

Appendix 12c

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.	Dr.	Dancho	Lyubenov	Danalev	University of Chemical Technology and Metallurgy
No	academic position	scientific degree	name	middle name	last name	workplace

Scientific area:

5	Technical Sciences
code	name

Professional area:

5.11.	Biotechnology
code	name

Scientific specialty:

Technology of biologically active substances
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The competition has been announced:

3	10/01/2020	Biotechnology	Faculty of Chemical and Systems Engineering
in SG issue	date	for the needs of the Department	Faculty

The review was written by:

Assoc. Prof.	Dr.	Katya	Ivanova	Gabrovska	"Prof. Dr. Assen Zlatarov" University
academic position	scientific degree	name	middle name	last name	workplace

1. Review for the candidate:

Assoc. Prof.	Dr.	Dancho	Lyubenov	Danalev
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.

The submitted materials for the academic position "Professor" correspond to the requirements of the Act for the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its implementation and the requirements in the rules of the UCTM. The materials are precisely arranged, correctly and accurately quoted by the candidate in the attached references.

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 applying for the academic position "Professor" with 47 publications. 31 were published in journals referenced in the *Web of Science* and *Scopus* data bases with Impact Factor or Scientific Journal Ranking, and 16 were published in non-refereed peer-reviewed journals or Scientific development has been presented at 25 conferences in the form of 61 poster announcements and 12 oral reports. The Impact factor of the competition materials is 18,772 and the h-factor is 6. He is the author of Textbooks on a lecture course in Instrumental Analysis in Biotechnology, as well as co-author of 9 textbooks and 7 handbooks. The applicant was taking part in 30 projects: 8 with the National Research Fund, 11 with the Science Fund of the UCTM, 6 with industry and 4 educational ones.

The scientific works with the participation of Assoc. Prof. Dancho Danalev have 36 citations in scientific journals, referenced and indexed in world renowned scientific information databases. The most cited works of the candidate are:

- M. Almendros, D. Danalev, M. François-Heude, P. Loyer, L. Legentil, C. Nugier-Chauvin, R. Daniellou, V. Ferrieres, Exploring the synthetic potency of the first furanothioglycoligase through original remote activation, *Org. Biomol. Chem.*, 2011, 9, 8371-8378 - 9 times
- L. Vezenkov, J. Sevalle, D. Danalev, T. Ivanov, A. Bakalova, M. Georgieva and F. Checler, Galanthamin based hybrid molecules with acetylcholinesterase, butyrylcholinesterase and γ -secretase inhibition activities, *Curr. Alz. Res.*, 2012, 9, 600-605 - 9 times

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.
<p>The proposed studies and thematic focus are relevant. Of particular interest are those related to the synthesis and characterization of biomolecules containing a peptide fragment, with a view to their use as preparations for the treatment and diagnosis of various diseases in human and veterinary medicine. In addition, a wide variety of thioaryl derivatives, galantamine derivatives, amino acid pyrrole derivatives, as well as a number of novel analogs and hybrid molecules have been synthesized for the first time.</p> <p>The biological activity of the synthesized biomolecules has been investigated using developed bio-analytical techniques, and it is important to clarify the relationship between structure and their activity. This focus further defines research as relevant and significant.</p> <p>Other research is in the field of developing new methodologies for training and assessment in chemistry and environmental protection and biotechnology.</p> <p>The opinion formed from the analysis of the submitted scientific works is for innovative and valuable research, with results that have been well reflected in the world scientific literature. The 36 citations (validated by SCOPUS and Web of Science) to the publications of the candidate support this assessment.</p>

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"
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The evaluation must be substantiated if answer C is marked.
<p>Experimental studies are hard working and require very good planning, organization of the experiment, processing of the collected data and precision analysis. There is a growing interest in the worldwide databases and publications on topics related to candidate research. Assoc. Prof. D. Danalev is well acquainted with the achievements of other authors studied topics . This is evidenced by the summary in the form of a review of the available information in the literature, as well as a summary of his study on serine proteinase inhibitors that are potential candidates for new drugs in the treatment of patients with haemostatic disorders.</p>

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.
<p>Applicant's scientific and applied work is closely related to the professional field 5.11 Biotechnology, at which the competition is announced. The scientific works reflect the whole research and applied activity related to theoretical and applied research, focused mainly on synthesis, characterization, isolation, biological activity study, analysis and derivation of dependencies: structure-activity of biologically active molecules.</p>

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 set are realistic and the achieved results are of considerable scientific and applied interest. The objectives are innovative and aimed at the practical application of newly synthesized hybrid biomolecules.

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 applied research methods are adequate to the goals and very well selected. A wide range of modern methods for characterization and research of synthesized materials were used:
- The structure of the new hybrids obtained was investigated by X-ray diffraction, Fourier transform infrared spectroscopy, scanning electron microscopy and BET analysis. The results showed that the interaction between the SiO₂ network and the polysaccharide by H-linkage formation was successful.

- A potentiometric method was used to characterize newly synthesized biomolecules by temperature and pH optimum.
- Characterization of enzymes, biologically active amino acids and peptides by type of inhibition, inhibitory activity, K_i and IC_{50} values
- high performance liquid chromatography with fluorescence detector for the determination of N-methyl carbamates in the liver matrix
- Gas chromatography with electron capture detector was used to quantify pesticide content.
- GC / MS for phthalate determination.

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	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.

All applications submitted for participation in the competition are in the field of biotechnology, in particular synthesis, characterization, isolation, study of biological activity, analysis and structure activity relationship of biologically active molecules, as well as development of new methods for training and evaluation in chemistry and environmental protection and biotechnology, which are the base for establishing of good specialists in the technical and natural sciences.

Scientific contributions can be summarized in four main areas:

1. Synthesis, biological studies and some structure-activity relationships on biomolecules with diverse biological activity and membranes with incorporated biomolecules with potential application in biotechnology
2. Kinetic studies on enzymes, biologically active amino acids and peptides
3. Development of bioanalytical techniques for the determination of biologically active

substances in the analysis and control of food and medical drugs and the detection of pollutants

4. Research on modern approaches to training in chemistry and engineering disciplines in the field of biotechnology.

The scientific achievements of the Assoc. Professor. Dr. D. Danalev can be assessed as amplifying the existing knowledge and applying the theory and practice.

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	
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	
		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.

The candidate is applying for the academic position with 47 publications. 1 of all publications is independent. The candidate is the first author in 4 publications, the second author in 11 publications and the third author in 11 publications. The reviewer assumes that the contribution of the candidate is equivalent in most publications. The submitted materials confirm that the applicant has a place in the joint publications.

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	6 points	

university. The textbooks issued satisfy the requirements of the Regulations.		
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.
<p>The candidate is a lecturer in 11 courses, 5 courses in Bachelor Degree and 6 courses in Master Degree, mainly in foreign languages (French and English). Assoc. Prof. D. Danalev is the only author of a textbook "Instructional notes for a lecture course in Instrumental Analysis in Biotechnology" . He is a co-author of 7 handbooks and 9 textbooks.</p> <p>He has been a supervisor of 8 PhD students, two of which have been successfully defended. He has managed successfully more than 90 graduate students and more than 30 interns. He has reviewed many scientific publications in refereed international journals with an impact factor.</p> <p>Assoc. Prof. D. Danalev is a Member of the Editorial Board of Journal of Chemical Technology and Metallurgy and Co-editor of Peptides, Proceedings of the 33rd European Peptide Symposium, 2015.</p> <p>He has taken part in 16 scientific juries as a reviewer: PhD Degree Student - 9, "Chief Assistant Professor" - 3, "Associate Professor" – 4 "Professor" - 1.</p> <p>He is a guest lecturer at the National University of Semey and at the University of Sergius-Pontoise, France.</p> <p>The data presented so far indicate that the applicant can be assessed as a very good lecturer, researcher, organizer, leader, promoter of the latest achievements in science.</p>

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 notes on the work of the candidate applying for the academic position "Professor" .

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

After getting acquainted with the materials and scientific work and analysis of scientific and applied contributions, I give a positive assessment and recommend to the Scientific Jury to award Assoc. Prof. Dancho Lyubenov Danalev the academic position "Professor " in higher education Technical Sciences, professional field 5.11 Biotechnology.

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

1	Assoc. Prof.	Dr.	Dancho	Lyubenov	Danalev	95
place	academic position	scientific degree	name	middle name	last name	points

	The review was written by:	
date	Assoc. Prof. Dr. Katya Ivanova Gabrovska	signature