Appendix 12c

REVIEW

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	Assist. Prof.	PhD	Tina	Radmilova	Tasheva	UCTM
№	academic position	scientific degree	name	middle name	last name	workplace

Scientific area:

5	Technical Sciences
code	name

Professional area:

5.6	Materials and Material Sciences
code	name

Scientific specialty:

Silicate materials

The competition has been announced:

64	05.08.2025	Technology of Silicates	FMM
in SG issue	date	for the needs of the Department	Faculty

The review was written by:

Assoc. Prof.	PhD	Georgi	Evgeniev	Chernev	UCTM
academic position	scientific degree	name	middle name	last name	workplace

1. Review for the candidate:

Assist. Prof.	PhD	Tina	Radmilova	Tasheva
academic position	scientific degree	name	middle name	last name

1.1. Completion of the provided documents:

A) The competition documents are in full compliance with the Regulations	3 points	**X**

B) The documents are complete but do not fully comply with the requirements of the Regulations	2 points	
C) The documents are not completed in accordance with the requirements of the Regulations	0 points	
		one of the answers given is marked with the sign "X"

Missing documents and violated requirements must be described if response C is marked.
All documents for the announced competition have been submitted by the candidate in full compliance with the Regulations of the of UCTM and PPZRASRB.

1.2. 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.
The candidate is participating in the competition with 18 scientific publications, of which 10 are included in the habilitation reference list (group of indicators B) and 8 outside the habilitation reference list (group of indicators G). All papers have been published in journals indexed in the Scopus and/or Web of Science databases. The candidate's Hirsch index is 7 (excluding self-citations). The scientific results have been presented at 46 international, national, and university conferences in the form of poster presentations and oral reports. Under the candidate's supervision and guidance, seven students have successfully defended their theses for the educational and qualification degrees of Bachelor and Master. The total number of points with which the candidate appears in the competition is a total of 761.24 points, of which 162.24 points represent habilitation work in the form of scientific publications, and 208 points are from publications in publications, referenced and indexed in world-renowned databases with scientific information, which exceeds twice the minimum requirements for holding the academic position of "associate professor", according to the Law on the Development of the Academic Staff in the Republic of Bulgaria (LAADRB), the Regulations for the Implementation of the LAADRB and the Regulations for the Acquisition of Scientific Degrees and Holding Academic Positions at the Bulgarian Technical University - 400 points.

1.3. 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)	7 points	X
B) Research is relevant. Results from other authors are known for each of the topics and / or applications studied.	5 points	
C) Most of the research is relevant, but also some results are presented that have no scientific and / or applied value	3 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 candidate's research is relevant and is aimed at: 1. Obtaining new theoretical and experimental data on the electronic polarizability and optical basicity of simple oxides and oxide glasses, establishing the composition-structure-properties relationship, by applying the polarization approach. 2. Studying the composition-structure-properties relationship of new glasses with the participation of classical and conventional glass-forming agents and modifying oxides, by applying modern methods of structural analysis for application as functional materials with magnetic, electrical, catalytic and optical properties. 3. Obtaining and structural characterization of new glasses, glass-ceramics and ceramics for application in dental and regenerative medicine.

1.4. Knowledge of the problems subject of research:

A) The candidate knows in detail the achievements of other authors on the researched topics and/or applications	6 points	X
B) The candidate is partially familiar with the achieved results on the researched topics and / or applications	4 points	
C) The candidate has no prior knowledge of the status of the researched problems	0 points	
		one of the answers given is marked with the sign "X"

The evaluation must be substantiated if answer C is marked.
All the presented works of the candidate for associate professor are written clearly, the bibliography of each publication contains a detailed description of previous research and a thorough justification of the goals set and the ways to achieve them. Given the fact that in 10 of the presented scientific works, senior assistant Tasheva is the first author, it gives me reason to believe that she knows in detail what has been achieved by other authors, makes a critical analysis and successfully highlights the contributions and novelties in her own results. This gives me reason to believe that the candidate has a thorough knowledge of the research topics and what has been achieved by other authors on the topics of the presented research.

1.5. Type of research:

A) Theoretical	4 points	
B) Applied	4 points	
C) Theoretical with application elements	4 points	X

D) It does not correspond to the level specified in the Act for the Development of the Academic Staff in the Republic of Bulgaria and the Regulations	0 points	
		one of the answers given is marked with the sign "X"

The level of research must be substantiated if answer D is marked.
The candidate's research is of a scientific and applied nature. The candidate's work in the field of studying the electronic polarizability and optical basicity of simple oxides and oxide glasses, by applying the polarization approach, as well as those relating to the study of the composition-structure-properties relationship of new glasses with the participation of classical and conventional glass-forming agents and modifying oxides, by applying modern methods of structural analysis are mainly of a scientific nature. The candidate's work related to the structural characterization of new glasses, glass-ceramics and ceramics for application in dental and regenerative medicine, are of a scientific and applied nature.

1.6. 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 scientific papers presented in the candidate's competition, it is clearly seen that the research goals are clearly formulated and consistently implemented in separate groups of publications with a pronounced scientific and scientifically applied nature. The main goals of the candidate are aimed at: 1. Obtaining new theoretical and experimental data on the electronic polarizability and optical basicity of simple oxides and oxide glasses, establishing the composition-structure-properties relationship, by applying the polarization approach. 2. Studying the composition-structure-properties relationship of new glasses with the participation of classical and conventional glass-forming agents and modifying oxides, by applying modern methods of structural analysis for application as functional materials with magnetic, electrical, catalytic and optical properties. 3. Obtaining and structural characterization of new glasses, glass-ceramics and ceramics for application in dental and regenerative medicine.

1.7. Methods of research:

A) Adequate to research and set scientific objectives and /or applications	8 points	X
B) Partially appropriate, enabling part of the scientific objectives and / or applications to be achieved	4 points	
C) Inappropriate methods	0 points	

		one of the answers given is marked with the sign "X"

Methods must be specified. The type of methods used is justified.
In her scientific research, Senior Asst. Prof. Tina Tasheva applies both classical and innovative research methods that prove the achieved scientific results. When characterizing new materials, appropriate methods such as transmission electron microscopy TEM, scanning electron microscopy SEM, X-ray diffraction analysis XRD, infrared microscopy IR, UV-Vis analysis were used, the thermal properties of the materials were determined by TGA and DSC analyses.

1.8. Candidate research contributions:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	X
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	
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.
The candidate's contributions are directed in two main directions: **New data were obtained on the interrelationships between the chemical composition, structure, electronic polarizability and optical properties of simple oxides, oxide glasses and multicomponent glassy systems.** An analysis of the electronic polarizability in Bi_2O_3-based glasses was performed, including those involving a classical glass former (SiO_2, P_2O_5, GeO_2, B_2O_3), a conditional glass former such as TeO_2, modifying oxides (Li_2O, ZnO), as well as oxides such as PbO, Ga_2O_3 and RE_2O_3, the optical basicity, $\Lambda(n_0)$ and the interionic interaction parameter, $A(n_0)$, were calculated using equations based on the Lorentz–Lorentz formula and the Yamashita-Kurosawa theory, and a strong dependence between $\Lambda(n_0)$ and $A(n_0)$ in Bi_2O_3-based glasses was demonstrated. The structural role of Nb_2O_5 in multicomponent oxide glasses has been studied, and it has been found that deformed NbO_6 octahedra, characterized by low phonon energy, and the clustering of angularly shared Nb_2O_5 octahedra increase the electronic polarizability of the glass and improve the optical properties of rare-earth ions. New glass compositions in the TeO_2–V_2O_5–MoO_3 system, obtained by the method of rapid cooling of the melt, have been studied, and the correlation between the electronic polarizability, optical basicity and the oxygen O 1s binding energy, determined by X-ray photoelectron spectroscopy (XPS), has been traced. It has been shown that with increasing optical basicity, a decrease in the O1s binding energy is observed, which corresponds to a decrease in the interaction parameter and the average strength of the BM–O single bond. New glass compositions in the TeO_2–BaO–V_2O_5 system have been obtained and studied, it has been proven that the glasses are characterized by high values of polarizability and basicity, which is associated with the presence of weakly polarized, but bulky cations such as Te^{4+} and Ba^{2+}.

New glasses in the Na_2O- CaO-SiO_2-Fe_2O_3 and Na_2O-BaO-ZrO_2-TiO_2-B_2O_3-SiO_2-Al_2O_3 systems have been obtained and structurally characterized, and it has been proven that increasing the concentration of Fe_2O_3 leads to an increase in density, molar volume and refractive index, as well as to changes in oxygen density, which reflect structural depolymerization of the silicate network.

Development of new functional vitreous, glass-crystal and ceramic materials with potential for application in dental and regenerative medicine.

New silicate and borosilicate glasses, glass-ceramics and ceramics have been developed and characterized, intended as a glaze layer on dental zirconia ceramics (Y-TZP). The candidate has also participated in the development of new bioactive glassy, glass-ceramic and ceramic materials based on biogenic hydroxyapatite (BHA), synthesized from Rapana venosa shells, in combination with monocalcium phosphate monohydrate, in which, using modern methods of structural analysis, in addition to the presence of an amorphous phase and $(Ca_{10}(PO_4)_6(OH)_2$, the presence of a new bioactive crystalline phase $Na_3Ca_6(PO_4)_5$ has been established.

1.9. 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	X
B) The candidate has at least an equal participation in most of the submitted papers	7 points	
C) The candidate has a secondary participation in most of the submitted papers	4 points	
D) The candidate participation is unnoticeable	0 points	
		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.
Given the fact that in 10 of the submitted scientific papers, Senior Assistant Professor Tasheva is the first author, it gives me reason to believe that she has an equal contribution to achieving the results obtained in the submitted scientific papers.

1.10. 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"

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

The candidate in the competition, Assist. Prof. Tina Tasheva, has published a textbook, Manual for Exercises in Structural Analysis, HTMU, 2025, ISBN 978-954-465-177-0, under her guidance and consultations, 7 graduates in the OCS "bachelor" and "master" have defended their degrees. The candidate lectures and exercises in several disciplines in the field of structural analysis in the Department of "Silicate Technology".

1.11. Critical notes:

A) Lack of critical notes	8 points	X
B) Critical notes of a technical nature	7 points	
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 critical remarks towards the candidate for the academic position of "Asoc. Prof.", Assist. Prof. Tina Radmilova Tasheva.

1.12. Conclusion

A) The evaluation of the candidate's activity is **POSITIVE**	This evaluation is assigned to a total number of at least 65 points	X
B) The evaluation of the candidate's activity is **NEGATIVE**	This evaluation is assigned to a total number below 65 points	
		one of the answers given is marked with the sign "X"

To be filled in if requested by the reviewer
The publications and habilitation thesis submitted to me for review by the candidate are on the topic of the competition and represent original scientific and applied scientific contributions in the field of materials and materials science. The candidate demonstrates maturity, creative thinking and the ability to select and successfully solve current problems with a long-term effect for science and practice. This gives me reason to give a positive assessment to the only candidate in the competition, Senior Assistant Professor Dr. Tina Radmilova Tasheva, and to recommend her election as an "associate professor" in the field of higher education 5 Technical Sciences, professional field 5.6 Materials and Materials Science, scientific specialty "Silicate Materials".

05.12.2025	The review was written by:	
date		signature