

REPORT

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From assoc. prof. D-r. Tatyana Stefanova Petrova

For Competition : Academic position (AP) "Associated Professor" in a professional field (PF) „4.2. Chemical Sciences ", specialty " Processes and apparatuses in chemical and biochemical technology "

announced: in Government newspaper, No. 65 of July 28, 2023, by the Institute of Chemical Engineering at the Bulgarian Academy of Sciences (ICHe-BAS), for the needs of the Laboratory "Transfer processes in multi-phase media"

with one candidate: Diana Ivanova Ivanova, assistance professor, doctor

1. Brief biographical data and characteristics of the applicant's scientific interests.

The candidate, assist. prof. dr. Diana Ivanova Ivanova, was born on December 17, 1965. She completed her higher education in 1988, as a Master of Chemistry, specialty "Chemical Physics and Theoretical Chemistry", at the Faculty of Chemistry, Sofia University "St. Kliment Ohridski". In 1992, he began full-time doctoral studies at the Institute of Organic Chemistry with Centre of Phytochemistry - BAS, Sofia, which in 1995 was transformed into part-time one. She successfully defended her PhD thesis in 2010 with a thesis on "Design, synthesis and antitumor in vitro action of new retinoids and other physiologically active substances". Dr. Diana Ivanova worked at IChE -BAS first as a chemist (from 2016), then as an assistant (2017-2021), and finally as a assistant professor from January 2021, until now; he has more than 6 years of work experience at IChE -BAS. Before entering IChE -BAS, she worked in two different BAS institutes, as a junior high school teacher and in a private company, too.

He has several long-term specializations abroad: (2002-2007) at the Institute of Genetics and Molecular Cell Biology, Strasbourg, France (2003-2004), at the Department of Organic Chemistry, University of Vigo, Spain (1989-1993), and in Moscow Institute of Fine Chemical Technology, Biocenter, Moscow, Russia. The candidate's short-term specializations/grants are in Poland and Germany, there are also two sponsored participations in conferences in the USA and France. He speaks English, German and Russian. The candidate participated in 3 project contracts, one of which is ongoing, the other two (BNSF and Erasmus Plus) have ended.

The scientific interests of the Assistant Professor Dr. Diana Ivanova can be summarized with the following key expressions: preparation of plant extracts, optimization of extraction processes, study of bioactivity of plant extracts, analysis of antitumor, antioxidant and antibacterial activity of natural products.

2. General characteristics of the research and scientific-applied activity of the candidate (including participation in national and European projects/contracts, expert activity, management of doctoral students, scientific-organizational activity, etc.).

The candidate has mainly scientific and scientific-applied activities. Quantitatively, the overall scientific-research, scientific-educational and applied activity of the candidate at the present moment and according to the documents submitted by her for this competition, is expressed through the following indicators:

- Total number of scientific publications: 21, 20 of them with impact factor (IF) and/or impact rank (SJR);
- Number of scientific publications other than those in PhD: 17, 16 of them with impact factor (IF) and/or impact rank (SJR);
- Total number of citations of all scientific publications: 50 (selected);
- H index (according to Scopus or Web of Science): 8;
- Total number of reports/posters published in the conference proceedings: no data ;
- Participation in 3 projects

Dr. Ivanova has presented data on participation in 3 projects for the period 2016-2023 (1 with BNSF (2016-2021) - participant, 1 under the Erasmus Plus program (2016-2021) between BAS and Medical University, Lublin , Poland - sole beneficiary; and 1 with Harvard University, Boston, USA (2016-present) - sole beneficiary). No data is given whether she had any scientific-organizational activity, as well as whether she

participated as a reviewer of publications/projects. In her biography, the candidate also reports her teaching experience at the Eurostar Private Junior High School, Sofia (2007-2008).

3. Evaluation of the presented materials (number and characteristics of the presented works - scientific publications, monographs, research)

The candidate has submitted for the current competition the complete set of required documents and supporting evidence certifying: a) meeting the minimum requirements for the academic position (AP) "Associate Professor" in PF 4.2 "Chemical Sciences", according to the Regulations on the Terms and Procedures for the Acquisition of Scientific degrees and occupying academic positions at the BAS/3.09.2019, and b) meeting the additional requirements of IChE-BAS for the appointment of AP "associate professor", according to the Methodology for the growth of scientists at IChE-BAS, Appendix 1.

I checked the sources indicated by her for each of the indicators in items a) and b), and I accept and agree with the points calculated by the applicant in the references for meeting the requirements under items a) and b).

The candidate submitted 17 co-authored articles in journals with IF/SJR out of a total of 21 (including those in the PhD thesis) and 50 selected citations in journals with IF/SJR for the current competition. After checking in Scopus, Hirsch index of Dr. Ivanova is 8, excluding self-citations, based on a total of 241 citations of all her works. According to the two tables below, the presented assets fully satisfy the minimum number of points for covering the minimum and additional criteria for holding AP "associate professor" under this competition, and for item b) they even exceed them, namely:

	A. PhD degree	B. DSci degree	C. Monography/ publications in Web of science/Scopus	D. Publications Besides Monography/publica tions in C	E. Citations (Web of Science /Scopus)
Covered	50	---	100	223	100
Required (min)	50	---	100	220	60

	T.1 Publications outside PhD to be ≥ 15	T.2 All publications ≥ 20 , from which 15 in referred journals. At least 5 of them with $IF \geq 0.5$ or $SJR \geq 0.25$	T.3 Citation $s \geq 20$	T. 4 Hirsch factor optional
Covered	17	21 (20), 20	50	8*
Required IChE	15	20 (15), 5	20	4

* 4 by Researchgate, 8 by Scopus (exclude self-citations)

4. Main scientific and scientific-applied contributions.

The presented publications and patents summarize the scientific and scientific-applied contributions of the candidate in the field of research and optimization of the conditions for obtaining bioactive plant extracts:

- 1) Obtaining bioactive plant extracts and optimizing the conditions for extracting antiproliferative substances from natural raw materials;
- 2) Study of the mechanism of action of synthesized analogues of natural substances with optimized bioactivity;
- 3) Preparation of plant extracts with high bioactivity and optimized content of bioactive substances;
- 4) Preparation of synthetic analogues of natural substances as ligands of bioactive proteins;
- 5) Application of metronomic therapy with cytostatics of plant origin or synthetic antimetabolites in combination with hormone therapy in clinical trials

The main contributions of the presented materials could be summarized, in my opinion, as follows: enrichment of existing knowledge and theories (for the scientific ones) and proposals for the application of scientific achievements in practice (for the scientific-applied ones), in the above-mentioned publications presented by the candidate.

I appreciate and agree with the candidate's described scientific and scientific-applied contributions from her research, as presented. The emphasis is on scientific and applied contributions, in particular those related to the application of plant extracts with bioactive components for medical purposes, as an additional therapy in the treatment of oncological diseases.

I believe that the personal contribution of the candidate is clearly visible enough - in 17 publications presented for the competition, she is in first place in 11, at second in 1, at third in 3, at fifth in 1 and at eighth in 1. It can be seen from the submitted materials and documents for this competition that Assistant Professor Diana Ivanova, PhD, has sufficient qualifications, skills and experience in the field of her scientific interests, both at the national and international level.

5. Reflection of the candidate's scientific publications in the Bulgarian and foreign literature.

The selected citations of the publications for the competition presented by the candidate exceed almost twice the required minimum (see the comments and tables in item 3).

6. Critical remarks and recommendations.

I have no comments. I would recommend in the future to present more information about participation in conferences, as well as about organizational and expert activities.

7. Personal impressions of the reviewer about the candidate.

I have known Dr. Ivanova since he start to work in IChE-BAS.

CONCLUSION

Based on the above, I believe that the candidate in this competition for AP "Associate Professor" at IChE-BAS, assist. prof. Dr. Diana Ivanova Ivanova, **fully satisfies and meets the minimum requirements** for the academic position (AP) "Associate Professor" in PF 4.2 "Chemical Sciences", according to the Regulations on the terms and conditions for acquiring scientific degrees and holding academic positions at BAS /3.09.2019, as well as the additional requirements of IChE-BAS for holding AP "Associate Professor".

I propose to the esteemed jury and to the National Assembly of IEES to vote positively on the following proposal for decision: "Assist. prof. Dr. Diana Ivanova Ivanova to be elected to the academic position of "Associate Professor" at the Institute of Chemical Engineering - BAS, under PF 4.2 "Chemical Sciences", "Processes and apparatus in the chemical and biochemical technology", for the needs of the Laboratory "Transfer processes in multi-phase media".

Date

09.11.2023

Prepared the report:


/Assoc. Prof. Dr. Tatyana Petrova, IChE-BAS/