations on the terms and conditions for obtaining scientific degrees and holding academic positions in the Institute of Physical Chemistry (IPC) of BAS. Kamelia Kamburova obtained a PhD degree in 2008 with a thesis entitled "Electrical properties and thickness of multilayer films of biopolymers on colloidal particles". She has been a chief assistant professor at IPC-BAS since 2011. For her participation in the competition, she has presented five publications as the equivalent of a habilitation thesis, and all five papers have been published in renowned scientific journals from the second quartile (Q2). Other 11 publications in renowned scientific journals (4 papers in Q1, 6 in Q2, and 1 in Q3), published after her PhD, are presented. The papers are well cited, with 176 citation in total, including in dissertations and book chapters. The total number of Dr. Kamburova's publications, referred to in the Scopus database is 21 (data from September 11, 2021) and the citations (without self-citations) are 156. 39 of these citations are on the five works presented as equivalent to a habilitation thesis. These numbers signify for the relevance and the high quality of the scientific work of Dr. Kamburova. The materials presented in the application cover the minimum national requirements and those of BAS and IPC as well: group A - 50 points (min req. 50 points), group B - 100 points (min req. 100 points), group D - 235 points (min req. 220 points), group D - 72 points declared (min req. 60 points).

2. Basic scientific contributions: Dr. Kamburova's research activity is in two main directions: (1) electrical properties of colloid particles in aqueous suspensions with added polyelectrolytes, and (2) multilayer polyelectrolytes films on colloid particles and surfaces. Different types of multilayer polyelectrolyte films have been very actively studied by the scientific community in the last 15-20 years following the tremendously increased applications of such layers as for encapsulation of active substances for medical, pharmaceutical, cosmetic and other applications as well as protective and/or surface modifying coatings. Dr. Kamburova's publications represent consistent and systematic studies of the main important characteristics of the various polyelectrolytes used in the volume of solutions and upon adsorption on particles and/or surfaces. Electro-optical methods are well applied for a detailed characterization of the observed processes and structures, the obtained data are described with appropriate theoretical models, consequently sound scientific interpretations and conclusions are formulated. The acquired new knowledge is

smartly applied for the construction of functionalized structures for special applications - from drug encapsulation to anti-corrosion steel coatings. I find that the presented publications contribute substantially to improve the knowledge and understanding on the structure and properties of composite polyelectrolyte layers and show great potential for applications in various fields with expected significant economic effects. IPC has especially awarded two of the publications presented as the equivalent of habilitation work as the most significant applied scientific achievements of the institute (for 2016 and 2020).

Dr. Kamburova is the first author of the five publications presented as the equivalent of a habilitation thesis correspondingly to her leading personal contribution in these studies. She is the first author of more than half of her publications, which confirms for her important role in most of her studies.

3. Impact of the scientific publications of the candidate in the Bulgarian and international literature: The significant number of citations (176 in the presented documents and 156 according to Scopus) clearly demonstrate a high appraisal of the international scientific community for the work of Dr. Kamburova. Results of the her works have been presented in a total of 45 oral presentations and posters at international and national conferences, as well as at 13 colloquia of the section "Surfaces and Colloids" of IPC-BAS.

Dr. Kamburova participates actively in a number of scientific projects of IPC and other BAS institutes which is another demonstration of the significance of her research for the accomplishment of various important scientific and applied tasks with national and international partners.

4. Critical notes and recommendations: I have no remarks on the presented scientific works and submitted materials. Dr. Kamburova's style is precise and clear. I have never worked directly with her, but her activities show well her good attitude to all types of work - scientific investigations, teaching, organizational tasks.

Conclusion: All submitted materials for the competition, high quality scientific publications, significant citation score, demonstrating well the competence of the candidate Dr. Kamburova and her motivation and organization, fully correspond to the requirements of the Act of Development of Academic Staff of the Republic of Bulgaria and the Regulations for its implementation for occupying the academic position Associate Professor. I am confidently giving a POSITIVE assessment and I recommend Chief Assist. Prof. Dr. Kamelia Pavlova Kamburova - Petkova to be elected to the academic position of "Associate professor" at IPC-BAS, in the professional field 4.2 Chemical Sciences, scientific specialty "Physical chemistry".

20.09.2021

Member of the Scientific

/Assoc. Prof. Krastanka Marinova/