

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	Senior assistant professor	PhD	Chavdar	Petrov	Chilev	UCTM
№	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:

Unit operations in Chemical and Biochemical Technologies
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The competition has been announced:

74	21.08.2020	Chemical Engineering	Chemical and System Engineering
in SG issue	date	for the needs of the Department	Faculty

The review was written by:

professor	DSc	Jordan	Yankov	Hristov	UCTM
academic position	scientific degree	name	middle name	last name	workplace

1. Review for the candidate:

Senior assistant professor	PhD	Chavdar	Petrov	Chilev
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	3 points	X
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Regulations		
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.

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 materials of the application meet all requirements of the law for academic development and the rules of its applications. Totally 24 published articles are applied and 3 articles related to the PhD thesis. In accordance with the existing score system for evaluation the results are:
<ul style="list-style-type: none"> • For points 3 and 4 there is a monograph where parts are based on 5 author's publications (not used in any other academic applications and procedures. In such cases (points 3 and 4) the minima of requirements are satisfied. • The articles indexed by worldwide scientific databases (WoS and SCOPUS) corresponds to 195 scores , in accordance with the established score system for evaluation. . • Publication, reviews but not indexed by worldwide scientific databases corresponds to 43 scores , in accordance with the established score system for evaluation.. • For points 5-11, as sum of all points evaluated, the applicant gets сумарно 236 score, greater than the minimal requirement of 200 scores. • The citations of the applied research article correspond to 814 scores, greater than the minimal requirement of 50 scores. • The works on national and international projects are evaluated with 40 scores • A textbook applied is evaluated with 40 scores. <p>Conclusion: The minima for all points and totally with respect to the complete score system evaluation are satisfied.</p>

1.3. Relevance of scientific and / or applied research:

A) The research is relevant. Part of the research is pioneering (no	7 points	
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results are known on the topic by other authors)		
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.
The research areas of Dr. Chlev are in three main directions
1/ Synthesis and characterization of microporous adsorbents (experimental and theoretical) for gas adsorption upon high pressure, mainly oriented towards hydrogen storage. The research performed is actual in the context of the <i>green energetics</i> . It should be mentioned the works on a <i>new high pressure adsorption isotherm</i> .
2/ Theoretical and experimental studies on extraction on biologically active substances from natural plants and herbs. The problems are always genuine with respect to domestic resources of bioactive substances and correspond to one of the central theme in the chemical engineering, i.e. fluid-solid mass transfer by extraction and leaching.
3/ Mathematical modelling and computer simulations of technological processes . This is a wide area and the applied materials indicate good skills of the applicant with respect to applied software packages applications. Precisely, the accent is on computer simulations rather than on development and build-up of mathematical models. .

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.

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.

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 tasks in the studies of Dr. Chilev can be outlined in some principle directions, among them :

1. Mathematical model on the hydrogen adsorption equilibrium in case of microporous adsorbents upin high pressure conditions. ;
2. Studies on compresses hydrogen storage oriented to advanced fuel tanks of vehicles, ;
3. Synthesis on new materials for microporous adsorbents ;
4. Studies on adsorption mechanisms towards new adsorbent applications and comparative analyzes with respect to widely applied and commercial available counterparts.
5. Evaluation of process parameters in case of extractions of biologically active substances from solid materials ;
6. Evaluations of the diffusivities of simplified models used in mass transfer modelling of extraction of substances from solid materials. ;
7. Assessment of the feasibilities to create different technological configurations upon various technological and energetic tasks by help of commercially available software packages . .

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 /	4 points	

or applications to be achieved		
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.

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.

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.

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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.

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.

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	98 scores
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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 accordance with the rules of UCTM and the law of academic promotions the materials presented by the candidate and the scientific results obtained allow to suggest senior assistant professor Chavdar Petrov Chilev, PhD, to be promoted to the position of Associate Professor (5.Technical sciences, direction 5.10.Chemical Technologies (Unit operations in Chemical and Biochemicals Technologies).

21.12.2020	Prof. Jordan Yankov Hristov, DSc	
date		signature