

REPORT
to occupy the academic position:

"Professor"	
"Associate Professor"	X
	one of the academic positions indicated shall be marked with the sign "X"

Candidates to occupy the position:

1	Assistant Professor	PhD	Iliyan	Stojkov	Mitov	UCTM
№	academic position	scientific degree	name	middle name	last name	workplace

Scientific area:

5	Technical Sciences
code	name

Professional area:

5.6	Materials and Materials Sciences
code	name

Scientific specialty:

Materials science and technology of engineering materials

The competition has been announced:

64	August 5, 2025	Physical metallurgy and thermal units (aggregates)	Faculty of Metallurgy and Materials Science (FMM)
in SG issue	date	for the needs of the Department	Faculty

The report was written by:

Prof.	Dr.	Lubomir	Andreev	Anestiev	IMSET-BAS
academic position	scientific degree	name	middle name	last name	workplace

1. Report for the candidate:

Assistant Professor	PhD	Iliyan	Stojkov	Mitov
academic position	scientific degree	name	middle name	last name

1.1. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	X
B) The candidate doesn't meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It must be filled in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.

Under item 1.1 of the competition criteria, I note that:

- (1) The publications included in the application documents do not duplicate those used in the applicant's thesis for the acquisition of the scientific and educational degree "doctor";
- (2) The applicant has 17 papers in journals holding an impact factor, 13 articles in journals without an impact factor, and 71 citations. He has managed the scientific teams of 3 scientific research projects, and has participated/s in the teams of 2 more national scientific and educational projects, as well as in 2 international projects. He is a co-author of 1 textbook intended for students in the specialties of PN 5.9 Metallurgy, PN 5.6 Materials and Materials Science, as well as in other technical specialties of the University of Chemical and Metallurgical Technology; "Composite Metal Materials and Products, Part II";
- (3) The applicant has 9 years of teaching experience at the FMTA-Department, scientific speciality MTOM ;
- (4) The reference tables submitted by the applicant show that, according to the mandatory national criteria, he repeatedly exceeds the requirements for holding the academic position of "associate professor" (see the completed Annexes 1x and 13 of the Regulations for the Acquisition of Academic Degrees and Positions at the University of Chemical and Metallurgical Technology).

1.2. Relevance of scientific and / or applied research:

A) The research is relevant. Part of the research is pioneering (no results are known on the topic by other authors)	8 points	
B) Research is relevant. Results from other authors are known for each of the topics and / or applications studied.	6 points	X
C) Most of the research is relevant, but also some results are presented that have no scientific and / or applied value	4 points	
D) The smaller part of the research is relevant	2 points	

E) Research is not relevant	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the research must be substantiated.
The relevance of the applicant's research can be judged by how often his publications have been cited. For instance, a reference in the international database Scopus shows that three of his publications in the competition field (No. 2A, 3A, and 4A, according to the list of publications submitted by the applicant) have been cited 46, 55, and 12 times, respectively. Most of the applicant's publications represent a further development of his research subjects, and since there are known results from other authors (provided by the applicant in the reference lists of his papers), I give a score of six (6) points according to this evaluation criterion.

1.3. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	X
B) Realistic, but not of scientific and / or applied interest	4 points	
C) Unattainable (unrealistic)	0 points	
		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified
From the materials submitted for the competition, it is evident that the applicant's research covers a wide range of problems in materials science, metallurgy, heat and mass transfer, engineering, technology, and ecology. This wide spectrum of research implies that the applicant has different goals when solving specific research tasks. The list of scientific publications shows that the applicant has formulated realistic goals and successfully achieved them in the process of his research. I note that the applicant's research has both scientific and applied value, as evidenced by the scientific community's interest in his publications (a point I have already noted in section 1.2 of this statement). That is why I give the applicant the maximum score on this criterion.

1.4. Candidate research contributions:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	X
C) They are of scientific and / or applied interest	12 points	

D) Lack of significant contributions	8 points	
E) Lack of contributions	0 points	
		one of the answers given is marked with the sign "X"

Contributions must be specified. The type of results achieved must be justified. A detailed list of the applicant's scientific and applied contributions to the field of competition is summarized in the "Summary" file he supplied (see the attached competition documents). Without repeating the claims for contributions set out there, I will focus on some of these contributions that I consider to be completely justified and that best characterize the applicant's scientific contributions related to the subject of this competition. (1) In the field of metallurgical heat engineering: Modeling combustion, aerodynamic, and heat transfer processes in metallurgical furnaces using modern software. Development of mathematical models to optimize energy-intensive processes in the heat treatment of steel billets. Combining the results of numerical simulations and experimental studies of metallurgical processes and testing the knowledge obtained in metallurgical plants (1A, 7A, 13B, 15B, 14B, 1C). (2) Heat and mass transfer processes in metallurgical units: Development of a laboratory-based and research infrastructure (stands). Based on the conducted experiments, obtain empirical dependencies, such as: - Creation of methodologies and measuring instruments for determining the thermophysical parameters of metallurgical processes (e.g., rotary kilns), Testing the metrological reliability of the stands to validate mathematical models for subsequent practical industrial applications. Study energy-ecological efficiency and the influence of external factors in metallurgical units. (3B, 4B, 5B, 2C, 2A, 3A, 15A, 6B, 7B, 8B, 13A, 4A, 1B, 2B, 9B, 14A). (3) Ecology and utilization of waste from metallurgical production: Development and implementation of technologies for processing barite and iron-containing waste. Development and research of new approaches for iron extraction from tailings. Utilization of waste materials and their re-metallization (e.g., reduction of copper oxides) – (5A,6A,8A,10B); (4) Obtaining additional knowledge of the wear resistance, heat treatment, and metallography of metals and alloys relevant to practice. (a) Study of the abrasive wear resistance of steels and cast irons after heat treatment; (b) metallographic studies and diagnostics of defects in pistons, air gun barrels, etc.; (c) study of the main failure mechanisms, such as cracks, delamination, plastic deformation, and corrosion damage in metal products, as well as recommendations for avoiding them; and (d) study of the influence of production parameters on the service span of parts and aggregates in metallurgy. The aim is to formulate practical guidelines that would extend their service life. These include: specific heat treatments, better aggregates' setting, lubrication, and maintenance (9A, 11B, 12A, 11A, 12B, 16A, 17A, 10A). The contributions of the applicant, as summarized above in (1) to (4), show significant scientific and applied scientific impact. In my opinion, they are of interest to a wide range of specialists in materials science and metallurgical engineering. Based on this, I give the applicant the second-highest score for this criterion of the evaluation panel.
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1.5. Participation of the candidate in the achievement of the presented results:

A) The candidate has at least an equal participation in the submitted papers	8 points	
B) The candidate has at least an equal participation in most of the submitted papers	7 points	X
C) The candidate has a secondary participation in most of the submitted papers	4 points	
D) The candidate participation is unnoticeable	0 points	
As of item 1.4 of this statement, the applicant's equal level of participation in achieving the results accounted for in his publications is evident from the fact that he is either the first or second author in the majority of the papers and reports in the supplied "List of Scientific Papers." For instance, of all articles and reports included in this list, he is first or second author in 17 of those with an "impact" factor, 13 of those without "impact" factor and in two conference reports. More precisely, out of the 17 publications in journals with an "impact" factor, he is the first author in four (4) of them and in nine (9) he is the second author. In my opinion, these results clearly demonstrate the applicant's contribution to the conception and implementation of the goals outlined in these publications.		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the items C or D is marked.

1.6 Pedagogical activity:

A) The candidate has effective and sufficient pedagogical activity at the university. The textbooks issued are modern and useful (they meet the requirements of the Regulations). The work with undergraduate and doctoral students is at a high professional level.	8 points	X
B) The candidate has sufficient pedagogical activity at the university. The textbooks issued satisfy the requirements of the Regulations.	6 points	
C) The pedagogical activity and / or textbooks issued are insufficient (do not meet the requirements of the Regulations)	0 points	
		one of the answers given

		is marked with the sign "X"
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Critical notes must be provided if one of the items B or C is marked.
The applicant exceeds the minimum amount of pedagogical experience required for the university position for which he applies. I would like to highlight some of these activities on which my assessment of the applicant's pedagogical skills is based: (1) The lectures he gives are in the field of the competition area; (2) The diversity and the amount of the lectures courses he gives to both, full- and part-time students (a total of 10), (e.g., "Synthesis and application of alloys and composites", "Technical thermodynamics", "Fundamentals of alloying and synthesis of alloys", "General and inorganic chemistry", etc.) demonstrates a high qualification and pedagogical skills; (3) The textbook for students he has published ("Textbook on composite metal materials and products"), fully corresponds to the topic of the competition. I note that the last two courses that the applicant teaches (see point (2)) are fundamental (basic) in the training of students in metallurgical specialties, which again indicates a high qualification and the preparation of the applicant for future pedagogical activity in the field of the announced academic position. For these reasons, I give the applicant the maximum score for this evaluation criterion.

1.7. Critical notes:

A) Lack of critical notes	8 points	
B) Critical notes of a technical nature	7 points	X
C) Critical notes that would partially improve the results achieved in a small part of the research	5 points	
D) Critical notes that would partially improve the results achieved in most of the research	3 points	
E) Significant critical notes	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the answers C, D or E is marked.
I have no substantive comments regarding the applicant's scientific and/or pedagogical activities. However, I did have some technical remarks, which I shared with the applicant while preparing this statement. I note that he addressed these issues with the due promptness and on time. As of writing this opinion, I have not received any signals from members of the Scientific Jury or third parties incriminating the applicant of plagiarism or the unlawful use of others' results.

1.8. Conclusion

A) The evaluation of the candidate's activity is POSITIVE	This evaluation is assigned to a total number of at least 50 points	X
B) The evaluation of the candidate's activity is NEGATIVE	This evaluation is assigned to a total number below 50 points	
		one of the answers given is marked with the sign "X"

To be filled in if requested by the member of the scientific jury

After reviewing the scientific papers submitted for peer review, their significance, their theoretical, scientific-applied and applied contributions, the extensive pedagogical activity of the applicant, and taking into account the high evaluation score he received (72 evaluation points out of 80 possible), I find it completely justified to propose to the esteemed Scientific Jury to give a positive evaluation to the application of Assistant Professor Dr. Eng. Iliyan Stojkov Mitov, by issuing a decision/recommendation that his scientific qualification fully satisfies the criteria required to fill the position opening of "Associate Professor" in the Faculty of Metallurgy and Materials Science (FMM) at the University of Technology (Professional field: 5.6 Materials and Materials Science, Scientific specialty "Materials Science and Technology of Mechanical Engineering Materials").

10.11.2025	The report was written by: Prof. Dr. Lubomir Anestiev	
date		signature