# OPINION

**by Assoc. Prof. Stanka Ivanova Hadzhikoleva, Ph.D., PU "P. Hilendarski"**


on the materials submitted for participation in the competition
for the academic position "associate professor"
at Plovdiv University "Paisii Hilendarski"
in: Area of Higher Education 4. Natural sciences, Mathematics and Informatics,
Professional Field 4.6 Informatics and Computer Sciences
(Information security)

In the competition for "associate professor" announced in the State Gazette, issue 96 of 17.11.2023 and on the website of Plovdiv University "P. Hilendarski" for the needs of the Software Technologies department at the Faculty of Mathematics and Informatics, the only applicant participating is Magdalena Asenova Veselinova from Plovdiv University "P. Hilendarski".

## 1. General presentation of the procedure and the applicant

By order № RD-21-388 of 16.02.2024 of the Rector of Plovdiv University "P. Hilendarski" (PU) I have been appointed as a member of the scientific jury of a competition for the academic position of "associate professor" at the PU in the area of higher education 4. Natural sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Science (Information Security), announced for the needs of the Software Technologies Department at the Faculty of Mathematics and Informatics (FMI). Only one applicant submitted documents for participation in the announced competition – Assistant Professor Magdalena Asenova Veselinova, Ph.D., from PU "P. Hilendarski".

This opinion paper has been prepared following the requirements of the Act for the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Regulations for the Implementation of the ADASRB (RIADASRB), and the Regulations for Development of the Academic Staff of Plovdiv University "Paisii Hilendarski" (RDASPU).

The set of materials presented by M. Veselinova on paper is in accordance with the Regulations for Academic Staff Development at the PU, and includes the following documents:

- Application for participation in the competition;
- European style CV;
- Diploma for completed higher education - "master's degree", № 053010, registration number 1883/13.10.2013, issued by PU "Paisii Hilendarski" – Plovdiv.
- Diploma for the educational and scientific degree of „Ph.D." – № 1000245 / 24.02.2017;
- Complete list of the scientific works;
- List of the scientific papers for participation in the competition;
- Scientific papers for participation in the competition (copies of the publications);
- Complete list of citations;
- List of citations for participation in the competition;
- Information on compliance with the minimum national requirements;
- Information on compliance with the additional requirements of the FMI;

- Annotations of the materials for participation in the competition - in Bulgarian and English languages;
- Habilitation reports for scientific contributions - in Bulgarian and English languages;
- Documents for academic work;
- Documents for research activities;
- Certificate of work experience with Ref. № RD-38-16/12.01.2024;
- Declaration of originality and authenticity of the attached documents.

Ph.D. M. Veselinova obtained a Master's degree in „Business Informatics with English" at PU in 2013. In 2017, she defended a PhD degree in the Area of Higher Education 4. Natural sciences, Mathematics and Informatics, Professional Field 4.5 Mathematics, PhD program „Differential Equations". From 2012 to 2017, she worked as a system administrator at UMBAL "Kaspela", Plovdiv. At the beginning of 2017, she was appointed as an assistant at PU, and by the end of 2017, after obtaining her Ph.D. degree, she became an assistant professor. M. Veselinova is also owner of a company, with business activities in the administration and maintenance of computer networks, development and implementation of software services and applications, consultancy services, and others.

### 2. General characteristics of the applicant's activity

Ph.D. M. Veselinova has led lecture courses in "Database Systems", "Computer Systems and Communications", "Programming", "Verification and Validation of Software", as well as exercises in "Database Systems", "Introduction to Programming (C#)", "Programming", "Computer Systems and Communications", and "Introduction to Web Programming". She is the author of a teaching aid for students.

Ph.D. Veselinova is the supervisor of 6 graduates from the Faculty of Mathematics and Informatics who successfully defended their diploma theses.

She has participated in 1 international and 3 university projects in the fields of computer science, mathematics, and the pedagogy of education. The participation is certified with an official note issued by the "Scientific and Applied Activities" Department at PU.

The complete list of scientific works of Ph.D. M. Veselinova includes 23 scientific publications, 1 teaching aid, and 1 monograph. 18 of these works are indexed in the world-famous databases Web of Science and/or SCOPUS.

For the competition, a total of 13 scientific publications, 1 monograph, and 1 teaching aid were submitted. 9 of the scientific publications are indexed in Web of Science and/or SCOPUS databases, while 6 are in peer-reviewed journals. 12 of the publications are in English, and 1 is in Bulgarian. The scientific works submitted for the competition are co-authored, demonstrating developed teamwork skills.

34 citations were presented that were not used in the procedure for acquiring the "Ph.D. degree" or for occupying the academic position of "assistant professor". 22 of the citing papers are indexed in Web of Science and/or SCOPUS databases.

The materials, presented by Ph.D. Veselinova for participation in the competition exceed the minimum national requirements, as well as the specific requirements of the FMI at PU, as follows:

- Minimum national requirements – Indicator A – 50 proven points with a minimum requirement of 50 points; Indicator B – 100 proven points with a minimum requirement of 100 points; Indicator C – 288 proven points with a minimum requirement of 200 points; Indicator D – 176 proven points with a minimum requirement of 50 points; Indicator E – 60 proven points with a minimum requirement of 0 points. Total number of proven points - 674, with a minimum requirement of 400 points.
- Specific requirements of the FMI at the PU – 13 publications are submitted, which were not submitted for the acquisition of the "Ph.D. degree" or for occupying the academic position of "assistant professor", with a minimum requirement of 10 publications; of the submitted publications, 6 are in journals, with a minimum requirement of 5; 1 teaching aid presented with a minimum requirement of at least 1 textbook or teaching aid; evidence submitted for 34 citations, with a minimum of 5 citations required.

The applicant's scientific works can be classified into 3 areas:
- Methods and approaches for secure data storage and recovery in modern IT infrastructures.
- Technology scenarios for data recovery in cloud environments.
- Theoretical results in the field of fractional differential equations with potential applications in data recovery.

The presented monograph titled "Implementing Cloud Services to Enhance the Security of Digital Data" covers various aspects of cloud computing, including methods of data storage; threats to data stored in IT infrastructure; data recovery methods, and more, demonstrating a good understanding of the theory in the field of information security.

I accept the results and contributions formulated in the author's habilitation report, which are of a scientific, scientific-applied, and applied nature and can be described as enriching an existing scientific field with new knowledge.

In the world's scientific databases, Ph.D. Veselinova is presented as follows: Web of Sciences – 11 indexed documents, 40 citations, H-index-5; SCOPUS – 19 indexed documents, 73 citations, H-index-5.

I accept the Declaration of Originality and Authenticity presented by the applicant. I have not found evidence of plagiarism.

### 3. Critical remarks and recommendations

I recommend Ph.D. M. Veselinova to direct her efforts toward publishing her scientific works in specialized journals in the field of computer security. Publishing in unsuitable journals does not provide the necessary visibility of the results to the scientific community.

I recommend continuing the work in the field of differential equations and their practical application in information security. For example, it would be interesting to explore the application of conformal derivatives in image analysis and processing, and computer vision. Differential equations with delayed arguments with fractional derivatives could likely be used in the development of cryptographic algorithms.

**CONCLUSION**

The documents and materials presented by Ph.D. M. Veselinova meet all the requirements of ADASRB, RIADASRB, and RDASPU. The presented works meet the minimum national and additional requirements of the FMI.

I give a *positive assessment* of Ph.D. M. Veselinova's achievements and suggest to the Scientific Jury to prepare a report-proposal to the FMI Faculty Council for the *selection of assistant professor Ph.D. Magdalena Asenova Veselinova for the academic position of "associate professor"* at the Plovdiv University "Paisii Hilendarski" in the area of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Science (Information Security).

08.04.2024 **Opinion Paper prepared by: .....................**

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