

OPINION

from Prof. Tatyana Tabakova, PhD, Institute of Catalysis - BAS
with respect to the competition for occupying the academic position
“Associate Professor” at the Institute of Organic Chemistry with
Centre of Phytochemistry (IOCCP) - BAS in
Higher education field 4. Natural Sciences, Mathematics and informatics,
Professional field 4.2. Chemical Sciences, Scientific specialty Organic chemistry

Assistant Professor Dr. Ivanka Georgieva Stoycheva from the laboratory “Chemistry of solid fuels” at IOCCP - BAS is the only candidate applying for the academic position of “Associate Professor” in the competition, announced in „Newspaper of State”, issue 27, dated 05.04.2022 and on the website of IOCCP - BAS.

1. General presentation of the procedure and the applicant

The set of materials presented by Assist. Prof. Stoycheva is in accordance with the Rules for the Development of the Academic Staff of IOCCP - BAS, and meets the criteria of IOCCP - BAS for the academic position of "Associate Professor".

The applicant participates in the competition with 20 scientific papers, which include: 16 publications in scientific journals, indexed in international databases (Scopus and WoS) and 4 in journals with SJR without IF. The distribution of the scientific journals in which the papers have been published by quartiles (Q-factor) is as follows: Q1 – 4, Q2 – 6, Q3 – 1, Q4 – 5. All of them have been published after the acquisition of the educational and scientific degree “Doctor” (PhD) and 69 citations have been noted.

In 2013 Ivanka Stoycheva graduated from the master's program at the University of Chemical Technology and Metallurgy – Sofia and was enrolled as PhD student in specialty “Technology of natural and synthetic fuels” at laboratory “Chemistry of solid fuels” of IOCCP - BAS. She defended her doctoral thesis entitled “Synthesis of carbon materials derived from organic compounds” in 2013, after which she was appointed as assistant researcher (2016–2019). In 2019 she received the position of Assistant Professor.

2. General characteristics of the applicant's activities

Dr. Stoycheva is co-author of 35 research publications, among them 24 have been published in journals with IF (Q1 – 7, Q2 – 9, Q3 – 1, Q4 – 7), with SJR without IF – 8 and in journals without IF – 3. The number of noticed citations excluding self-citations is 80 (according Scopus, H-index 6). Significant personal contribution of Dr. Stoycheva in these studies and in summarizing of the results is highlighted by the fact that she is

first author in 14 and second author in 5 of the papers. Evidence of the research activity is the co-authorship of 15 articles in international journals published during the last 3 years (2020 – 2022). The results from the research carried out with the participation of Dr. Stoycheva have been presented at 77 scientific forums as 23 oral and 54 poster contributions. She obtained an award for the best presentation at scientific conference “Ecological products for health” – Velingrad 2020, and Certificate for 1st place at 18th Scientific session for young scientists, students and postdocs, organized by University of Chemical Technology and Metallurgy – Sofia, 2021.

Assist. Prof. Stoycheva demonstrates active participation in the implementation of research projects. Due to her expertise and ability for teamwork, she is a member of teams that have implemented or currently carry out 6 projects funded by European Union programs and Bulgarian National Science Fund, as well as 6 projects within the framework of Non-Currency Equivalent Exchange Contracts of Bulgarian Academy of Sciences with Romanian Academy and Polish Academy of Sciences. Since 2019 she is coordinator of a project under the program of Bulgarian National Science Fund for funding of research of junior researchers and postdocs. For the period 2018 – 2021 she has led a project funded by Ministry of education and science “Young scientists and postdocs”. Dr. Stoycheva has been a member of Program Committee of scientific conference “Ecological products for health” – Velingrad 2020.

The publications with which Dr. Stoycheva participates in the competition are divided into two groups covering indicators C and D in Table 2 of the Rules for application of Law for the development of the academic staff in the Republic of Bulgaria. The summary of scientific contributions includes results reported in 6 publications with IF (Q1 – 1, Q2 – 2, Q3 – 1, Q4 – 2). Proof of the significant contribution of the candidate in carrying out the experiments and results summarizing is the authors order - Dr. Stoycheva is the first author in 5 and the second author in 1 of the works included in indicator C. Contributions under indicator D are described in 14 papers. Due to the interdisciplinary nature of the conducted research, several co-authors are involved in the works. Regardless, I believe that Assist. Prof. Stoycheva has made an indisputable contribution to the studies and publications submitted for participation in the competition. The summary of scientific contributions contains also guidelines for future research activities, which is evidence of scientific competence and ability to plan and conduct independent studies.

The investigations performed by Assist. Prof. Dr. Ivanka Stoycheva are focused on very attractive topic which is environmental protection through the development of methods for organic waste utilization. By applying these methods, the conversion of organic waste from agricultural and industrial production into useful products has

been achieved. Carbon adsorbents with different characteristics have been synthesized and successfully applied in the purification of water from toxic organic (phenols, dyes) and inorganic (heavy metals) pollutants, as well as a construction material in aeronautics. As novelty could be considered the development of economically profitable approach for synthesis of carbon foam with an ordered porous structure and increased mechanical strength. Competent work with the modern and up-to-date equipment available in the laboratory allowed the candidate to reveal the mechanism of formation of the structure and texture of carbon materials. Finding a relationship between the thermal treatment conditions of carbon materials and the presence of surface oxygen-containing functional groups is crucial for the use of these materials as catalyst supports for hydrogen production by methanol decomposition or as an additive to hydrogen storage materials. Scientific contributions can be evaluated as scientific innovation and enrichment of existing knowledge, as well as application of scientific achievements in the practice.

CONCLUSION

The scientific activity and research metric indicators of Assist. Prof. Ivanka Stoycheva reflected in the materials submitted for participation in the competition meet and exceed the requirements for occupying the academic position of "Associate Professor", according to the Law for the development of the academic staff in the Republic of Bulgaria, The Regulations of BAS for the Implementation of this Law and the Regulations of IOCCP-BAS.

After acquaintance with the materials and scientific works submitted for the competition, analysis of their importance and the scientific and applied contributions reflected therein, I am convinced to give my positive assessment and recommendation to the Scientific Jury to prepare a report-proposal to the Scientific Council of IOCCP-BAS for the selection of Assist. Prof. Ivanka Georgieva Stoycheva, PhD, at the academic position of "Associate Professor" at IOCCP-BAS in the professional field 4.2. Chemical Sciences, scientific specialty Organic Chemistry.

01.08.2022

Member of the Scientific Jury:

/Prof. Tatyana Tabakova, PhD/