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.	Petar	Todorov	Todorov	UCTM, Organic chemistry Department
№	academic position	scientific degree	name	middle name	last name	workplace

Scientific area:

4.	Natural Sciences, mathematics and informatics
code	name

Professional area:

4.2.	Chemical Sciences
code	name

Scientific specialty:

Organic chemistry

The competition has been announced:

67	13.08.2021	Organic chemistry	Faculty of Chemical Technology
in SG issue	date	for the needs of the Department	Faculty

The review was written by:

Prof.	Dr.	Dancho	Lyubenov	Danalev	UCTM, Biotechnology Departemnt
academic position	scientific degree	name	middle name	last name	workplace

1. Review for the candidate:

Assoc. Prof.	Dr.	Petar	Todorov	Todorov
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 only candidate in the contest for the academic position "Professor" announced in SG No. 67 / 13.08.2021 for the needs of the Organic Chemistry Department of the University of Chemical Technology and Metallurgy is Assoc. Prof. Dr. Eng. Petar Todorov Todorov from the same department. All documents according to art. 51 and 52 of Regulations for application of the Act for development of the academic staff of UCTM are available in the documentation submitted for participation in the contest. It makes an excellent impression that the documents are carefully arranged and described in accordance with the requirements of the Act for development of the academic staff of the Republic of Bulgaria and the Regulations for its implementation, as well as those of UCTM.

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.
Assoc. Prof. Dr. Petar Todorov has a total number of 55 publications, and in the contest for professor he participates with 26 publications in the scientific field of the contest, all of them referred to in the world databases Web of Science and Scopus. Of all 26 publications, 6 are in journals with Q1, 7 with Q2, 8 with Q3, 3 with Q4, 1 is in a journal with SJR and 1 is a chapter of a book, which contributes to the candidate a common remarkable i.f. 52,879. It makes a very good impression that in most of the publications the candidate for the academic position of "professor" is the first (10 publications) or second (9 publications) author, which unequivocally shows his main participation in the works. In almost half of the publications (11) Assoc. Prof. Todorov is the author for correspondence, which shows that the realized scientific studies are in the field of his competence and scientific interest. 10 of the submitted publications are referred to indicator 4. Articles (submitted for habilitation work - at least 10) of Regulations for application of the Act for development of the academic staff, which brings the candidate 202 points, with a required minimum of 100 points, which significantly exceeds the minimum requirements of Regulations for application of the Act for development of the academic staff. The remaining 16 publications are distributed 15 to indicator 7. Scientific publication, published in journals referenced and indexed in the Web of Science and Scopus databases and one is directed to indicator 8. Published chapter of a book or collective monograph. This brings a point asset of 274 points per group of indicators D of the applications of Regulations for application of the Act for development of the academic staff, which also exceeds the minimum requirements of 200 points for the academic position of "professor". By indicator 11. Citation in scientific publications, monographs, collective

volumes and patents, referenced and indexed in the databases Web of Science and Scopus, Assoc. Prof. Todorov presents a remarkable number of 248 citations of his scientific works, which bring him points an asset of 496 points. This significantly exceeds the requirements of 100 points of Regulations for application of the Act for development of the academic staff. This has contributed to the acquisition of significant h-factor 9 by Assoc. Prof. Todorov, according to the Scopus database, which is an inevitable proof to its high recognition in the scientific community working in the same or close to his field. In the last group of indicators E from Regulations for application of the Act for development of the academic staff the candidate for the academic position "Professor" reports on a defended doctoral student under his independent supervision Petya Nikolaeva Peneva, Ph.D. with title of Ph.D. thesis “Synthesis, characterization and biological activity of new hemorphin analogues”, which brings him an asset of 50 points on indicator 13. Management of a successfully defended Ph.D. student and participation in 5 national and one international scientific or educational project, as one with the National Fund for Scientific Investigations of the Republic of Bulgaria he is the head, presented in Annex 6f of the documentation, brings him an additional asset on indicators 14-16 of 90 points. For the point asset by group of indicators F the documentation submitted under the competition contains 18. Attracted funds for projects managed by the applicant with a point asset of 24 points and two submitted Published university textbook or textbook used in the school network by criterion 20 (Petar Todorov Todorov, Daniela Simeonova Tsekova, Development of an electronic form of a bachelor's degree course: Organic Chemistry. Module: laboratory exercises, 2014. ISBN 978-954-465-125-1. And Emilia Dimitrova Naidenova, Petar Todorov Todorov, Daniela Simeonova Tsekova, Development of an electronic form of a bachelor's degree course: Organic Chemistry, module: lectures on Organic Chemistry, 2014. ISBN 978-954-465-126-8.), which bring the candidate 16.66 points. Thus, the total number of points by group of indicators E of the candidate is 180.66, which again exceeds the minimum national requirements of the Act for development of the academic staff and the Regulations for its implementation. Thus, the candidate for the academic position "Professor" Assoc. Prof. Petar Todorov collects a total of 1202.66 points, which is completely satisfactory, and according to some indicators significantly exceeds the minimum national requirements for all indicators for holding this position.

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.
Assoc. Prof. Todorov presents studies in several areas: - synthesis and investigations on peptides with different biological activity - papers A1-A3, A5, A7, A11, A12, A14-A16, A19 and A26; - synthesis and research of hydantoins and their derivatives - articles A4, A8-A10, A13, A17, A18 and A20-A25; - new engineering approaches in the teaching of organic and analytical chemistry - paper A6. The presented studies are very relevant, further developing studies of other scientists presented in the

literature, concluding important structure-activity relationships and showing valuable for practice properties and activities of the synthesized compounds. The development of personnel in the field of engineering and chemical sciences is related to the correct approach and training in their formation in order to acquire abilities and skills for independent work, making adequate decisions and dealing with various problems in a real environment. In this context is the work in the third direction, in which Assoc. Prof. Todorov presented his work.

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 works presented by Assoc. Prof. Todorov in the form of scientific publications and projects clearly show in his literary part that he knows in great detail the work of various other teams working on similar topics. The fact of the large number of citations that Assoc. Prof. Todorov presents is also indicative of the recognizability of his work in the world scientific community, as well as in our country.

1.5. Type of research:

A) Theoretical	4 points	
B) Applied	4 points	X
C) Theoretical with application elements	4 points	
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 presented works by the candidate are mainly of an applied application and important relationships structure-activity of the newly synthesized molecules are concluded in them, as well as their valuable properties for practice.

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 main goals of the research conducted by Assoc. Prof. Todorov are to obtain valuable knowledge about the structure-activity relationships of newly synthesized molecules, as well as to show their valuable properties for practice, thanks to which they can find wide practical application.

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.
All methods used to achieve the goals set in the works are in the field of chemical sciences, especially organic chemistry, analytical chemistry, physicochemistry and chemistry of materials, which shows that the areas of scientific interest of Assoc. Prof. Todorov are in the professional direction 4.2. Chemical Sciences, where he applied for the academic position of "professor". All methods are adequately selected to achieve the goals and objectives set in the studies.

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 scientific contributions from the works presented by Assoc. Prof. Petar Todorov in the contest for the academic position "Professor" can be summarized in the following three areas: **1. Synthesis, characterization and study of the biological properties of peptides and peptide mimetics** (articles A1-A3, A5, A7, A11, A12, A14-A16, A19 and A26). Peptides perform a large number of biological functions in the body. They can be neurotransmitters,

neuromodulators, hormones, inhibitors and activators of various enzyme systems, etc. Many peptide hormones and other peptide-protein regulators are involved in a lot of the biological and biochemical processes in a living organism. They have been found to have a specific structure and to have high biological activity over a wide concentration range. In addition, small modifications in their molecules can lead to the development of substances valuable for diagnosis and medical practice. The advantages of peptide and amino acid drugs over all others are that they do not accumulate in the body and in their pure form usually do not cause unwanted side effects. The products of their metabolism are amino acids, which are also formed by the breakdown of proteins contained in food. Therefore, a large number of drugs based on peptides with different biological action / anticonvulsant, anti-inflammatory, analgesic, anti-tumor, antibacterial and many others/ have been successfully synthesized and applied in medical practice through the approaches of synthetic organic, bioorganic and biochemistry. In the context of this importance of peptides are the scientific contributions achieved in the above works of Assoc. Prof. Todorov, especially synthesis of new molecules with opioid activity, in-depth and extensive study of their biological activity and concluding of valuable structure-activity relationships.

2. Synthesis, characterization and study of various valuable properties of new hydantoin derivatives (papers A4, A8-A10, A13, A17, A18 and A20-A25).

Organic compounds from the group of hydantoins, as well as their derivatives e.g. substituted at C-5, are widely used in various fields, and especially valuable is the application of some of them as drugs against epilepsy, arrhythmia, as antitumor agents, in the treatment of asthma, etc. On the other hand, they are also of interest as starting materials for the synthesis of non-proteinogenic amino acids and their incorporation into peptides with improved pharmacokinetic and pharmacodynamic characteristics. Hydantoins are known to be important drugs. The discovery of the anticonvulsant effects of 5-ethyl-5-phenylhydantoin and its use as an antiepileptic agent provoked the synthesis and study of a large number of 5,5'-disubstituted hydantoins, which have found various applications in medicine. 5,5'-diphenylhydantoin (Phenytoin, Dilantin or Epanutin) is used in medicine to treat various forms of epileptic seizures. In this context are the studies presented by Assoc. Prof. Todorov for obtaining new molecules with anticonvulsant activity, in-depth and extensive study of their biological activity and concluding valuable for practice structure-activity relationships.

3. New engineering approaches in the teaching of organic and analytical chemistry (articles A6)

All the achievements in the field of dynamically developing science and in particular its interdisciplinarity in the field of chemistry would not be possible without the training and creation of personnel with sufficiently high competence, technological literacy and ability to make adequate decisions based on chemistry and special engineering as well as technological disciplines training. The development of appropriate teaching methods, tools and platforms is a key element in teaching and learning in the natural sciences and in particular in chemistry and engineering. In this direction is the study summarized in the paper A6 of Assoc. Prof. Todorov. The presented study summarizes and presents a student research project for sampling and analysis of basic physicochemical indicators of drinking water from different regions of Bulgaria. The project is included in the curriculum of the disciplines studied in parallel in the second year: organic and analytical chemistry. The project has developed a modern and up-to-date approach to acquiring knowledge and skills to create approaches and perform tasks related to pre-laboratory activities, sampling, sample preparation and analysis of aqueous samples for pH, hardness, organic compounds, sodium, potassium and ions of heavy metals such as cadmium, copper, iron, lead and manganese using titrimetric methods, atomic absorption and atomic emission spectrometry, potentiometry and voltammetry.

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.
As it was mentioned in point 1.2. in most of the publications the candidate for the academic position "professor" is the first (10 publications) or second (9 publications) author, which unequivocally shows his main participation in the works. In almost half of the publications (11) Assoc. Prof. Todorov is the author for correspondence, which is an undoubted proof that the scientific studies are in the field of his competence and scientific interest. In the contest documents, Assoc. Prof. Todorov also presents participation with 41 posters in various national and international conferences after taking the academic position of "Associate Professor".

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.
Assoc. Prof. Todorov presents evidence in the documents for the contest for conducting lecture courses in the bachelor's degree at UCTM of the disciplines Organic Chemistry I and II part for full-time and part-time students of all specialties. Since the introduction of the course "Introduction to the specialty" in the curriculum in 2020, he has led this discipline to full-time and part-time students studding in specialty "Biomedical Engineering". In the period after 2016, Assoc. Prof. Todorov has started lecturing and heading laboratory exercises in the discipline "Gas and High Performance Liquid Chromatography - an application for the analysis of biologically active compounds" in "Master" program. I had the opportunity to receive feedback on the approach and its teaching from students studding in the Biotechnology Department (specialties Biotechnology and Biomedical Engineering), and the general opinion shared by students with me is that he has an impeccable reputation as a colleague with a very high theoretical and practically background. I believe that for the period of 8 years since Assoc. Prof. Todorov held the academic position of "Associate Professor" to date, he has gained sufficient pedagogical experience through his pedagogical activities as in teaching the disciplines mentioned above in the Bachelor's and Master's degree. The 10 graduates led by him in my opinion are quite sufficient for his growth and excellent subsequent realization in the next academic position "Professor". The global situation in which the worldwide crisis with the COVID-19 virus puts us, as well as the rapid development of modern online and Internet technologies makes it absolutely impossible to teach chemistry and engineering without the use of information technology tools. In this context, the two textbooks developed and presented in the contest "Electronic form of a bachelor's degree course: Organic Chemistry. Module: "laboratory exercises" and "Electronic form of a bachelor's degree course: Organic chemistry. Module: lectures on Organic Chemistry" by a team with the participation of Assoc.

Prof. Todorov fully meet the modern needs of the educational process at Bulgarian universities and in particular UCTM.

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 on the documents submitted by Assoc. Prof. Dr. Eng. Petar Todorov for participation in the contest for the academic position of "professor". Here I will allow myself to point out some additional positive moments from the biography of Assoc. Prof. Todorov, which are related to Art. 55 (2) of the Regulations for application of the Act for development of the academic staff dividing them into two directions: scientific activity and pedagogical activity. Scientific activity: 1. For a period of 6 months Assoc. Prof. Todorov has specialized in the Institut des Biomolécules Max Mousseron (IBMM) / Département des Aminoacides, Peptides et Protéines (DAPP) / Université Montpellier 2 / France, where, as can be seen from his work, he undoubtedly obtained additional and has deepened his knowledge in the field of peptide chemistry and biology; 2. There are a number of Erasmus specializations abroad: - Kazimierz Wielki University, Bydgoszcz, Poland for the period from 24.10.2019 to 31.10.2019. - Alexandru Ioan Cuza ”University of Iasi, Romania for the period from 17/09/2018 to 23/09/2018. - Kazimierz Wielki University, Bydgoszcz, Poland for the period from 16.10.2017 to 21.10.2017. 3. Assoc. Prof. Todorov speaks English and French, which undoubtedly contributes to the successful dissemination both at the level of scientific conferences and in quality scientific publications of his scientific production; 4. He is a member of a number of prestigious national and international organizations in his scientific field: Bulgarian Society of IUPAC "Young Scientific Researchers Association", European and Bulgarian Peptide Society, actively participating in the events organized by them; 5. He is a reviewer of scientific articles for authoritative international journals Heteroatom Chemistry / Wiley; Structural Chemistry / Springer; Letter Drug Design Discovery / Bentham Science; Phosphorus, Sulfur, and Silicon and the Related Elements / Taylor and Francis; Bulgarian Chemical Communications and others. 6. Participation in scientific juries: - for the degree "doctor" - 5 - for the academic position “Chief Assistant "- 3 - for the academic position of "Associate Professor" - 2 - for the academic position of "Professor" - 1 Pedagogical activity: 1. Since 2010 Assoc. Prof. Todorov is responsible for teaching activities of the Department of Organic Chemistry, which has undoubtedly led to the development of appropriate skills and approach for working with students and fellow teachers;

2. A logical continuation of his administrative activity is his election as Head of the Department of Organic Chemistry in 2021; 3. At the time when the main structure of UCTM included the existence of Departments, Assoc. Prof. Todorov was a member of the Department of Chemical Sciences, and later in 2021 he is also a member of Faculty Council of the Faculty of Chemical Technology. He is also a member of the General Assembly of UCTM; 4. He is a member of a number of commissions at the Faculty of Chemical Technology of UCTM, especially: the Attestation Commission at the Department of Chemical Sciences at UCTM, the Attestation Commission at the Faculty of Chemical Technology of UCTM and Diploma Defense Committee at the Department of Organic Synthesis and Fuels.

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
In a relation with an order of the Rector of UCTM № P-OX-372 from 08.10.2021 for my inclusion in a scientific jury for a contest announced in SG No. 67 / 13.08.2021 for the needs of the Department of Organic Chemistry of UCTM, my choice as a reviewer at the meeting of Scientific jury on 21.10.2021 and based on all the above arguments in my review, as well as my personal excellent impressions gained during the years of joint work with Assoc. Prof. Todorov, I confidently vote **"positive"** , Assoc. Prof. Dr. Eng. Petar Todorov Todorov to be proposed and approved by the Distinguished Faculty Council of the Faculty of Chemical Technologies of UCTM for an academic position "Professor" in Area 4. Natural Sciences, Mathematics and Informatics, Scientific area 4.2. Chemical sciences (Organic chemistry).

8.11.2021	The review was written by:	
date		signature