Appendix 12d

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**	**Stoyko**	**Alexandrov**	**Petrin**	**UCTM - Sofia**
№	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

The competition has been announced:

71	**07.08.2026**	**Biotechnology**	**Faculty of Chemical and Systems Engineering**
in SG issue	date	for the needs of the Department	Faculty

The report was written by:

Professor	**PhD**	**Petar**	**Todorov**	**Todorov**	**UCTM - Sofia**
academic position	scientific degree	name	middle name	last name	workplace

1. Report for the candidate:

Assistant Professor	PhD	Stoyko	Alexandrov	Petrin
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.
Senior Asst. Prof. Dr. Eng. Stoyko Petrin participated in the competition for associate professor with 36 publications, of which 27 are in journals referenced in the world databases Web of Science and Scopus with an impact factor or SJR, and 9 are in non-refereed journals with scientific review or in edited collective volumes of conferences, 1 textbook and over 50 noted citations. Dr. Petrin presents for the contest participation in 10 projects, 6 of which at the Bulgarian National Science Foundation.

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 publications with which Senior Assistant Professor Stoyko Petrin participated in the competition for the academic position of "associate professor" present research with a scientific, scientific-applied and applied focus, dedicated to current problems in the field of biotechnology. The main areas include the study of the kinetics of enzymatic processes, the pretreatment and bioconversion of various types of lignocellulosic biomass, the production of cellulose products with high added value and fermentable sugars, the development of biocomposites, the utilization of plant residues and natural bioactive compounds, as well as the synthesis and characterization of bioactive peptides.

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
The scientific research of Senior Assistant Professor Stoyko Petrin is aimed at solving current problems of scientific and applied importance and covers six main thematic areas: enzymatic hydrolysis and bioconversion of lignocellulosic biomass; production and modification of cellulose products with added value; production and improvement of the properties of wood fiber boards through the use and recycling of secondary raw materials; synthesis, modification and characterization of natural and synthetic bioactive compounds; as well as application of spectroscopic methods for studying chemical transformations and technological processes in the production of chemical cellulose.

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.

The contributions of the scientific developments of Senior Asst. Prof. Stoyko Petrin can be summarized as follows:

1. Physicochemical and kinetic regularities of the enzymatic hydrolysis of lignocellulosic biomasses. The adsorption and kinetics of enzymatic hydrolysis, the influence of the chemical composition and structure of the raw material, as well as the effect of pretreatment on the production of fermentable sugars from wood and plant biomass, including industrial hemp residues, have been studied.

2. Pretreatment and bioconversion of lignocellulosic biomass to fermentable sugars. Comparative studies of various wood and agricultural raw materials and pretreatment methods have been conducted. Conditions for increasing glucose yield through steam-explosion treatment and subsequent enzymatic hydrolysis have been established, as well as the potential of oxidizing reagents for improving cellulose accessibility and reducing the content of inhibitors.

3. Acid hydrolysis and modification of cellulose to obtain value-added products. The kinetics and conditions of acid hydrolysis of cellulose have been studied with a view to utilizing the hydrolysates for biogas production and obtaining microcrystalline and micro-fibrillated cellulose. Technological parameters have been determined to control the degree of depolymerization and achieve the target properties of cellulose products.

4. Production of fiberboard and utilization of secondary raw materials. The direction covers the development and improvement of technologies for the production of MDF and HDF boards by the dry method, the recycling of secondary fiber raw materials and the use of additives to improve the performance characteristics of the final products.

5. Production, modification and characterization of biologically active compounds. The research is aimed at the synthesis, structural modification and physicochemical characterization of natural and synthetic biologically active substances, including compounds with potential application in biomedicine and biotechnology.

6. Spectroscopic approaches for studying chemical transformations and the production of chemical cellulose. Infrared spectroscopy was used to monitor various chemical transformations.

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	
		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. From the review of the materials submitted by Senior Asst. Petrin for participation in the competition, it is established that he has an active and significant participation in the development of scientific research, the formulation of the main ideas and the definition of research goals in the majority of the submitted works. His contribution stands out both in the planning and implementation of the experimental work, and in the analysis, interpretation and generalization of the obtained results.

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

1.7. 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.

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** **(73 points)**
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

Based on the above, with conviction, I propose Senior Assistant Professor Dr. Eng. Stoyko Aleksandrov Petrin to be appointed as an Associate Professor in the scientific specialty 5.11. Biotechnologies (Technology of biologically active substances).

02.11.2026	The report was written by:	
date	**Prof. PhD Eng. Petar Todorov**	signature