

EXPERT OPINION

by Dr. Margarita Yordanova Panayotova
Associate Professor at Plovdiv University "P. Hilendarski", Faculty of Biology,
Department of Botany and Methodology of teaching biology of the materials submitted for

participation in the competition for holding the academic position "Associate Professor"
of Plovdiv University "Paisii Hilendarski" in the field of higher education –

1. Pedagogical sciences; professional field 1.3. Pedagogy of teaching in...
scientific specialty "Methodology of teaching chemistry"

to the Department of General and Inorganic Chemistry with the methodology of teaching
chemistry of the Faculty of Chemistry

In the competition for "associate professor", announced in the State Gazette, issue 40 / 14.05.2021 and on the website of Plovdiv University "Paisii Hilendarski" for the needs of the Department of General and Inorganic Chemistry with the methodology of teaching chemistry at the Faculty of Chemistry, as a candidate **PhD Yordanka Petrova Stefanova**, Chief Assistant in the same department.

1. General presentation of the procedure and the candidate

General presentation of the procedure and the candidate with order 33 № P33-3163 of 13.07.2021 of the Rector of the University of Plovdiv "Paisii Hilendarski" (PU) in connection with the competition for holding the academic position "Associate Professor" announced in SG No. 40/14.05.2021 for a member of the scientific jury in the field of higher education 1. Pedagogical sciences, professional field 1.3. to the Faculty of Chemistry.

The only candidate for one of the places in the announced competition was Dr. Yordanka Petrova Stefanova, chief assistant in Department of General and Inorganic Chemistry with the methodology of teaching chemistry at the Faculty of Chemistry of PU "P. Hilendarski". The set of materials presented by her on electronic media is in accordance with the Regulations for development of the academic staff of PU and includes all necessary documents.

Out of a total of 40 publications, the candidate has submitted for review a total of 22 scientific papers, of which: two monographs, one presented as a habilitation thesis, and one book based on a defended dissertation for the award of Educational Scientific Degree, 6 articles in journals refereed in SCOPUS / WEB of SCIENCE, 5 articles in international journals without impact factor, 9 articles in non-refereed journals with scientific review. 5 of the articles are independent - two issues. in English and one in Russian. 4 textbooks have been published in co-authorship and 1 independently - all published by the University Publishing House "P. Hilendarski".

Documents (in the form of official notes and references) for participation in two national and four university projects as a member of the research teams are also attached; 4 participations in seminars and trainings; 9 participations in scientific conferences and symposia, 2 of which abroad.

Ch. Assistant Dr. Yordanka Stefanova has been working at the P. Hilendarski University of Plovdiv for 32 years. During this period she grew and developed in her teaching and research activities. All submitted works for the academic position of "Associate Professor" are at a high scientific level, have undeniable practical and applied significance and are the result of many

years of targeted research of the candidate. I know her as a responsible, executive, thorough and respected colleague.

2. General characteristics of the candidate's activity

Ch. Assistant Dr. Yordanka Stefanova has a rich and diverse educational and pedagogical activity. She conducts 3 lecture courses in compulsory subjects and 5 lecture courses in elective and optional disciplines, seminars and laboratory exercises, for six of which she has developed the respective curricula: for different specialties of Bachelor's and Master's degrees - full-time and part-time training, taking into account the specifics of each specialty. To ensure the indicated lecture courses and exercises he is the author or co-author of 4 pieces. teaching aids.

The average workload for hours for the last five years (from 595 to 630 hours) exceeds the set norm for study employment of 360 hours at P. Hilendarski University of Plovdiv. The accumulated experience allows her to successfully bring out a doctoral student, expelled with the right to defense by order P33-876 from 9.03. 2021.

The materials submitted for review determine the field of scientific and scientific-applied activity of Ch. Assistant Dr. Yordanka Stefanova in four thematic areas: Formation and development of scientific literacy with 6 publications; Application of a constructivist approach in the teaching of chemistry with 5 publications; Formation and development of key competencies - with 3 publications and the Explanation in chemistry education - in 1 article and 1 book on the same topic. The mentioned 13 citations - 2 in scientific journals, referenced and indexed in world-famous and national databases with scientific information and 11 in non-refereed journals with scientific review, define the candidate as a recognizable scientist in the respective field. The reference for fulfillment of the minimum requirements for acquiring the academic position "associate professor" shows that Ch. Assistant PhD Yordanka Stefanova exceeds the national required minimum of points: according to criterion D instead of 200 points, there are 262 points, and according to criterion D instead of 50 points - 85 points. The additional requirements of the Faculty of Chemistry for teaching 1080 hours of classroom classes with students are doubled - 2174 hours in four years.

The content analysis of the main scientific, scientific-applied, applied and methodical materials in the four main directions in the scientific-practical research of Ch. Assistant Dr. Yordanka Stefanova, shows a significant contribution to the theory and practice of the methodology of teaching chemistry. The following are more significant: student-oriented educational technologies are analyzed in the context of chemistry education; The explanation is characterized as a method of teaching and as a cognitive procedure in the activity of the students and on this basis different models for inductive and deductive explanation of facts are made, as well as a system of different types of tasks for explanation. They have been experimented in a real learning environment and their effectiveness has been proven. The possibilities for application of the explanation in the teaching of chemistry on the basis of the constructivist approach are outlined in detail.

The peculiarities and essential characteristics of collaborative learning, inverted classroom and project learning are presented and many models for their application in practice are given.

The formation and development of scientific literacy in pupils and students is the subject of research in six publications. The obtained data would be useful to the compilers of curricula for chemistry education in view of the practical and applied orientation of the system of knowledge in biology and chemistry studied at school.

The ideas of science teachers and students about the key competencies and the main groups of abilities that young people should have were studied. The obtained results can serve as a guide for their development in the process of their professional training in Higher Education Institutions.

All the listed contributions expand, deepen and supplement the content of the methodology of teaching chemistry.

I firmly accept that the indicated contributions and results, both in the articles and in the textbooks and in the attached monographs, are a personal achievement and merit of Ch. Assistant Dr. Yordanka Stefanova.

3. Critical remarks and recommendations

The self-assessment of the scientific contributions of the submitted materials for participation in the competition for the academic position of "Associate Professor" could be more categorical and detailed in terms of the applicability of the results in the theory and practice of the Methodology of teaching chemistry.

Based on the research potential that the candidate demonstrates in the outlined areas of scientific research, I recommend Ch. Assistant PhD Yordanka Stefanova to focus on greater independence and to publish more material in foreign specialized journals.

CONCLUSION

The documents and scientific papers submitted by the candidate Ch. Assistant Professor Dr. Yordanka Stefanova are prepared and shaped thoroughly and clearly. They meet the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for implementation of ZRASRB and the respective Regulations of PU "Paisii Hilendarski".

The candidate in the competition has presented a significant number of scientific papers published after the materials used in the defense of the Educational Scientific Degree "Doctor". In the works of the candidate there are original scientific and applied contributions, as a representative part of them are published in journals and scientific collections published by national and international academic publishers. Theoretical developments have practical applicability, as most of them are directly oriented to the educational work.

The scientific and teaching qualification of Ch. Assistant Dr. Yordanka Stefanova is undoubted. The results achieved by her in the teaching and research activities fully comply with the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB) for holding the academic position of "Associate Professor".

After getting acquainted with the materials and scientific papers presented in the competition, 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 election of **Ch. Assistant Dr. Yordanka Stefanova** at the academic position of "Associate Professor" at the University of Plovdiv "P. Hilendarski" by professional field 1.3. Pedagogy of teaching..., scientific specialty "Methodology of teaching chemistry".

01.09.2021

Prepared the standpoint:

/Assoc. Prof. PhD Margarita Panayotova/