

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	Darina	Ivanova	Zheleva	UCTM, Department of Textile and Leather
№	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 footwear production
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The competition has been announced:

108	22.12.2020	Textile and Leather	Chemical technologies
in SG issue	date	for the needs of the Department	Faculty

The report was written by:

Prof.	PhD	Olya	Stoilova	Stoilova	Institute of Polymers, BAS
academic position	scientific degree	name	middle name	last name	workplace

1. Report for the candidate:

Assistant Professor	PhD	Darina	Ivanova	Zheleva
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.

Assistant Professor Darina Zheleva PhD, is the only candidate on the competition for filling the academic position of an Associate Professor in the Scientific specialty "Technology of footwear production", announced in SG no. 108/22.12.2020. In this report, scientific and research accomplishments of Dr. Zheleva, which do not repeat the scientific works which the candidate used for the acquisition of the educational and scientific degree "Doctor", are evaluated.

Publication activity:

In the competition, Dr. Zheleva has participated with 27 research publications, 10 of which are published in the Group C, indicator 4, one of these articles is in the Group D – indicator 7 and 16 are in the Group D – indicator 8.

According to the Group A, the candidate has PhD-thesis in the Scientific specialty "Rubber technology" (code 02.10.13), defended in 2003. The total score for this Group is **50 points**.

Ten scientific publications are referred to **Group C, indicator 4**. They were published in specialized journals that are referenced and indexed in world-famous databases of scientific information (*Scopus*). The candidate did not provide any information on the impact factor/SJR and quartile of the journals. According to the results from the *Scopus* reference database, 1 publication is published in quartile Q2, 6 of which are in Q3, 1 is in Q4, and 1 is in journal with SJR for the respective years of publication. A part of the results is presented in the book chapter published by *Nova Science Publishers*. Thus, **the score on this Group C is 430 points** against the minimum required 100.

The other 17 publications are presented to **Group D of indicators 7 and 8**. Two scientific publications are referred to indicator 7. However, one of them is not published in journal that are referenced and indexed in world-famous databases of scientific information (*Scopus*), despite of the submitted by the organizing committee letter. That is why by the **indicator 7 the candidate receives 20 points**. Indicator 8 presents 15 articles published

in non-peer-reviewed journals with scientific review or in edited collective volumes. A mistake was made in the first article – the number of the co-authors is 3, which brings 6.7 points instead of the written 10 points. Taking into account the article from indicator 7, by indicator 8 the candidate receives 215.1 points. Thus, **the publications in this group D give a total score of 235.1 points**, instead of the calculated 248.4 points, against the minimum 200 required.

The response of the results achieved (citations):

In the Group E, indicators 12 and 14 a list of 31 citations is provided, 14 of which are in the scientific publications referenced and indexed in world databases of scientific information, and the remaining 17 are citations in non-peer-reviewed journals with scientific review. However, referring in the Scopus database shows that the citations (excluding self-citations and citations by co-authors) by the indicator 12 are 15, instead of the written 14. In addition, the article in the journal with the highest quartile - Q2 has the biggest number of citations (8). **Thus, the score under group E is 184 points**, i.e. almost four times of the required minimum (50). This high number of the citations in the Textile and Leather research field are evidence for the good scientific level and the importance of the obtained results.

In the Group F, indicator 23 presents a published university book ("Polymers in textile, leather and footwear production" with ISBN 978-954-91951-4-9), which is registered in the National Register of Published Books in Bulgaria. **The points thus obtained in the group F are 40.**

The total score of all group of indicators is 939.1 (at a minimum of 400), with which the candidate not only fulfills the minimum requirements (national and of the UCTM), but also exceeds them significantly. It should be noted that this high score reflects the diverse work of Dr. Zheleva and fully satisfies the requirements for filling the academic position „Associate Professor“.

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 assessment of the research publications of Dr. Zheleva submitted for the competition have significant applied potential and relevance to the field of scientific specialty for which the competition was announced. Studies are conducted to optimize the composition of polychloroprene adhesives used in footwear technology. The effect of various additives (resins, hardener, metal oxides) to chloroprene rubber on the adhesion of adhesives is studied. Various methods for processing waste from goat hair and sheep wool as sources of keratin and its hydrolysates are proposed and optimized. Polyurethane biocomposites in the presence of collagen or bioglass have also been obtained, which stimulate the formation of hydroxyapatite and have the potential as scaffolds for tissue engineering. Much of the applied research is devoted to the study of the rheological properties of rubber, as a result of which a method for determining the optimal amount of dispersants in rubber mixtures has been proposed.

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 stated objectives of the research are realistic and are distinguished by significant applied interest. In addition to the optimization of various methods and compositions, the proposed method for determining the optimal amount of dispersants in rubber mixtures by monitoring their rheological properties is valuable from practical point of view.

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"
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Contributions must be specified. The type of results achieved must be justified.

In my opinion, the assessment of the research publications of the applicant submitted for the competition, outlines three clearly defined thematic area focused on the chloroprene rubber, rubber compounds and processing of collagen- and keratin-containing wastes. These are the candidate's contributions to the development of the scientific field in which she works.

The most important contributions can be summarized as follows:

- Optimized compositions of polychloroprene adhesives used in footwear technology are proposed, which have been established by studying the effect of various additives (resins, hardener, metal oxides) on chloroprene rubber;
- Optimized methods for processing waste from goat hair and sheep wool as sources of keratin and its hydrolysates have been proposed. These studies are important for the development of the effective environmentally friendly methods for waste recovery and have a real potential to apply in practice;
- Polyurethane/collagen and polyurethane/bioglass biocomposites are obtained, which stimulate the formation of hydroxyapatite and have the potential as scaffolds for tissue engineering;
- An important applied contribution is a proposed method for determining the optimal amount of dispersing agents in rubber compounds based on their rheological properties. This method can be used for quality assessment and solving specific technological problems in rubber industry;
- Scientific contribution have the studies focused on the effect of stearic acid and zinc stearate on rubber compounds, which are a continuation of previous studies and are summarized in a book chapter.

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	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.
From the total of 26 publications and one book chapter, Dr. Zheleva is the first author in 11 of them. It should be noted that she is the only author of 12 of the presented publications. Therefore, in over 80% of the conducted studies Dr. Jeleva has a leading role. The candidate reported the research results in national (15) and international (7) scientific forums.

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"

1.7. 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.
I recommend to Dr. Jeleva to enlarge her knowledge in the Textile and Leather scientific field, but it is extremely important for her future career development to strive to publish the results in international specialized scientific journals, which are referenced and indexed in world-famous databases with scientific information. This

will not only contribute to greater visibility of the achieved results, but will significantly increase the scientific indicators of the candidate.

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
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

Regardless of the remarks and recommendations made, the candidate's scientific indicators meet and exceed the national requirements for occupying the academic position of "Associate Professor" as defined in the Act on Development of the Academic Staff in the Republic of Bulgaria and the Regulations on its implementation, as well as those specified in the Regulations for Acquisition of Academic Degrees and Occupation of Academic Positions at UCTM. **The overall assessment of the pedagogical and scientific activities is POSITIVE and I would like to recommend the election of Assist. Prof. Darina Zheleva at the Academic position of "Associate Professor" in the Professional Field 5.10. Chemical technologies and Scientific specialty "Technology of footwear production".**

28.04.2021	The report was written by:	
date	Prof. Dr. Olya Stoilova	signature