

OPINION

by Prof. Malcho Malchev, PhD

Regarding: occupation of the academic position of "associate professor" by Dr. Radostina Strahilova Vasileva-Tcankova in the field of higher education 1. Pedagogical sciences, professional direction 1.3. Pedagogy of teaching in...(Methodology of teaching in chemistry) in the Department of "Chemistry" at the Faculty of Natural Sciences of Shumen University "Bishop Konstantin Preslavski".

Basis – Order of the Rector of the School of Education No. RD-16-023/09.03.2023

1. According to the procedure of the competition and the candidate

The competition for the occupation of an academic position "associate professor" in the field of higher education 1. Pedagogical sciences, professional direction 1.3. Pedagogy of teaching in... (Methodology of teaching in chemistry) in the "Chemistry" department at the Faculty of Natural Sciences of the Shumen University "Bishop Konstantin Preslavski" was announced in the "State Gazette", issue 4 of 13.01.2023. He participated in it the only candidate, Dr. Radostina Strahilova Vasileva-Tcankova, who submitted an application dated 16.02.23 to the Rector of the University with an accompanying list and all other necessary documents within the deadline. From the reference of the candidate for the competition, Dr. Tcankova, for the fulfillment of the minimum national requirements stipulated by the ZRASRB under Art. 2b, para. 2 and 3 (number of points according to indicators for occupying the academic position of associate professor), with the relevant evidence it is clear that the **total number of points according to indicators A+B+C+D is 425 out of the required 400**. From what has been stated so far, the conclusion follows, that the procedure is lawful.

Ch. assistant professor Dr. Radostina Strahilova Vasileva-Tcankova graduated in 1998 at the Master's College of Higher Education "Episcop Konstantin Preslavski" in the specialty "Chemistry". He acquired the professional qualification "Organic Chemist". After a successfully defended dissertation in the scientific specialty 07.05.03 "Methodology of teaching in chemistry", with a protocol dated 21.05.2009, the VAC awarded her a Doctorate of the National Academy of Sciences.

From 01.03. In 2021, he worked at the School of Chemistry in the Department of Chemistry as a chief assistant doctor. Until then, she worked as a chemistry and environmental protection teacher at „Sava Dobroplodni“ Secondary School, „Traiko Simeonov“ Secondary School in Shumen and in other institutions.

The areas of scientific interests of Dr. Radostina Strahilova Vasileva-Tcankova are mainly: 1) in the Methodology of teaching chemistry and 2) Interactive methods in teaching chemistry and environmental protection.

Leads 14 academic disciplines in the "Bachelor's College" and 11 academic disciplines in various master's programs.

2. Scientific production

The scientific publications with which the Assistant Professor Dr. Radostina Strahilova Vasileva-Tcankova participated in the announced competition for the academic position "docent" are presented in the review list: habilitation thesis - monograph - 1 pc.; published monograph, which is not presented as the main habilitation work - 1 piece; articles and reports – 7 nos.

1. Vasileva-Tcankova, R. Possible semiotic approaches in teaching and learning chemical symbols in seventh and eighth grade, Monograph, „Libra Scorp“ Publishing House, Burgas, 2022, ISBN 978-954-471-882-4.

The monographic work is intended for students, teachers and researchers in the field of chemistry. We can accept the author's assessment that the topic and development are markedly current. The monograph mainly focuses on studying the types of chemical symbols in the seventh and eighth grade (chemical symbols, formulas and equations). Chemical symbolism is an important component of the "chemical language" sign system, whose role, meaning and place in education have been repeatedly studied during the individual stages of the development of the methodology of teaching chemistry and pedagogical school practice. This determines the applicability of monographic work in our educational system. The main contribution is the development of a methodological system, including tasks, exercises and summary lessons in the teaching content of Chemistry and Environmental Protection for the seventh and eighth grades and the presentation of the results to establish the effectiveness of the developed methodological system. There should be no doubt about this - the reviewers of the monograph are authoritative scientists and teachers of the Shumen University, Prof. Ph.D. Hristomir Hristov and Prof. Ph.D. Neli Dimitrova.

2. Vasileva-Tcankova, R. Modern methods, approaches and technologies of education in chemistry and environmental protection, Monograph, "Libra Scorp" Publishing House, Burgas, 2022, ISBN 978-954-471-883-1. (Monograph, which is not presented as the main habilitation thesis)

The monograph was developed for the benefit of students - future teachers of Chemistry and Environmental Protection and teachers teaching this subject at school. In teaching practice, a relatively low level of assimilation of chemical symbols is established, which is confirmed by the students' inability to use them in studied or similar situations. Insufficient meaningfulness and impermanence of knowledge is found, which leads to the mechanical learning of symbols and is the reason for lowering the interest and achievements of students in the specified subject. The author offers new ideas for solving the problems related to the successful introduction and learning of the components of the chemical language.

The first chapter of this monograph presents the theoretical foundations and problems regarding the tasks, content and teaching methods in Chemistry and environmental protection. The methodology of teaching chemistry as a science, the requirements regarding the knowledge and skills of students according to the State Educational Standards, as well as the goals and tasks of teaching Chemistry and environmental protection are presented.

In *the Second Chapter*, modern approaches in teaching Chemistry and environmental protection are presented in a different way, such as a situational approach, a competence approach, a constructivist approach, a reflexive approach and an ecological approach.

In *the Third Chapter* of the monographic work, modern pedagogical technologies in the teaching of Chemistry and environmental protection are presented in a different way from the previously known educational, pedagogical and didactic technologies.

3. Articles - in the contest the candidate participates with a total of 7 publications.

- 5 articles published in scientific publications, referenced and indexed in world-famous databases with scientific information, of which 2 articles are co-authored and 3 are independent works:

1. Antonova, L., Galcheva P., Vasileva R. Using a semantic approach to introduce chemical equations. In: Chemistry, p. X, vol. 5, 2001, pp. 309-316.

2. Antonova, L., Vasileva-Tcankova, R. Semiotic approaches to the study of chemical symbols. In: Chemistry, item XVII, volume 3, 2008, pp. 181-191.

3. Vasileva-Tcankova, R. Didactic model of the "Chemistry training process" system applying semiotic approaches. Acta Scientifica Naturalis, Vol. 9, No. 2, Pages 25–33, 2022, DOI: <https://doi.org/10.2478/asn-2022-0012>, Journal homepage: <https://content.sciendo.com/view/journals/asn/asn-overview.xml>

4. Vasileva-Tcankova, R. Experimental study on the impact of semiotic approaches on students' knowledge of chemical symbolism in seventh and eighth grade. Acta Scientifica Naturalis, Vol. 9, No 2, Pages 34 - 62, 2022, DOI: <https://doi.org/10.2478/asn-2022-0013>, Journal homepage: <https://content.sciendo.com/view/journals/asn/asn-overview.xml>

5. Vasileva-Tcankova, R. Global Ecological Problems of Modern Society. Acta Scientifica Naturalis, Vol. 9, No 2, Pages 63 - 86, 2022, DOI: <https://doi.org/10.2478/asn-2022-0014>, Journal homepage: <https://content.sciendo.com/view/journals/asn/asn-overview.xml>

- 2 co-authored articles published in non-refereed peer-reviewed journals or published in edited collective volumes:

1. Antonova, L., Vasileva-Tcankova, R. Syntactic relations between signs in chemical symbolism and their relationship with the conceptual subsystems "substance" and "chemical reaction" in the 7th grade. "Bishop Konstantin Preslavski" University Yearbook - Natural Sciences - Methodology, vol. XVI B3, "Bishop Konstantin Preslavski" University Publishing House, Shumen, 2006, pp. 53 - 62, ISSN 1311-834X.

2. Vasileva-Tcankova, R., Antonova L. Using a pragmatic approach to studying chemical reactions and ways to denote them. Bishop Konstantin Preslavski University Yearbook - Natural Sciences - Methodology, p.XVI B3, "Bishop Konstantin Preslavski" University Building, Shumen, 2006, c.63-75, ISSN 1311-834X.

4. Citations

We have reason to point out that the mentioned publications with which Dr. Radostina Strahilova Vasileva-Tcankova applied are of interest to the pedagogical community. Citations are found in 7 publications, of which: 1 no. in a monograph, collective volumes with scientific review - 1 issue, and 5 citations in materials in non-refereed journals with scientific review. The data is extracted from the attached citation report submitted by the applicant.

5. Contributions

Regarding the reference presented in Document No. 8 for original scientific contributions of Ch. assistant professor Dr. Radostina Strahilova Vasileva-Tcankova, I find that the abundance of contributions are explicitly reasoned, but I do not deny the possibility of correcting their multitude by skillfully combining them, as far as the scientific material allows this. Some of them sound like a narrative, others more like recommendations or have a probabilistic nature.

6. Conclusion: the studied published works of the candidate, the points of contribution as well as the reference for the fulfillment of the minimum national requirements under Art. 2B, para. 2 and 3 of the ZRASRB give me the basis for the conclusion that defends my proposal for the election of Dr. Radostina Strahilova Vasileva-Tcankova for the academic position of "associate professor", namely:

Based on the facts and evidence described in the opinion regarding the academic and research activities of the Assistant Professor. Dr. Radostina Strahilova Vasileva-Tcankova,

I propose to the respected scientific jury to vote with a positive vote on her election to the academic position "docent" in the field of higher education 1. Pedagogical sciences, professional direction 1.3. Pedagogy of training in... (Methodology of teaching in chemistry) for the needs of the Department of "Chemistry" at the Faculty of Natural Sciences of the Shumen University "Episcop Konstantin Preslavski".

28.04.2023

Noisy Signature:M.....
(prof. M. Malchev, PhD)