

OPINION

by Assoc. Prof. Dr. Veronika Atanassova Karadjova

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regarding the materials submitted for participation in the competition for the academic position of
Associate Professor at the Paisii Hilendarski University of Plovdiv.

Field of Higher Education: 4. Natural Sciences, Mathematics and Informatics
Professional Field: 4.2. Chemical Sciences (General and Inorganic Chemistry)
Department of General and Inorganic Chemistry with Methodology of Chemistry Education,
Faculty of Chemistry

1. General Overview of the Procedure and the Candidate

By Order No. RD-22-55 of 09.01.2026, issued by the Rector of Paisii Hilendarski University of Plovdiv, I was appointed as a member of the Scientific Jury in a competition for the academic position of Associate Professor in Field of Higher Education 4. Natural Sciences, Mathematics and Informatics, Professional Field 4.2. Chemical Sciences, announced for the needs of the Department of General and Inorganic Chemistry with Methodology of Chemistry Education at the Faculty of Chemistry.

Only one candidate has applied for participation in the competition – Chief Assistant Professor Dr. Kirila Trifonova Stojnova from Paisii Hilendarski University of Plovdiv.

The set of materials submitted by the candidate is carefully prepared and fully complies with the Regulations for the Development of the Academic Staff of the university. The candidate has submitted a total of 30 scientific publications, including 21 publications indexed in Scopus and/or Web of Science, 1 publication in a national scientific journal, and 8 publications submitted under Indicator 4 (“Habilitation Thesis”). In addition, the documentation includes two teaching manuals for practical exercises in General and Inorganic Chemistry, 36 participations in scientific conferences, and a list of five research projects.

For the purposes of the present evaluation, 21 scientific publications (excluding the doctoral dissertation), two teaching manuals, and 37 citations have been accepted for review. All publications are provided in full text, with no remarks regarding missing documentation or overlapping content.

Chief Assistant Professor Dr. K. Stojnova has been employed at Paisii Hilendarski University of Plovdiv on a full-time contract since 30 August 2012, at the Department of General and Inorganic

Chemistry with Methodology of Chemistry Education within the Faculty of Chemistry, where she continues to work at present. As of 15 December 2025, she has accumulated 14 years of total professional experience, including 13 years of teaching experience, 10 of which as Chief Assistant Professor. She obtained the educational and scientific degree PhD 11 years ago.

After reviewing the submitted documentation, I confirm that the scientific output of the candidate meets the minimum national requirements, as defined in the Development of the Academic Staff in the Republic of Bulgaria Act and the Regulations for the Implementation of the Development of the Academic Staff in the Republic of Bulgaria Act, as well as the additional faculty requirements for the academic position of Associate Professor. The candidate's publications, professional qualifications, and teaching experience correspond fully to the scientific field of the announced competition.

2. General Characteristics of the Candidate's Academic Activity

Dr. K. Stojnova has more than 13 years of teaching experience at Paisii Hilendarski University of Plovdiv. During the period 2015–2025, she has fulfilled the required annual teaching workload of 360 hours, frequently exceeding this requirement, with a total of over 5,300 teaching hours over a ten-year period, actively participating in both classroom and extracurricular forms of instruction.

She teaches courses in the field of General and Inorganic Chemistry, including:

- General and Inorganic Chemistry – Part I and II
- Stoichiometric Calculations – Part I and II
- Chemistry of Coordination Compounds
- Analysis and Control
- Science Education in Lower Secondary School

The teaching activities are directed toward Bachelor's and Master's degree students and include lectures, seminars, and laboratory exercises. Dr. Stojnova maintains a high standard in the educational process through the development and implementation of diverse teaching materials and by supervising undergraduate theses while applying modern teaching methods. She is also the author of educational manuals and materials that contribute to the quality of the educational process. The candidate is a co-author of 30 scientific publications, 29 of which are published in journals indexed in the international databases Scopus and/or Web of Science, demonstrating a strong international publication profile. Among these publications, 4 are ranked in Q1 journals, 2 in Q2, 17 in Q3, and 6 in Q4, indicating a consistent scientific presence.

Three scientific publications were used in connection with the defense of her PhD dissertation, all published in refereed and indexed journals.

For participation in the competition for the academic position of Associate Professor, 21 publications have been submitted, published in well-established international peer-reviewed journals with recognized indexing.

The habilitation report is based on eight scientific publications in journals indexed in Scopus and/or Web of Science, related to the topics:

- Synthesis and Study of Ion-Associated Complexes of Transition and Non-Transition Metals (Mo and Ge)
- Investigation of the Equilibria in the Formation of a Complex of an Anionic Chelate of Zinc(II) with a Tridentate Ligand and the Cation of 3-(2-naphthyl)-2,5-diphenyl-2H-tetrazolium chloride

The candidate's research activity focuses on the synthesis and characterization of new coordination compounds. Eight extraction–spectrophotometric systems have been investigated, leading to the synthesis of eight new ion-associated complexes. Optimal extraction conditions were established, and the composition and structure of the investigated complexes were determined together with the analytical characteristics of the extraction systems.

Extraction equilibria were quantitatively characterized through the determination of the association constant (β), distribution constant (KD), extraction constant (Kex), and the recovery factor (R). The influence of interfering ions on the complex formation and extraction of Mo(VI) was also investigated, and structural formulas were proposed for each of the obtained ion-associated complexes.

The scientific work of Dr. Stojnova focuses on the synthesis and characterization of new coordination compounds with potential applications in ecology, medicine, pharmacy, and applied inorganic chemistry. In the field of coordination chemistry, ion-associated complexes with various bidentate and tridentate ligands have been studied, and their composition and structures have been experimentally confirmed.

In the field of analytical chemistry, new extraction–spectrophotometric methods have been developed for the determination of Mo(VI), Ge(IV), Zn(II), Co(II), W(VI), Fe(III), and Ga(III), characterized by high sensitivity and reliability and applicable to biological, medical, and industrial samples.

A total of 22 new liquid–liquid extraction systems involving transition and non-transition metals, various ligands, and organic cations have been obtained and characterized. Structural formulas have

been proposed for all systems, and their analytical characteristics have been determined, including molar absorptivity, analytical sensitivity, and limits of detection and quantification.

The influence of interfering ions and masking agents on complex formation and extraction processes has also been investigated, contributing to the development of more reliable analytical methods for metal determination.

The candidate's publications have been cited 37 times in scientific papers published in refereed and indexed journals, reflecting international recognition of her research.

Chief Assistant Professor Dr. K. Stojnova demonstrates substantial scientific contributions that exceed the requirements for the academic position of Associate Professor. For the indicator "Habilitation Thesis", she has achieved 114 points (minimum requirement: 100); for scientific publications in refereed and indexed journals, 216 points (minimum requirement: 200); and for citations, 74 points (minimum requirement: 50). She has also participated in five research projects and 36 scientific conferences. The total number of points is 454, clearly demonstrating that her achievements exceed the national minimum requirements for the academic position in the field of Chemical Sciences.

Dr. K. Stojnova demonstrates significant achievements in teaching, scientific research, and applied research, confirming her high professional quality as both a researcher and an educator.

3. Critical Remarks and Recommendations

None.

CONCLUSION

The documents and materials submitted by Chief Assistant Professor Dr. Kirila Trifonova Stojnova fully comply with all requirements of the Development of the Academic Staff in the Republic of Bulgaria Act, the Regulations for the Implementation of the Development of the Academic Staff in the Republic of Bulgaria Act, and the relevant internal regulations of Paisii Hilendarski University of Plovdiv.

The candidate has presented a substantial number of scientific works published after the materials used for the defense of the PhD degree. These works contain original scientific and applied contributions, which have received international recognition.

The scientific and teaching qualifications of Dr. Stojnova are beyond doubt. The results achieved in her teaching and research activities fully meet the national minimum requirements, as well as the

additional requirements of the Faculty of Chemistry adopted in accordance with the university regulations.

After reviewing the submitted materials and analyzing their significance and the contained scientific, scientific-applied, and applied contributions, I find it justified to give a positive evaluation and recommend that the Scientific Jury prepare a proposal report to the Faculty Council of the Faculty of Chemistry for the election of Chief Assistant Professor Dr. Kirila Stojnova to the academic position of Associate Professor at Paisii Hilendarski University of Plovdiv in Field of Higher Education 4. Natural Sciences, Mathematics and Informatics, Professional Field 4.2. Chemical Sciences (General and Inorganic Chemistry).

04 March 2026

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