# O P I N I O N

### by Assoc. Prof. Rumen Kostadinov Uluchev, PhD

*Faculty of Mathematics and Informatics*
*Sofia University St. Kliment Ohridski*

**Regarding:** application for the academic position Associate Professor in Plovdiv University Paisii Hilendarski

**Area of Higher Education:** 4. Natural Sciences, Mathematics, and Informatics

**Professional Field:** 4.5. Mathematics (Computational Mathematics)


I present the evaluation below in my capacity as a member of the Scientific Jury appointed by an Order № P33-3778, dated July 12, 2019, of the Plovdiv University (PU) Rector, regarding application for the academic position Associate Professor at PU in Area of Higher Education 4. Natural Sciences, Mathematics, and Informatics in Professional Field 4.5. Mathematics (Computational Mathematics). The procedure has been announced in the State Gazette issue 31 dated April 12, 2019, as well as in the PU website.

The only candidate applied for the position is Chief Assistant Prof. Pavlina Khristova Atanasova, PhD, from the PU Faculty of Mathematics and Informatics (FMI). I was submitted files with copies of the following materials:

- application form of the Candidate for Associate Professor position in PU;
- CV (in Bulgarian, Europass format);
- MSc degree diploma, ПУ-2001, №00467, reg. № 2938/July 2001 and a certificate for identity of a person with different names: Павлина Христова Семерджиева and Павлина Христова Атанасова;
- PhD degree diploma № 1000003, issued on 23.05.2012 by PU;
- certificate for more than 14 years pedagogical practice, of which more than 7 years in a position of Chief Assistant Professor at PU;
- full list of all 61 works of the Candidate;
- list of 22 scientific works submitted for the procedure;
- abstracts of the scientific works submitted for the procedure (in Bulgarian);
- abstracts of the scientific works submitted for the procedure (in English);
- full list of noticed 27 citations for the last 5 years;
- list of noticed 12 citations for the procedure;
- self-assessment for the scientific contributions (in Bulgarian);
- self-assessment for the scientific contributions (in English);
- certificate of confirmation that the Candidate satisfies the national minimal requirements for the Associate Professor position, issued by FMI of PU;
- file, proving that the Candidate satisfies the metrics requirements according to the national minimal requirements for the Associate Professor position;
- certificate for teaching of the Candidate, issued by FMI of PU;
- annotations of 8 lecture courses developed by the Candidate;

- list of 17 research and/or educational projects in which the Candidate participated;
- reference of PU Scientific and Applied Activities department confirming participation of the Candidate in projects;
- list of 17 talks delivered in scientific conferences;
- 19 scientific works submitted for the procedure;
- Lab Textbook for students in Software Systems in Mathematics with a statement of equal participation of the authors;
- abstract of the PhD Thesis of the Candidate;
- confirmation certificate that the Candidate satisfies the Additional Faculty Requirements of FMI in PU;
- statement of the Candidate that the contributions in her scientific works submitted for the procedure are original and the documents submitted are authentic and reliable.

Based on documents and articles submitted for evaluation, I confirm that the Candidate:

- was awarded PhD degree in 2011;
- has been occupying Chief Assistant Professor position in PU since 2012;
- has publications in scientific journals and series, different from the works used in procedures on awarding doctoral degree and Chief Assistant Professor;
- has other scientific publications; handbooks, notes, guides and e-learning resources for students.

The research of Pavlina Atanasova falls in the field of computational mathematics and it is mainly devoted to new numerical methods for solving differential equations. The problems described by the differential equations are related to processes in nanophysics and have important applications in practice. Another direction of the Candidate's research is analytical study on: a class of perturbed linear Volterra integral equations; linear impulsive differential equations; interpolation by generalized polynomials. It is impressive that most of the numerical experiments in the articles presented has been designed and tested on various computer platforms, including the most powerful supercomputer in Bulgaria.

Candidate's application includes 22 submitted works, 16 of which are scientific articles [4-19] and 3 other resources (notes, presentations, video, files) [20-22], different from the works used in previous procedures. All the works and official references submitted, prove that the Candidate satisfies the national metrics requirements as well as the specific requirements for the Faculty of Mathematics and Informatics of PU for the position Associate Professor:

- publications – 16 (minimal requirement 8);
- publications in journals/series – 6 (minimal requirement 5);
- publications in journals with Impact Factor – 3 (minimal requirement 3);
- textbooks/handbooks/guides for students – 3 (minimal requirement 1);
- citations – 12 (minimal requirement 5).

All papers [4-19] are co-authored by Pavlina Atanasova and she is pointed as a first author in 8 of them. The textbook for students [20] is a joint work while the e-resources [21,22] are self-developed by her.

The documents submitted show that the Candidate has participated in: 13 international research projects (including as a team leader in 9) and in 4 scientific and/or educational projects funded by PU; 15 international conferences and in 2 national scientific events; development of 8 lecture courses; development of 1 guide for students and e-resources for 9 lecture courses. Seven students (1 of which a Master student) graduated with Pavlina Atanasova as an advisor of the BSc/MSc thesis. Currently she intensively works with a PhD student in the field of numerical methods.

According to the submitted documents and references, Pavlina Atanasova has been working in PU since 2010. First she occupied an Assistant Professor position in the Department of Applied Mathematics and Modeling and since 2012 a Chief Assistant Professor position. During the years she taught 12 lecture courses and 10 exercises and labs courses at the Faculty of Mathematics and Informatics. These courses are mainly on computational mathematics and on computer algebra software, which covers the subject of the position for which she applies.

I find the personal contribution of the Candidate is indisputable, both in the publications submitted for the procedure and in other national and international scientific activities in which she has participated. Due to the absence of any information, I consider the participation of the co-authors in their joint publications [4-19] to be equal.

**Conclusion:** the documents and the articles submitted by Pavlina Atanasova satisfy the requirements of the *Development of Academic Staff in the Republic of Bulgaria Act*, the Rules for its implementation, the internal PU rules and regulations.

The Candidate not only meets completely, but in some respects exceeds the eligibility criteria for the position of an Associate Professor of Mathematics at PU. There are many original contributions in the Candidate's applied-theoretical and theoretical works, some of which are published in reputable specialized journals and series. Both research and teaching qualifications of Pavlina Atanasova are undisputable. Her results in teaching and research activities cover the additional specific requirements of the Faculty of Mathematics and Informatics.

The aforementioned evidences justify that Chief Assistant Prof. Pavlina Atanasova, satisfies the *Development of Academic Staff in Republic Bulgaria Act*, the Rules for its implementation, the internal PU rules and regulations and policies of the PU on habilitation to the rank of Associate Professor of Mathematics. That is why I firmly recommend to the Scientific Jury to propose the Faculty Council to elect Chief Assistant Prof. Pavlina Khristova Atanasova, PhD, as Associate Professor in Professional Field 4.5 Mathematics (Computational Mathematics).

09.09.2019 г.                                                           Assoc. Prof. Rumen Uluchev, PhD