Review

**regarding a competition announced by the Technical University of Gabrovo,
for the academic position of "Associate Professor"
in the field of higher education 5. Technical Sciences,
professional field 5.6 Materials and Materials Science,
specialty "Materials Science and Technology of Engineering Materials"
promulgated in the State Gazette, issue 53 of 09.06.2026**

Reviewer: Professor Jordan Todorov Maximov, DSc, PhD

Only one candidate participated in the competition: Dr. Eng. Milka Grigorova Atanasova, born on January 13, 1977. She works at the Technical University of Gabrovo, in the Department of Materials Science and Mechanics of Materials, and holds the academic position of Chief Assistant Professor.

1. Assessment of the candidate's research, applied science and publication activities after the procedure for the educational and scientific degree "Doctor"

Regarding this criterion, the candidate, Chief Assistant Professor Dr. Milka Atanasova, participates in the competition with a portfolio of achievements that I have classified as follows:

1) Abstract of a 2016 dissertation titled "Technology for Hole Finishing Using the Spherical Burnishing Method" for the educational and scientific degree of "Doctor" – **1**;

The dissertation is for the doctoral program "Mechanical Engineering Technology."

2) Articles in impact-factor journals indexed by Scopus and/or Web of Science – **4** items. The journals, the number of authors, and the candidate's position among the authors are as follows:

- Metals (edition of MDPI), Q1 (Metals and Alloys), IF 3.1:
  - publication 4.3* (9 authors, VIII author);
  - publication 4.4 (10 authors, VII author);
- Crystals (edition of MDPI), Q2 (Crystallography), IF 2.9:
  - publication 4.8 (8 authors, IV author);
- Journal of Manufacturing and Materials Processing (edition of MDPI), Q1 (Mechanical Engineering), IF 4.0:
  - publication 4.9 (7 authors, III author);

3) Articles in peer-reviewed journals with an SJR ranking but without an impact factor - **6** items. The journals, the number of authors, and the candidate's position among the authors are as follows:

- Bulgarian Chemical Communications, Q4, SJR 0.169:

* The numbering corresponds to that used by the candidate in the file "5. List of scientific publications.pdf".

- publication 4.1 (10 authors, IX author);

▪ Journal of Physics: Conference Series, Q3, SJR 0.183:

- publication 4.2 (11 authors, IX author);
- publication 4.5 (7 authors, VI author);

▪ Archives of Materials Science and Engineering, Q3, SJR 0.280:

- publication 4.10 (4 authors, I author);

▪ Biointerface Research in Applied Chemistry, Q3, SJR 0.336:

- publication 7.1 (5 authors, III author);

▪ Engineering Proceedings, Q3, SJR 0.254:

- publication 7.2 (5 authors, V author);

4) Conference (in Rēzekne, Latvia) monitored by Scopus – **2** items**:**

- publication 4.6 (1 author, I author);
- publication 4.7 (1 authors, I author);

5) Publications in non-refereed journals – **8** items:

▪ Trakya Üniversitesi Fen Bilimleri Dergisi – **1** item:

- publication 8.10 (2 authors, II author);

▪ Journal of the Technical University of Gabrovo – **4** items:

- publication 8.13 (4 authors, III author);
- publication 8.14 (4 authors, III author);
- publication 8.19 (8 authors, VII author);
- publication 8.20 (1 authors, I author);

▪ Innovation in Woodworking Industry and Engineering Design – **1** item:

- publication 8.18 (4 authors, III author);

▪ International Journal of Innovative Research and Scientific Studies – **1** item:

- publication 8.21 (5 authors, III author);

6) Conference abroad (Vrnjačka Banja) – **1** item:

- publication 8.6 (3 authors, III author);

7) Conferences in Bulgaria – **16** items, publications: 8.1 (3 authors, III author), 8.2 (3 authors, III author), 8.3 (3 authors, III author), 8.4 (3 authors, III author), 8.5 (3 authors, III author), 8.7 (3 authors, III author), 8.8 (3 authors, III author), 8.9 (1 author, I author), 8.11 (2 authors, II author), 8.12 (2 authors, II author), 8.15 (3 authors, III author), 8.16 (5 authors, III author), 8.17 (4 authors, III author), 8.22 (4 authors, III author), 8.23 (4 authors, III author), 8.24 (4 authors, I author), 8.25 (1 author, I author).

With the exception of the abstract, which has already been reviewed, I agree to review all the works (37 in total), as, in my opinion, they fall within the scope of the competition. Elementary statistical analysis shows the following:

∗ The 10 publications in Group B4 are the most important, as they must be equivalent to a monograph, in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB). Among them are two sole-authored publications (from a conference in Rēzekne, Latvia). Regarding the publications with an impact factor and those with an SJR ranking (some of which list 10–11 co-authors), the candidate appears at the end of the author list, holding the first-author position in only one instance. The expectation is

that the candidate's leading role should be evident in this group of publications; however, the statistics do not provide a clear answer to this question.

∗ Three of the 27 publications in Group Г are single-authored, and Milka Atanasova is the first author of one publication. In this group of publications, the candidate's role is more substantial compared to Group B.

Chief Assistant Professor Atanasova defended her dissertation on May 18, 2016. The 37 publications submitted for the Associate Professor competition span the period from 2002 to 2026, as follows: 2002 – publication 8.1; 2004 – publications 8.2, 8.3, 8.4, 8.5; 2005 – publications 8.6, 8.7, 8.8; 2006 – publication 8.9; 2007 – publication 8.10; 2008 – publication 8.11; 2009 – publication 8.12; 2016 – publications 8.13 and 8.14; 2018 – publication 8.15; 2021 – publication 8.16; 2022 – publications 4.1, 4.2, 4.3, 7.1, 8.17; 2023 – publications 4.4, 8.18, 8.19; 2024 – publications 4.5, 8.20; 2025 – publications 4.6, 4.7, 4.8, 4.9, 7.2, 8.21, 8.22, 8.23, 8.24; 2026 – publications 4.10, 8.25. The following conclusions can be drawn: 1) The candidate, Milka Atanasova, has worked diligently and continuously for a quarter of a century; 2) The absence of publications for the competition during the 2010–2015 period coincides with the work on her dissertation; 3) The publications under Criterion B (i.e., publications in indexed journals) date from the 2022–2026 period, indicating the candidate's professional growth as a researcher; furthermore, this period follows Milka Atanasova's transfer from the former department (Mechanical Engineering Equipment and Technologies) to the current one (Materials Science and Mechanics of Materials).

Milka Atanasova's research work can be classified into six areas: 1) Electron-beam welding of dissimilar materials (publications 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 8.19, 8.24, 8.25); 2) Surface treatment of metal components using concentrated energy flows (publications 4.9, 4.10, 8.21); 3) Structure, mechanical properties, and service performance of carbide-bainitic cast irons (publications 8.13, 8.14, 8.15); 4) Hydrostatic and hydro-mechanical plastic forming of parts open at one or both ends (publications 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, and 8.12); 5) Bio-based additives and plasticizers for polymer materials (publications 7.1, 8.16, 8.17, 8.19); and 6) Physical-metallurgical studies of metals and alloys (publications 8.22 and 8.23). On this basis, the answer to the question regarding the candidate's profile as a researcher is evident.

The list of citations for works co-authored by Milka Atanasova shows that six publications have been cited a total of 25 times by authors publishing in peer-reviewed journals. My check in Scopus (October 11, 2026) revealed that Milka Atanasova has an h-index of 3 and 26 citations, indicating that her work has garnered attention from international colleagues.

The summary provided by the candidate (file "15.1. Справка участие в проекти.pdf") indicates that she has participated as a researcher in five national research projects, as well as in 17 research projects funded under Section 3 of the State Budget. All projects fall within the scope of the competition. This serves as further evidence of the candidate's profile as a researcher.

2. Evaluation of the candidate's educational and methodological activities and qualifications

Chief Assistant Professor Dr. Milka Atanasova actively participates in the teaching process, as follows:

1) Bachelor's degree program (lectures and practical exercises) in the disciplines:

a) Professional Field 5.6 Materials and Materials Science:

Blank manufacturing technology; Material processing via plastic deformation; Stamping technology and tooling; Material welding; Occupational safety; Material casting – project; Metal processing via plastic deformation – project;

b) Professional field 5.13. General Engineering, full-time and part-time modes of study:

Materials Science and Technology of Engineering Materials; Materials Science and Technology of Materials; Technical Safety;

2) Master's Degree Level:

a) Professional Field 5.6 Materials and Materials Science:

Composite materials; Welding; Plastic deformation processing of materials;

b) Professional field 5.13. General Engineering, full-time and part-time modes of study:

Resource-saving technologies; Technological processes and apparatus.

The candidate is a co-author and author of two textbooks:

♦ Amudzhev, I., M. Atanasova. Planning the Location of Production. Gabrovo: Ex-press, 2019. 91 p. ISBN 978-954-490-646-7

♦ Atanasova, M. Technologies for Manufacturing Workpieces. Part I: Production of Castings. Gabrovo, "Vasil Aprilov" University Press, 2026. ISBN 978-954-683-745-5.

In addition, Chief Assistant Professor Milka Atanasova has participated in the development of two educational projects:

1) Project No. BG051PO001-1.1.10-0009 "Integration of unemployed persons from the Gabrovo region through training in professions, key competencies, and motivation" – OP "Human Resources Development" / "Ikonomiks-M" EOOD,

2) Project No. 586297-EPP-1-2017-1-EL-EPPKA2-CBHE-JP "Active Learning in Engineering (ALIEN)" – Erasmus+ KA2: Cooperation for innovation and the exchange of good practices,

as well as in five international mobility activities under the Erasmus program.

Chief Assistant Professor Milka Atanasova actively participates in maintaining and modernizing the department's material and technical facilities, as follows:

• Design and fabrication of a test rig for hydrostatic plastic forming of open-ended parts;

• Design and manufacture of tooling for upsetting operations;

• Design and manufacture of tooling for shearing operations;

• Design and manufacture of pattern and molding equipment for complex castings;

• Maintenance of hydraulic and eccentric presses in the Metal Plastic Deformation Laboratory.

Chief Assistant Professor Milka Atanasova actively works with students on their thesis projects. In the period 2023–2026 alone, 21 students successfully defended their theses under her supervision.

Based on the above, it can be concluded that the candidate, Milka Atanasova, possesses the necessary qualifications and pedagogical training to hold the academic position of Associate Professor.

3. Meeting the minimum requirements for holding the academic position of "associate professor", set out in the Act on the Development of the Academic Staff in the Republic of Bulgaria of 2019.

Chief Assistant Professor Dr. Milka Atanasova is participating in the competition (Group C, Indicator 4) with 10 scientific articles (numbered 4.1–4.10), submitted as equivalent to a habilitation thesis under the general title "Applications of concentrated energy flows using a continuous electron beam for surface strengthening and welding of dissimilar materials." Four of the articles appear in journals with an impact factor, four in journals with an SJR ranking, and the remaining two are conference papers (from Rezekne, Latvia) indexed in Scopus. Against a minimum requirement of 100 points, the candidate has accumulated 183.76 points. It should be noted that the field, professional area, and specialty for which the competition was announced require that Indicator C4 be met through research papers; the candidate has fully satisfied this requirement, as all the publications are research papers.

Under indicator group C, the candidate scores 211.5 points against a minimum of 200.

Under indicator group D, the candidate's score (250 points) significantly exceeds the minimum requirement of 50 points.

Consequently, Milka Atanasova convincingly meets the minimum requirements for the academic position of Associate Professor.

4. Contributions

The contributions in the candidate's publications were submitted to me in advance for review and approval. Therefore, I accept them without objection.

5. Significance of contributions to science and practice

Ultimately, the results of the research and educational-methodological activities of Chief Assistant Professor Dr. Milka Atanasova serve engineering practice and student training.

6. Notes and recommendations

I have no fundamental objections regarding the candidate's research work. I recommend that the candidate expand her areas of interest to include experimental mechanics, surface engineering, and heat treatment in order to successfully integrate into the department's research team. I expect Milka Atanasova to gradually move beyond the role of a task executor and, in the future, to supervise doctoral students.

7. Personal impressions

I have known Milka Atanasova for a quarter of a century and hold her in high regard. She demonstrates remarkable diligence, consistency, persistence, initiative, and a genuinely collegial attitude. Furthermore, she is deeply committed to the department's activities: she serves as the coordinator for Bachelor's students (years 1 through 4) in the TMM specialization and as the department's academic affairs coordinator; she plays an active role in preparing the extensive documentation for the accreditation of professional fields 5.1 and 5.6; she acts as the coordinator for Master's students; and she is actively involved in the student admissions process (for both Bachelor's and Master's programs). Despite her heavy workload, she is always approachable and eager to help.

8. Conclusion

Based on the foregoing, I propose that Chief Assistant Professor Dr. Eng. Milka Grigorova Atanasova be appointed to the academic position of Associate Professor at the Technical University of Gabrovo, in Higher Education Area 5 (Technical Sciences), Professional Field 5.6 (Materials and Materials Science), and the specialty of Materials Science and Technology of Engineering Materials.

20.10.2026 Reviewer:

Gabrovo Prof. Jordan Maximov, DSc, PhD