

## STANDPOINT

by **Assoc. Prof. Dr. Petinka Radeva Galcheva**

**Konstantin Preslavsky University of Shumen**

of the materials submitted for participation in the contest

for the academic position of 'Associate Professor'

**of Plovdiv University "Paisii Hilendarski"**

in the field of higher education 1. Pedagogical sciences

professional field 1.3. Pedagogy of teaching... (Methodology of teaching chemistry)

In the contest for 'associate professor', announced in the State Gazette, issue 40 of 14.05.2021 and on the website of Plovdiv University "Paisii Hilendarski" for the needs of the Department of General and Inorganic Chemistry with Methodology of Chemistry Education at the Faculty of Chemistry, as candidates participate Antoaneta Atanasova Angelacheva and Yordanka Petrova Stefanova from Faculty of Chemistry of Plovdiv University.

### **1. General presentation of the procedure and the candidate Yordanka Stefanova**

With order № P33- 3163 from 13.07.2021. of the Rector of Plovdiv University "Paisii Hilendarski" (PU) I have been appointed a member of the scientific jury of a contest for the academic position of 'associate professor' in PU in the field of higher education 1. Pedagogical sciences, professional field 1.3. (Methodology of teaching chemistry), announced for the needs of the Department of General and Inorganic Chemistry with Methodology of Teaching Chemistry at the Faculty of Chemistry.

The following candidates have submitted documents for participation in the announced contest: Chief Assistant Doctor Antoaneta Atanasova Angelacheva, - Plovdiv University Paisii Hilendarski and Chief Assistant Doctor Yodanka Petrova Stefanova, Plovdiv University Paisii Hilendarski.

The set of materials presented by Yordanka Stefanova is in accordance with the Rules of Development of the Academic Staff of the PU, and includes all necessary documents.

The candidate Yordanka Stefanova has applied a total of 22 scientific papers, of which 2 monographs, 6 articles in referenced and indexed editions, 14 articles in unreferenced scientific publications.

Chief Assistant Doctor Yordanka Stefanova is a graduate of Plovdiv University "Paisii Hilendarski", where she received a master's degree with professional qualification Teacher of Chemistry and Physics. Her professional career began in 1987 as a chemistry teacher at "Cyril and Methodius" Primary School, Parvomay, where she worked until 1989. Since 1989 she has been an Assistant, Senior Assistant and now Chief Assistant at the Chemical Faculty of Paisii Hilendarski University. In 2008 she acquired the science degree "Doctor" in the scientific specialty

Methodology of teaching chemistry.

The presented facts from the professional CV of Stefanova PhD are in full compliance with the Law for development of the academic staff the Republic of Bulgaria and the requirements of art. 65 of the Regulations for the development of the academic staff of Plovdiv University Paisii Hilendarski.

## **2. General characteristics of the candidate's activity**

From the submitted author's reference on the additional indicators under Art. 57a (2) of PPZRASRB and Art. 69 (2) of the Regulations for the development of the academic staff of Plovdiv University "Paisii Hilendarski" it is evident that the teaching activity of Ch.Assistant Stefanova PhD meets the established criteria and includes: classroom activity (lectures and seminars) in Faculty of Chemistry of PU in academic disciplines, corresponding to the topic of the contest; participation in the development of curricula and lecture courses for students with Bachelor's and Master's degrees; independently and in co-authorship development of teaching aids for students; participation as a trainer of pedagogical specialists under the MOMN program; head of doctoral study of a postgraduate.

In the contest for Associate Professor J. Stefanova PhD participated with 22 scientific publications (outside the list of publications to the dissertation), of which two monographs and 20 articles. Six of the articles are in scientific journals, which are included in the global system of referral, indexing and evaluation. In monographs and 5 of the articles, the candidate is an independent author. 8 of the publications are in English.

In terms of quantitative criteria and type of scientific work the scientific output of Stefanova PhD meets the profile of the competition and satisfies the minimum national and faculty requirements for the academic position "Associate Professor". The total number of points is 497.

The book *The Explanation in Chemistry Education* is based on the dissertation work of Stefanova PhD. The theoretical review addresses the philosophical, methodological and didactic aspects of explanation and explanation in the context of the ideas of constructivism. Sample tasks and methodological options are proposed for organizing self-construction of explanations by students. In the annotation to the book, Stefanova PhD states that they have been experimented in a real environment and have proven their effectiveness, but there is no pedagogical experiment in the monograph and publications to the department that proves this claim.

The monograph *Modern educational technologies in chemistry and environmental protection education* shows the author's vision of possible applications of personalized educational technologies in the subject chemistry and environmental protection. The theoretical foundations of the study are based on a study of 72 literary and 5 internet sources. Methodological solutions for the realization of the education in cooperation and project training are described.

Dr. Stefanova identifies as the most suitable for the education in chemistry and

environmental protection three "technologies" - collaborative learning, inverted classroom and project training. I would like to draw attention to the terms used. There is no general opinion in the scientific literature, including that cited by the applicant, on the definition of the technologies chosen by the applicant as such. Since Stefanova PhD does not express her opinion on the content of the concept of educational technology in the monograph, I have the following question: "Are all examples, presented in the monograph - collaborative learning, inverted classroom and project training, educational technologies or can be seen as methods, shapes, models and why?"

The main group of articles present the author's searches towards the possibilities for the formation of scientific literacy in students (No. 1,2,6, 11,12,14,16). The state documents related to the problem have been analyzed, the opinion of teachers and students, and the attitude of students have been studied. Examples of tasks for establishing the scientific literacy of students are proposed. A methodological model for applying a research approach in chemistry and environmental protection education has been developed in order to develop the scientific literacy of students.

In the light of the constructive ideas and practices in publications No 4, 13,15,18, methodological models for describing and explaining facts and phenomena and solving cognitive problems are presented.

The main highlights in the other publications are related to: the output of operational models for explanation in the chemistry and environmental protection education (No 3,10); analysis of survey results with teachers, students and students (No 5,8,9); use of nanotechnologies in the food industry (No20).

J. Stefanova has participated in one national and three university projects, 2 scientific conferences abroad and 7 in Bulgaria.

Six publications of Dr. Stefanova are marked in co-authorship of which 2 in referenced and indexed editions and 11 in unreferenced journals with scientific review. Positive is the fact that 11 citations are from foreign authors, which indicates recognition of the scientific production of the candidate.

In the author's report, scientific contributions are grouped thematically in 4 scientific fields. Without downplaying Dr. Stefanova's author's view, I believe that the grouping could be precise in order to highlight the most significant of the candidate's own contributions. By analyzing the nature of the publications included in strand No3 Formation and development of key competences (three in number), only publication No5 partially corresponds to the formulated problem area. Publications Nos 8 and 9 present results of surveys on significant life skills of students of different specialties and the degree of manifestation of certain socially significant abilities of students, but do not offer methodological solutions for the formation and development of key competences. Furthermore, according to formal criteria, publication No 8 has the volume and nature of a

scientific communication. In this regard, "... competences' and '... scientific literacy' can be subordinated, insofar as scientific literacy is a component of key competences. By adding the ways (approaches, methods and means) for the formation and development of key competences, a problematic area with a higher number of developments will be highlighted, which will correspond to the direction thus formulated.

In reviewing the contributions, it is bewildering that, in the presence of two monographs, none of them are assigned to any of these strands.

### **3. Critical remarks and recommendations**

1. It is advisable to check materials for technical and grammatical errors in the preparation of documentation, regardless of what nature, and to better group and structure the documentation itself.

2. The candidate has enough teaching experience and good theoretical preparation, which a prerequisite to direct her attention to publications in scientific journals, referred to and indexed in world-famous data bases with scientific information.

3. Given the candidate's interest in modern educational technologies, I would recommend that Dr. Stefanova also focus on the possibilities of more modern technologies entering the training – digital technologies, virtual reality, augmented reality, gameization, etc.

The remarks made do not lower the general positive assessment of the scientific papers written by Chief Assistant Jordanka Stefanova PhD, but aim to improve her future work.

### **CONCLUSION**

The results achieved by Stefanova PhD in the educational and research activities comply with the specific requirements of the Faculty of Chemistry, adopted in connection with the Regulations of Plovdiv University for the application of the Law for development of the academic staff in the Republic of Bulgaria.

After getting acquainted with the materials and scientific works presented in the contest, analysis of their significance and contained in them scientific, scientific-applied and applied contributions, I find it reasonable to give my positive assessment and recommend to the Scientific Jury to prepare a report-proposal to the Faculty Council of the Faculty of Chemistry for the election of Yordanka Petrova Stefanova to the academic position of 'Associate Professor' at the Plovdiv University "P. Hilendarski "by professional field 1.3. Pedagogy and teaching in... (Methodology of teaching chemistry).

05.09.2021

Shumen

The Standpoint was complied by: .....

(Assoc. Prof. Petinka Galcheva PhD)