

Review

**in a competition for the academic position of "Associate Professor"
at the Regional Research Institute of the Bulgarian Academy of
Sciences, Sofia**

**in the field of higher education 5.2. Electrical Engineering,
Electronics and Automation, scientific specialty: "Elements and
Devices of Automation and Computer Technology" ("Application
of Additive Technologies in Education") announced in State
Gazette No. 39/13.05.2025**

with a single candidate Dr. Neda Venelinova Chehlarova

Reviewer: Prof. Dr. Radoslav D. Yoshinov

In connection with the competition procedure for the academic position of "Associate Professor" at the Institute of Academic Research-BAS in the professional field 5.2. Electrical Engineering, Electronics and Automation, scientific specialty: "Elements and Devices of Automation and Computer Technology" ("Application of Additive Technologies in Education"), announced for the needs of the laboratory "BRS" in State Gazette No. 39/13.05.2025, in accordance with Art. 4 of the Law on the Development of the Academic Staff in the Republic of Bulgaria, Decree No. 26 of February 19, 2019, the Regulations for its implementation and the Regulations on the terms and conditions for acquiring scientific degrees and for occupying academic positions at IR-BAS and I have been appointed as a member of the scientific jury by Order No. 76/16.07.2025 of the Director of IR-BAS.

For participation in the competition for the academic position of **"Associate Professor"** professional field 5.2. Electrical Engineering, Electronics and Automation, scientific specialty: "Elements and Devices of Automation and Computer Technology" ("Application of Additive Technologies in Education"), announced for the needs of the Laboratory "BRS" in State Gazette No. 39/13.05.2025 **Dr. Neda Venelinova Chehlarova has submitted documents** as the only candidate for the competition.

As a member of the Scientific Jury, I have received:

1. Order of the Director of IR-BAS for conducting the competition for the academic position.
2. Declaration of reliability of the submitted materials and the information in them.
3. Information card for an occupied academic position.
4. A copy of the announcement in the State Gazette.
5. Reference from IR-BAS for occupying the position of Chief Assistant from 26.03.2023 and currently.
6. Copy of high school diploma.
7. Copy of higher education diplomas.
8. A copy of the diploma for the degree of Doctor.
9. Autobiography.
10. Abstracts of the works after defending a doctoral dissertation.
11. List of publications for the competition.
12. Copies of the publications submitted for the competition.
13. List and copy of the required number of citations.

14. A reference to the implementation of the minimum national requirements and the additional requirements set out in these Regulations (accompanied by evidence).
15. Reference of the candidate's scientific and applied scientific contributions.
16. Reference for participation in projects.
17. Document for paid fee of IR-BAS by bank transfer.
18. Declarations under Art. 4 of the Internal Rules for the Development of the Academic Staff of the IR-BAS.
19. Additional documents

Note: all required documents for the competition were also provided in electronic form.
I have been elected as a reviewer under the procedure at the first meeting of the scientific jury on 17.07.2025.

Candidates for the academic position of "Associate Professor" must meet the requirements described in the **Law on the Development of the Academic Staff in the Republic of Bulgaria, Art. 24(1)**, the Regulations for the Implementation of the Academic Staff Development Act in the Republic of Bulgaria and in BAS and the specific requirements of the IR-BAS.

1. (supplemented, SG No. 30/2018, in force from 04.05.2018, supplemented, SG No. 56/2022) to have acquired an educational and scientific degree of "Doctor", which for the specialties of the regulated professions shall be of the same specialty as for the specialties of the regulated professions in the professional field of Health Care, the academic position may also be held by a person, possessing an educational and scientific degree of "Doctor" in a specialty from the regulated professions in the professional fields of "Medicine", "Dental Medicine", "Pharmacy" or "Public Health";
2. not less than two years:
 - (a) have held the academic position of "assistant", "chief assistant", or
 - (b) have been lecturers, including part-time lecturers, or members of a research team at the same or at another higher education institution or scientific organisation, or
 - (c) have exercised artistic activity, or
 - d) to have been specialists in practice and to have proven achievements in their field;
3. to have submitted a published monographic work or equivalent publications in specialized scientific journals or evidence of their respective artistic achievements in the field of arts, which shall not repeat those submitted for the acquisition of the educational and scientific degree "Doctor" and for the acquisition of the scientific degree "Doctor of Sciences";
4. (New, SG No. 30/2018, in force from 04.05.2018) to meet the minimum national requirements under Art. 2b, para. 2 and 3, respectively to the requirements under Art. 2b, para. 5;
5. (New, SG No. 30/2018, in force from 04.05.2018, supplemented, SG No. 56/2022) not to have plagiarism or unreliability of the scientific data presented in scientific papers proven in accordance with the statutory procedure.

The candidate Dr. Neda Venelinova Chehlarova has the educational degree "Doctor" since January, 2023.

According to the provided documents and certificates of work experience, the applicant Dr. Neda Venelinova Chehlarova has more than 2 years of experience in the position of Chief Assistant. She also has an additional qualification - a teacher's certificate.

Table showing correspondence by points to the points required by the Minimum Points Required by groups of indicators for Acad. position of Associate Professor and their respective performance by the candidate Dr. Neda Venelinova Chehlarova:

Reference of Dr. Neda Venelinova Chehlarova for compliance with the National Minimum Requirements for Acquiring the Academic Position of Associate Professor under 5.2. Electrical Engineering, Electronics and Automation, Scientific Specialty			
Indicator group	Number of points required	Indicator	Points
A	50		50
		A1. Dissertation for awarding the educational and scientific degree of "Doctor" (50 pts.)	
B	100		100
		Q3. Habilitation work (100 points) Chekhlarova, N. (2025). Additive Technologies in Education. Ed. DIPCU, Trakia University. p. 184, ISBN 978-954-691-112-4 (Print), ISBN 978-954-691-113-1	
Г	200	Sum of indicators from 5 to 11 7. Scientific publications in journals that are referenced and indexed in world-renowned databases with scientific information 40/n 8. Scientific publications in non-refereed peer-reviewed journals or in edited collective volumes 20/n	216,7
Д	50	Sum of indicators from 12 to 14 12. Citations or reviews in scientific journals, refereed and indexed in world-renowned databases with scientific information or in monographs and collective volumes	70
		Total	
	400		436,7

All this proves that the candidate, Dr. Neda Venelinova Chehlarova, fulfills (exceeds) all the requirements of Art. 24(1) of the **Law on the Development of the Academic Staff in the Republic of Bulgaria**.

Brief biographical data about the candidate.

Dr. Neda Venelinova Chehlarova was born on 30.05.1994 in the city of Sofia. In 2013 she graduated from the 125th Secondary School "Prof. Boyan Penev" with a foreign language study with a profile in English. She received her bachelor's degree from the University of Forestry, Sofia. In 2017, Neda Chehlarova holds a Master's degree in Business Management. From 2019 - 2022, she was a full-time PhD student at the University of Forestry in PN 3.7. Administration and management. She defended her PhD degree in Application of Computer Engineering in Economics, in the field of higher education 3.7. Administration and management. She was a member of the Faculty Council of the Faculty of Economic

Management, University of Forestry from 2017 to 2022, and was a member of 10 expert groups at the Standing Committee on Economic Sciences and Management at NEAA from 2018 to 2022.

From 23.06.2023 until now, she has been working at the Institute of Robotics "St. App. and Ev. Matey" – BAS, ul. Acad. G. Bonchev No. 2, as "chief assistant".

She has participated in a number of scientific sessions, symposiums, seminars, international conferences, congresses and workshops in technical sciences, mathematics, informatics, information technology, economics, transport, as a rapporteur.

General description of the submitted materials for the competition.

Dr. Neda Chehlarova is the author of 2 monographic works; co-author in over 40 publications, of which 16 are indexed in Web of Science and Scopus; There are over 45 citations.

According to the presented author's reference, Dr. Neda Chehlarova participates with one monograph, thirteen scientific publications and evidence of seven citations. The submitted list of scientific papers of the candidate for the competition includes as follows:

Five scientific publications in journals that are referenced and indexed in world-famous databases with scientific information, two of which have quartile Q2 (Scopus) and respectively one has SJR (Scopus): 0.193, JCR-IF(Web of Science):0.1, and the second SJR (Scopus): 0.131, JCR-IF (Web of Science): 0.2, carrying 90 points.

Eight scientific publications in non-refereed peer-reviewed journals or in edited collective volumes, also carrying 126.7 points.

Habilitation paper presented: Chehlarova, N. (2025). Additive Technologies in Education. Ed. Trakia University. DEEPKU. p. 184, ISBN 978-954-691-112-4 (Print), ISBN 978-954-691-113-1, which brings her 100 points.

Evidence of citations in scientific journals, referenced and indexed in world-renowned databases, three in Scopus and four in Web of Science bearing 70 points is presented.

The submitted materials for the competition do not repeat others used in the procedures for acquiring the educational and scientific degree "Doctor". I have not noticed plagiarism in the submitted materials.

Scientific results and contributions.

According to their content, the scientific papers submitted for participation in the competition can be classified in the following scientific fields:

- I. Analysis of additive manufacturing as a tool for strategic and scientific planning
- II. Didactic resources with 3D printed materials for working with people with visual impairments
- III. Scenarios for integrated STEAM classes through additive technologies and teacher preparation for their implementation in school education
- IV. 3D modeling of educational resources to support formal and non-formal education

In Direction I. the main contribution is bibliometric studies of documents from the scientific database Scopus, and their wrapping with specialized software VOSviewer, in the field of additive manufacturing and 3D printing. Through these studies, research teams are provided with network maps by key authors, institutions and topics in global publications to serve as an information basis for applications for projects and research programs. Such bibliometric analyses help to quickly get acquainted with technological progress, making it possible to identify and eliminate gaps in the research done so far and offering guidelines for the development of future ones. A terminologically defined review of publications from scientific databases on the technological development and transformation of production processes through additive technologies is made, depending on the types of materials and

principles of working with technical devices serving production processes. /Indicators: B3, G8-4, G8-6/

On track II. The main contribution is represented by systems of tasks for counting geometric shapes, 3D printed materials for them and ready-made work scenarios supporting the development of mathematical competence and spatial thinking of the learners. They support the development of mathematical competence and spatial thinking in decision-makers. The results of the studies conducted with adults, students and people with visual impairments have been systematized. The tasks are suitable for use in classes in Mathematics, Information Technology, Computer Programming and in STEM centers. /Indicators: B3, G7-2, G7-3, G8-7, G8-8/

In direction III. The main contribution is the results of the tested scenarios with a 3D pen and finished 3D printed materials with students, teachers, and educational experts. Scenarios for creating original works using a 3D pen and auxiliary 3D printed models to robotic systems are proposed. They are suitable for the formation and development of competencies for the use of additive technologies relevant to the modern STEM environment in school education. Guidelines are given for future development and how, through interdisciplinary integration, additive technologies can serve for the early introduction of engineering principles into education, combining design, electrical engineering and materials science. /Indicators: B3, G7-1, G7-4, G8-5/

On track IV. The main contribution is the creation of models of systems of tasks for redrawing geometric solids, percentages and fractions in software environments, as well as typical shortcomings in 3D printing of volumetric models using a 3D printer. Recommendations are made to streamline the steps in creating 3D models through the use of ready-made tools and/or the creation of additional buttons/sliders in specific software products, such as GeoGebra, XYZmaker3DKit, Prusa. /Indicators: B3, G7-5, G8-1, G8-2, G8-3/

From the submitted documents it can be seen that the candidate has significant experience in teaching and other educational and scientific activities.

Dr. Neda Chehlarova is a participant in two projects, one under the National Research Fund and the other under the National Security and Defense Program.

Critical Notes.

The very good organization and good quality of the candidate's materials, both in terms of content and formatting, is impressive. The reviewer noticed only some minor technical inconsistencies and spelling mistakes. All this does not detract from the large volume of research, scientific and scientific practical work of the candidate, shaping him as an established scientist.

The reviewer accepts the distribution of the publications in the four thematic areas presented by the candidate, although they flow into each other and no clear boundary can be drawn between them. It would be good to show the influence of these publications on more than one direction, as can be seen in their reading. This would show the interaction of the presented thematic areas in their dynamics and would outline the theme of the competition in a more focused way.

From the submitted documents, it can be seen that the candidate has already proven his ability to work in a team.

Conclusion

The requirements, conditions and criteria of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the

Law on the Development of the Academic Staff in the Republic of Bulgaria and the Specific Requirements of the IR-BAS for occupying the academic position of "Associate Professor" have been fulfilled and I give a categorically **positive conclusion** for the election of Dr. Neda Venelinova Chehlarova to the academic position of "Associate Professor" in the professional field 5.2. Electrical Engineering, Electronics and Automation, scientific specialty: "Elements and Devices of Automation and Computer Technology".

Expressing a positive opinion on the submitted materials, I propose to the honorable Scientific Jury to unanimously prepare a proposal to the Scientific Council of the Institute of Robotics - BAS for the election of Dr. Neda Venelinova Chehlarova to the academic position of Associate Professor in the professional field 5.2. Electrical Engineering, Electronics and Automation, scientific specialty: "Elements and Devices of Automation and Computer Technology".

20.09.2025

Reviewer:

Radoslaw Yossimov