

REPORT

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	Associate Professor	PhD	Andriana	Risk	Surleva	UchemTechnol&Metallurgy
№	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:

Analytical chemistry

The competition has been announced:

64	05.08.2025	Analytical chemistry	Chemical engineering
in SG issue	date	for the needs of the Department	Faculty

The report was written by:

Professor	PhD	Anife	Ismailova	Ahmedova	FChemPharm-Sofia Univ.
academic position	scientific degree	name	middle name	last name	workplace

1. Report for the candidate:

Associate Professor	PhD	Andriana	Risk	Surleva
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.

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	X
B) Research is relevant. Results from other authors are known for each of the topics and / or applications studied.	6 points	
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 included in the evaluation are focused on the development, optimization and verification/validation of analytical methods and their application to the study of environmental or human-induced objects. The objects for study are selected according to the needs of industrial partners or regulatory authorities. Some of the researched issues introduce a cutting-edge approach to the method of assessing the effects of human activity, which is proposed for the first time, leading to the updating of regulatory documents of the relevant authorities.

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
<p>The objectives of most of the presented studies are directly related to solving industrial problems related to the effects on the environment and waste utilization. The latter is in the direction of circular economy, which is increasingly being established as a key approach, both for limiting industrial pollution of the environment and for more complete utilization of resources. The role of analytical chemistry in each of the considered problems is the development, optimization and validation of methods for chemical and/or instrumental analysis, which can be applied both in routine work and in the provision of cutting-edge technologies for the utilization of tailings materials and obtaining geopolymer materials with a low carbon footprint and suitable for 3D-printing of construction materials. In cooperation with the Bulgarian Institute of Metrology, as well as with its French counterpart, systematic studies have been conducted to obtain up-to-date data on the state of environmental objects, including the use of bioindicators as a means of assessing the potential toxicity of the studied objects. By appropriately combining, modifying and validating different methods of chemical analysis, the set goals of obtaining data on the total content of target pollutants, and their mobility and bioavailability have been achieved. Interesting examples of adapting analytical approaches in various fields such as forensics, agriculture, control of industrial production, and improvement of technologies for recycling and valorization of waste are given. In all the studies described, the clarity with which the set problems are addressed, the detailed definition of the goals and the precise application of the methods of analytical chemistry for their resolution are impressive.</p>

1.4. 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"
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Contributions must be specified. The type of results achieved must be justified.
<p>In all four areas of the contributions and results summarized by the candidate, the applied focus of the problems considered is impressive, which is a convincing confirmation of the importance of competently conducted and applied scientific research and concerns the methods of analytical chemistry. In most cases, the developed, adapted and improved analysis methods are applicable to other objects of similar origin, and to resolve issues related to the assessment of the environmental risk of human activity, such as agriculture, industry, etc. In the field of developing analytical protocols for the utilization of industrial waste, her work leads to the development of geopolymers with low CO₂ emissions as alternatives to traditional construction materials. Original data on the mobility and bioavailability of heavy metals in geopolymers have been obtained, providing information on their ecological footprint. Partnerships with international institutions, such as the University of Malaysia Perlis and the Technical University "Gheorghe Asaci" in Iași, Romania, expand the scope and impact of her work. Also, Assoc. Prof. Dr. Surleva focuses on the development and validation of methods for the analysis of environmental samples, providing critical data for the assessment of environmental risks. Innovative approaches combining chemical analysis and biological tests have been proposed and used to assess the bioavailability and toxicity of pollutants. Techniques such as ion chromatography and mass spectrometry have been optimized and validated for the analysis of environmental samples, including water and soil. Here too, the research has been conducted in collaboration with international teams, providing valuable information on the environmental impact of mining activities and soil remediation strategies. Procedures for determining the available forms of potassium, phosphorus and sulfur in Bulgarian agricultural soils have been optimized. Comparative analyses of different extraction methods have led to the development of mathematical models for data transfer between methods. This research supports sustainable agricultural practices by providing reliable methods for the analysis of nutrients in soils.</p> <p>The scientific contributions of Assoc. Prof. Dr. Eng. Andriana Risk Surleva are of significant scientific and practical importance. Her work addresses pressing environmental and industrial challenges, promotes sustainable practices and improves analytical methodologies. Through her collaborative efforts and innovative approaches, she has established herself as a leading figure in the field of analytical chemistry with broad contributions to science, industry and sustainable environmental development.</p>

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

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.

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
<p>Assoc. Prof. Dr. Eng. Andriana Risk Surleva has made significant contributions to the field of analytical chemistry, focusing on the development, optimization and validation of methods for chemical analysis of industrial waste, environmental samples, agricultural soils and artifacts of human activity. Her research is essential for addressing critical environmental challenges, promoting sustainable technologies and improving analytical methodologies. Some of her research contributes to the development of sustainable technologies for waste recycling and the production of environmentally friendly construction materials. Through the development and validation of analytical methods, she has also contributed to forensics and forensic medicine, as well as to industrial production and sustainable waste management, while promoting green analytical chemistry practices, such as the development of a cost-effective FTIR-ATR spectroscopic method for monitoring food safety.</p> <p>Her extensive teaching and supervisory activities, both with undergraduates and PhD students from and outside Bulgaria, are documented by four doctoral dissertations defended under her supervision and a published textbook on analytical chemistry in French. Her extensive international cooperation in various research topics, as well as in the educational field, is also impressive. All this confirms my personal impressions of the candidate as a conscientious and responsible colleague and researcher, whose expertise and cooperativeness are highly valued among the academic community.</p> <p>All this motivates my convinced conclusion for awarding the academic position of professor to Assoc. Prof. Dr. Eng. Andriana Risk Surleva.</p>

3/12/2025	The report was written by:	
date		signature