

REVIEW

to occupy the academic position:

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

Candidates to occupy the position:

1	Assoc. prof.	PhD	Lachesar	Nikolaev	Radev	UCTM-Sofia
№	academic position	scientific degree	name	middle name	last name	workplace

Scientific area:

5	Technical Sciences
code	name

Professional area:

5.10	Chemical Technologies
code	name

Scientific specialty:

Technology of Inorganic Substances

The competition has been announced:

101.	27.12.2019.	Bases of the Chemical Technology	Chemical Technologies
in SG issue	date	for the needs of the Department	Faculty

The review was written by:

Prof.	DSc; PhD	Todorka	Gancheva	Vladkova	UCTM, Res.Sec.
academic position	scientific degree	name	middle name	last name	workplace

1. Review for the candidate:

Assoc. prof.	PhD	Lachesar	Nikolaev	Radev
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.
no

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.
Criterion 4 – there are more than 10 scientific publications in specialized scientific journals,

referred and indexed in world known scientific information data bases.

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	
B) Research is relevant. Results from other authors are known for each of the topics and / or applications studied.	5 points	X
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.

List and copies of 35 publications are presented. The majority publications: No 1 - 7 and No 18 - 22 are devoted to a development of bioactive glass ceramics and polymer composites with its participation, all for bone tissue engineering. These investigations are un in doubtly actual but results of other authors are known. Publications No 8 and 23 are concerning catalytic systems. Publications No 10 - 14 are devoted to silver or copper containing antimicrobial materials, in some cases in combination with other antimicrobial agents. The worldwide increasing microbial resistance to the conventional antibiotics raises the need in development of new antimicrobial agents for healing and antimicrobial protection of medical devices such as urinary catheters and stents, orthopedic implants, dentistry devices, cardiovascular devices, etc. The aim is to be decreased the associated to their application infections hus healing is difficult, costly and with negative issues for the patients in some cases. In this light, the investigations onto the development of new antimicrobial materials are very actual without to be pioneering since results of other authors are also known.

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.

The candidate knows the achievements of other authors in details. That is seen from the introduction of every publication where analysis is made of the known to outline the new.

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 aims, formulated in the publications demonstrate the presence of application elements.

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.

The objectives of all investigations are realistic and majority of them are of scientific and application interest. Although in several thematic directions, the investigations are based on one the same synthesis road, namely multistep sol-gel procedure, developed by the candidate.

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.

The used methods are adequate to the research aims. Bioactive glasses and glass ceramics, catalysts and complex compounds were synthesized by modified multistep sol-gel procedure developed by the candidate. They were characterized by elemental composition, chemical bonding, structure, morphology, phase composition, etc. employing relevant analytical methods, like FTIR, UV-VIS, SEM, TEM, XPS, XRDq etc. The bioactivity was tested in simulated body fluid (SBF) according to Kokubo method. The formation of surface carbonate apatite, type B was followed because it is accepted as a bioapatite. Quantum-mechanical methods were used to study the structure of the complex compounds. The catalytic systems were tested in real chemical processes.

1.8. 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	
C) They are of scientific and / or applied interest	12 points	X
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 scientific interest is demonstrated by the citations of the corresponding publications. Of most high scientific interest is paper No 5 – 23 citations, followed by papers No 3 – 18 and paper No 4 – 7 citations. There is lower interest (5 to 1 citations) to papers No 9, 14, 10, 11 и 13. Continuous interest is demonstrated to some earlier published (2006 - 2009) but still cited papers that were included in the candidate's habilitation procedure.

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.

In the list of 35 publications, presented for this professor procedure, the candidate has 2 individual review papers. He is the first author in 15 papers and second author, after his PhD student, in other 13. This demonstrates that assoc. prof. L. Radev has had not simple equal participation but he had leading action in the corresponding investigation and paper preparation.

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 gives 3 lecture courses and has full academic loading. He works perfectly with bachelor or master thesis preparing students and in addition he was mentor of 3 successfully graduated PhD students. Assoc. prof. L. Radev is a co-author of a useful textbook for the students of UCTM.

1.11. Critical notes:

A) Lack of critical notes	8 points	
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	X
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.

The scientific investigations are clearly focused in one research area but their results were not summarized in a monograph that could increase their visibility. It could be done in a near future.

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

My positive evaluation of the candidate's activity is based on the following: all required documents are presented; the activities are adequate to the minimum requirements for the position "professor" ; without to be pioneering, all scientific investigations are actual; he has lidding action in the research and the papers preparation; the citations demonstrate interest

to the scientific results; excellent pedagogical activity (gives 3 lecture courses; mentor of 3 successful PhD students; co-author of textbook for student in UCTM); investigations, clearly focused in one scientific area that supposes a monograph preparation in a near future to make them more visible for the scientists.

Candidate ranking (in case of more than one candidate who has received a positive evaluation to occupy the academic position):

Based on the assigned points, the candidates who have received a **positive** evaluation are ranked as follows:

1	Assoc. prof.	PhD	Lachesar	Nikolaev	Radev	87
place	academic position	scientific degree	name	middle name	last name	points

31.03.2020.	The review was written by:	
date		signature