

OPINION

regarding a competition for the academic position of "professor" at the New Bulgarian University,
in the professional field 5.3. "Communication and Computer Engineering"
Announced in the State Gazette, issue 85 / 08.10.2024
with candidate: Associate Professor Dr. Rosen Ivanov Pasarelski.

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I. Assessment of compliance with the minimum national requirements and the requirements of the New Bulgarian University

The competition for the academic position "professor" in professional direction 5.3 "Communication and computer technology" announced in SG No. 85 / 08.10.2024, is in full compliance with the requirements of the law and is intended for the Department of "Telecommunications", FDENO Faculty of New Bulgarian University (NBU).

The only candidate in the competition is associate professor Rosen Ivanov Pasarelski, who has provided the following basic documentation: **Self-assessment** for long-term attestation of a full-time associate professor at the Department of Telecommunications; **Appendix 2** "Minimum requirements for the scientific, teaching and/or artistic-creative activities of candidates for academic positions", in accordance with the requirements of Rules for implementation of the law on the development of the academic staff in the Republic of Bulgaria (PPZRASRB) and NBU; **Published monographic work** on "New 5G mobile cellular systems. Exploring the Interaction between 4G-LTE and 5G Systems: Architecture, Network Functions, Interfaces and Protocols", with ISBN: 978-619-233-282-2; **A list of 29 publications** in refereed and indexed journals in world-renowned databases of scientific information and in peer-reviewed collections and journals or in edited collective volumes; **Participation in 12 national** and international scientific and educational projects; **Reference for citations** of publications by Rosen Ivanov Pasarelski, from the NBU library; **2 university textbooks published** - "Data Centers and Structured Cabling", ISBN 978-619-233-299-0 and "Services in Data Centers", ISBN 978-619-233-300-3; **Personal documents** - curriculum vitae, criminal record certificate, medical certificate and copy of diploma for the acquired ONS "doctor".

Table 1 presents the accumulated points for the individual indicators for long-term attestation, in accordance with the minimum national requirements under the Law on the development of the academic staff in the Republic of Bulgaria (ZRASRB) and the normative requirements of the NBU.

Таблица 1

Group of indicators	Content	Minimum national requirements under the ZRASRB for AP "Professor"	Accumulated points by Assoc. prof. Rosen Ivanov Pasarelski
A	Indicator 1	50	50
B	Indicator 2	0	0
C	Indicator 3-4	100	100

D	Indicators 5 – 10	200	365
E	Indicators 11	100	161
F	Indicators 12 – 20	150	210
G	Sum of Indicators from 29 to end (mandatory for NBU)	70	200
H		70	160
I		70	130

All documents for the current competition for "professor" are accompanied by evidence of the existence of the relevant activity. The total number of points collected by the candidate, according to all the indicators provided for in the law, significantly exceeds the minimum legally required and fully meets all the criteria for participation in the competition for the academic position of "professor" in professional direction 5.3 "Communication and computer technology" at the NBU's FDENO.

In summary, the documentation provided by the candidate, Rosen Ivanov Pasarelski, fully complies with the minimum national requirements established by ZRASRB, as well as with the internal regulations in the Ordinance on the Development of the Academic Staff of the NBU for Scientific and Teaching Activities in the Field of Higher Education 5. Technical Sciences , professional direction 5.3 "Communication and computer technology".

II. Research (creative) activity and results

1. Assessment of monographic work

The monographic work "New 5G mobile cellular systems. Research on the interaction between 4G-LTE and 5G systems: architecture, network functions, interfaces and protocols" by Associate Professor Rosen Pasarelski, submitted for the "Professorship" competition, is an in-depth study of 4G and 5G systems. It offers a systematic analysis of architectures, network functions, and security, featuring high scientific and applied scientific value through the development of mathematical analyzes of multiple access and radio signaling optimization models in 5G. The paper shows a high competence, is based on a substantial volume of scientific literature and offers significant contributions to the optimization of mobile communications.

The monograph is highly rated as it demonstrates exceptional expertise, innovation and significant scientific and applied scientific contributions. The work is important in the field of technical sciences and contributes significantly to the professional direction 5.3 "Communication and computer technology".

2. Assessment of the author's scientific and scientific contributions

The assessment of the author's contributions is positive and high, as the work of associate professor Rosen Pasarelski stands out with significant scientific and applied scientific achievements. His main contributions can be noted in the following areas:

1) Innovative analysis of 5G systems - The author offers an in-depth study of the architectures and interactions between 4G-LTE and 5G systems, which contributes to a better understanding of their network functions, interfaces and protocols.

2) Mathematical models and optimization - A significant contribution is the development of mathematical analyzes for the optimization of radio resources and signaling in 5G networks, which has a practical application in improving the performance of communication systems.

3) Applicability of solutions - The monograph offers concrete solutions for process optimization in mobile communications that can be used by both the academic community and the telecommunications industry.

4) Complex comparative analysis - The author makes a detailed comparative analysis between generations of mobile systems, which contributes to a deeper understanding of the evolution of mobile networks and their impact on modern communications.

These contributions highlight the importance of research in the field of telecommunications technology and the scientific community.

3. Assessment of the contributions in the other attached publications made after the appointment of the academic position "associate professor"

The candidate for the "Professor" competition in the professional field 5.3 "Communication and Computer Engineering" has submitted 29 publications that show significant contributions in the field of telecommunications and computer networks. The evaluation of the scientific results of these works reveals several main directions of contributions:

- 5G Networks and Technologies - Publications deeply explore 5G network architectures and present original solutions to optimize network functions, security and resource management. This is of particular importance for the future development of telecommunication systems and their application in real conditions.
- Artificial intelligence and security in networks - The candidate has investigated the application of artificial intelligence to manage telecommunication networks, proposing innovative approaches to increase the security and efficiency of networks. This is a key contribution to modernizing telecommunications systems and addressing the challenges of modern cyber threats.
- Non-Orthogonal Multiple Access (NOMA) - Publications include research on NOMA, which is one of the key technologies in 5G and future communication networks. The author presents solutions to improve the capacity and efficiency of networks, focusing on the optimization of spectral resources and data transmission.
- Femtocell technologies and network architecture - Research on femtocell technologies, which offer solutions to improve the coverage and capacity of mobile networks in urban environments, also make a significant contribution.

As applicability of the scientific results, it can be noted that many of the publications have a high scientific application value, since the presented results can be directly used to optimize modern telecommunication networks and systems.

In summary, the 29 publications presented show active scientific activity and significant contributions in the fields of 5G technologies, security, artificial intelligence and network management.

4. Citation from other authors

In the competition for the academic position "professor" under PN 5.3 "Communication and computer technology" at NBU, associate professor Dr. Rosen Pasarelski presented an analysis of the citations of his publications. As of January 2024, his works have been cited 46 times in reputable databases, including Scopus, Web of Science, and Google Scholar. His publications are cited in a scientific monograph, which shows their importance. Eight of the citations are in Scopus, confirming the international recognition of his research. Associate Professor Pasarelski has accumulated 161 points from the citations, significantly exceeding the requirement of 100 points for the academic position "Professor". These results highlight the high quality of his scientific work and its impact in the academic community.

In summary, it can be noted that the scientific works of associate professor Pasarelski receive a positive evaluation, because of their significant contributions and recognition.

5. Evaluation of the results of participation in research and creative projects and application of the obtained results in practice

Associate professor Rosen Pasarelski makes a significant contribution to PN 5.3 "Communication and computer technology" through his participation in 12 national and international research projects. The candidate takes part in an international project under the COST program, which

emphasizes his commitment to international research and collaboration with scientists from different countries. This demonstrates his ability to contribute to innovative scientific developments and teamwork. In the project BG051PO001-3.1.07, which updates the curricula in telecommunications, Associate Professor Pasarelski contributes his expertise, strengthening the connection between academia and business.

His participation in the project to study the electromagnetic fields of mobile devices is a testament to his empathy for important public issues. This research may provide key guidelines for public health policies.

In addition, his participation in the Student Internships - Phases 1 and 2 project demonstrates his willingness to guide and mentor students, which is important for their professional development. His work will enhance the professional prospects of participants and underlines his commitment to the quality of education.

In summary, I highly appreciate the results of Associate Professor Rosen Pasarelski's participation in research and educational projects that have a significant application in practice.

III. Learning and teaching activity

1. Auditory and non-auditory employment, work in the electronic training module "MOODLE - NBU", provision of student practices and internships, work with students and doctoral students.

The evaluation of the teaching activities of Associate Professor Dr. Rosen Passarelski in the Department of Telecommunications of NBU shows a significant contribution to student education.

Associate Professor Passarelski actively provides and organizes internships in NBU laboratories and in partnership with industrial companies, thus providing students with valuable practical experience. This commitment facilitates the transition from the academic to the professional environment and helps build contacts in the industry.

His work with the "MOODLE" platform demonstrates his pursuit of innovations in teaching, providing students with easy access to learning resources.

Associate Professor Passarelski is the scientific supervisor of two successfully certified doctoral students, which emphasizes his commitment to the development of future scientific personnel.

In summary, I can say that the candidate's commitment and his professionalism make him a valuable part of the academic community.

IV. Administrative and public activity

1. Participation in collective management bodies of the NBU

Associate Professor Dr. Rosen Pasarelski actively participates in collective management bodies of NBU. Since 2003, he has been a member of the Council of the Department of Telecommunications. He held the position of Director of the Bachelor's Program "Telecommunications" in the period 2005–2015. From 2021 to July 2024, he is the Director of the Program Council of the Department, and from July 2024, he is the Head of the Department of Telecommunications.

In addition to his duties at the university, Associate Professor Rosen Pasarelski actively participates in national organizations and scientific committees. He is the Editor-in-Chief of the Yearbook "Telecommunications", indexed in CEEOL. He is also a member of the Editorial Board of the conference "Knowledge, Science, Technologies, Innovations" and of the international scientific program committee of the conference of the National University "Vasil Levski".

The candidate's public activity, combined with his excellent academic competencies, corresponds to the professional direction of the "professor" competition and receives a high score.

V. Personal impressions of the candidate (if any)

I have only recently known Associate Professor Dr. Rosen Pasarelski, but I can note his professional dedication to the field of telecommunications.

My impressions of him are extremely positive, as he is not only a distinguished specialist in his field, but also a teacher who inspires students with his commitment and depth of knowledge.

VI. Opinions, recommendations and notes on the activity and achievements of the candidate

I will allow myself to make two recommendations regarding the candidate's future professional activity:

- I recommend that Associate Professor Dr. Rosen Pasarelski continue to actively participate in international research projects in order to expand his scientific network and integrate new ideas and practices into his work. Such participation would improve the exchange of knowledge and increase the visibility of his scientific achievements.
- I recommend the candidate to upgrade the field of his research activity and direct his efforts to publishing in profiled publications with Impact factor, Web of Science and others.

CONCLUSION

On the basis of the evaluations in my opinion, I confidently state that the candidate Rosen Ivanov Pasarelski fully meets the requirements for the academic position of "professor" according to the ZRASRB and the internal Regulations of the New Bulgarian University.

In conclusion, I give a high and positive assessment of the overall scientific and academic activity of the candidate and recommend to the respected members of the Scientific Jury to support Associate Professor Rosen Ivanov Pasarelski for occupying the academic position of "Professor" in professional direction 5.3. "Communication and Computer Engineering" at the New Bulgarian University, Department of "Telecommunications" and to be elected by the Academic Council.

Date 13.01.2025

Signature:

/Assoc. Prof. Dr. Ivelina Stefanova Balabanova/