



OPINION

by competition for an academic position „Associate Professor” at
5.3. „Communication and computer equipment”,
subject „Synthesis and analysis of algorithms”

announced in SG num. № 31 from 19.04.2022 г.
with a candidate Chief Assist. Prof. Nely Ananieva Arabadzhieva – Kalcheva, PhD
Member of scientific jury Assoc. Prof. Ivelina Stefanova Balabanova, PhD –
Technical University of Gabrovo

1. General characteristics of the candidate's research and applied scientific activity.

The candidate Chief Asst. Prof. Nely Kalcheva participated in the competition with a total of 26 publications reflecting the main results of her research work. 11 publications have been presented in international scientific symposia in the country and abroad with indexing in global databases, equivalent to a Habilitation thesis. From the total number of scientific works on:

- type: 22 are reports at international scientific conferences and 4 articles in non-refereed journals;
- language of writing: 16 in English and 10 in Bulgarian;
- distribution by groups of indicators with referencing in Scopus: indicator "B.4" 11 (1 independent publication), indicator "G.7" 3 publications;
- group indicator "G.8" 12 publications, of which 6 are independent;

The significant exceeding of the regulated categories of minimum scientometric indicators achieved by the applicant's main activities is striking, as follows: group "B": 255 points out of a minimum of 100; group "G": 222.33 with 200 points required. Chief Asst. Prof. Nely Kalcheva is a member of two scientific organizations, respectively "Union of Automation and Informatics" and "Union of Mathematicians in Bulgaria". In terms of project participation and leadership, a total of six projects are indicated in which the applicant was once the leader "SP12 from 2022", while in "SP5 from 2020", "SP6 from 2018", "SP9 from 2017", "SP10 from 2016" and "SP9 from 2015" participant.

2. Evaluation of the pedagogical preparation and activity of the candidate.

Chief Asst. Prof. Nely Kalcheva is distinguished by extremely rich pedagogical experience in the fields of school secondary and higher education, given the positions held as "Teacher", "Deputy Director of Academic Activities", "Part-time assistant" in the department of "KST", "Assistant" in a structural unit "SID" and "Principal Assistant" in the "CST" department. The seriousness of the teaching and pedagogic activity exercised is widely distinguished, expressed in the following:

- A high share of taught disciplines, confirmed by the quantitatively exceeded scientometric indicator "Zh.29" - 234 achieved with 30 points required for the position;
- Development of curricula with innovative content in the disciplines "Synthesis and Analysis of Algorithms" and "Cybersecurity Risk Management";
- Management of Graduates and Programming Teams in the "Republican Student Programming Olympiad";
- Organizer of "University Olympiad" and Programming Competitions.

3. Basic scientific and scientific-applied contributions.

I accept the formulated "Scientific contributions" as, in my opinion, the systematized "Research and scientific-applied contributions" should be grouped into two directions:

- "Mathematical methods and algorithms in computer and engineering sciences";

- "Teaching methods by implementing scientific approaches in training students in technical universities"

In connection with the reflection of the results of the achievements in the research activity of the Chief Assist. Prof. Nely Kalcheva is known for 20 citations of scientific works, of which 10 are in publications placed in refereed editions in the Scopus database. The reflected citations confirm the good accessibility and highly positive evaluation of the scientific results when familiarizing the scientific community in the country and abroad.

4. Significance of contributions for science and practice.

Undoubtedly, the significance of the contributions indicated during participation in the competition and the complex relative to the overall scientific research and applied scientific activity is characterized by a high degree. The proposed models and approaches combine broad areas such as "Mathematical and applied statistics", "Machine learning" and "Optimization", which can be integrated when solving cases in the field of "Biomedical research", "Management of technological objects and processes" in various fields of industry.

5. Critical notes and recommendations.

I can make the following recommendations regarding the future research work and in particular the active dissemination of the scientific and pedagogical results of the main activities of the Chief Assist. Prof. Nely Kalcheva:

- Increasing participation in National and International projects initiated and financed under various operational programs of the European Union;
- Search for opportunities for cooperation, support and implementation of adapted and developed innovative teaching approaches and others in the field of secondary education to improve the digital skills and competencies of learners in the field of learning programming languages;
- Increase in the volume of publication activity on basic scientific interests and technical profiles in refereed and indexed journals and international conferences with an Impact factor.

CONCLUSION

Based on familiarity with the presented scientific works, their significance, the scientific, scientific-applied and applied contributions contained in them, I find it reasonable to offer Chief Assist. Prof. Nely Ananieva Arabadzhieva – Kalcheva to take academic position „**Associate Professor**“ in professional direction 5.3. „Communication and computer equipment“ at subject „Synthesis and analysis of algorithms“.

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SCIENTIFIC MEMBER:

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Assoc. Prof. Ivelina Vaziranova, PhD