

OPINION



on a competition for the academic position "**Professor**"
from a field of higher education **5. Technical sciences**,
professional direction **5.5. Transport, Shipping and Aviation**,
scientific specialty "Transport and storage of oil, gas and solid minerals",
announced in State newspaper No. 43/17.05.24 for the needs of the department "Engineering and
Technologies in Transport and Mechanical Engineering"
at the Faculty of Engineering, University "Prof. Dr. A. Zlatarov"
with candidate: Associate Professor Yordanka Tsankova Tasheva, Ph.D

Member of the scientific jury: Prof. Svetla Dimitrova Stoilova, DSc
Technical University - Sofia,

according to Order No. RD - 236/ 15.07.24 of the Rector of the University "prof. Dr. A. Zlatarov"

1. General characteristics of the candidate's research and applied scientific activity

The following works are submitted for participation in the competition, apart from the publications submitted for receiving the educational and scientific degree "doctor" and the academic position "associate professor": - 44 scientific publications, - 1 monograph, - 1 textbook and 2 manuals.

The 44 scientific publications presented in the competition, according to the number of co-authors, are:

- Self-contained - 11 items (Г7.1; Г7.2; Г7.3; Г7.4; Г7.6; Г7.7; Г7.8; Г7.9; Г8.13; Г8.14; Г8.15);
- In a collective - 33 pieces. The participation of the author in 1st place in the collective is in 11 publications - (B4.1; B4.2; B4.6; Г8.5; Г8.7; Г8.8; Г8.10; Г8.16; Г8.17; Г8.18; Г8.19).

Assoc. prof. Tasheva is the author of a monographic work in co-authorship with another scientist (Y. Tasheva, A. Dimitrov, Ecological use of natural and synthetic fuels and their waste, Libra Scorp, Burgas, 2024, 296 pages, ISBN 978-619 -273-031-4). The volume of the scientific work is 296 pages, which shows that the requirements for a monographic work with more co-authors have been met (100 pages according to LDASRB).

The scientific publications are in specialized magazines, in periodical academic publications and in collections of scientific works at university conferences in the country and abroad. The presented documents show that Assoc. prof. Tasheva participated in a number of scientific forums in the country and abroad. Some of the scientific works have been published in the following international and national journals, publishing houses and conference proceedings: Petroleum&Coal, Journal of Balkan Tribological Association; Oxidation Communications, Chemistry, Journal of environmental protection and ecology, Industrial technologies; Yearbook of the University "Prof. Dr. A. Zlatarov" - Burgas, Scientific works of the University of Ruse.

The research activity of Assoc. prof. Tasheva is directed in the following directions: - research of the influence of petroleum fuels on fuel consumption and the indicators of internal combustion engines; - research of technologies to improve the characteristics of petroleum fuels; - study of environmental parameters of fuels

In the report submitted by the candidate regarding the points for fulfilling the requirements of the law on the development of the academic staff in the Republic of Bulgaria (LDASRB) and the rules of the University "Prof. Dr. A. Zlatarov" I noticed inaccuracies as follows:

- About E19. Participation in international scientific and educational projects.

The participation in national educational projects is noted in the candidate's reference as international educational projects, which have a different evaluation in the number of points: - BG051PO001-4.3.04-0015 "Development of electronic forms of distance learning in the system of University "Prof. Dr. Asen Zlatarov "-c. Burgas "-2012-2013 (Ministry of Education, Youth and Science; Operational Program "Development of Human Resources"; - BG05M2OP001-2.16-0013 "Modernization, Digitalization and Internationalization of Education at Chemical Technological and

Metallurgical University". Operational Program "Science and education for smart growth", under the procedure "Modernization of higher education", 2021-2023). The candidate indicated 60 points, but according to the above, the points are 20.

- About E20. Management of national scientific and educational projects.

The participation in national projects is noted as a guide to national projects: Project KPI-06-H27/12, from 2018 SRF, "Modeling and development of a complex system for the selection of transportation technology in a transport network"; (2018-2022), project manager: Prof. Eng. S. Stoilova – TU-Sofia; Project KPI-06-PN77/8 of 2023, SRF, "Modeling and development of a complex system for ecological and energy efficiency of transportation in urban conditions"; (2023-2026), project manager: Prof. S. Stoilova DSc, TU-Sofia. Assoc. prof. Tasheva is not the head of these projects. She is a member of the collective and she is the head of the team of the partner organization University "prof. Dr. A. Zlatarov" - Burgas, with TU-Sofia being the beneficiary.

The project No. Y-55/2023 "Analysis, research and expert assessment of products of petroleum and non-petroleum origin" indicated as national in the applicant's reference is an Internal Project NIS University "prof. Dr. A. Zlatarov" - Burgas.

The candidate scored 60 points for E20, but according to the above, the points are 0.

The candidate should form indicator E18, where the participation in 4 national scientific and educational projects, i.e. 40 points.

Taking into account the inaccuracies indicated, the applicant's points are as follows:

Group	Content	Minimum number of points required by LDASRB and the Rules of University "Prof. Dr. A. Zlatarov"	Points of the candidate
A	Indicator 1	50	50
	1. Dissertation work for awarding the educational and scientific degree "doctor"	50	50
B	Indicator 2	-	-
B	Indicators 3 и 4	200	302
	3. Monograph, ISBN 978-619-273-031-4	100	100
	4. Habilitation work - scientific publications (not less than 10) in publications that are referenced and indexed in world-famous databases with scientific information – 10 publications	60/n for every publication	202
Г	Sum of indicators from 5 to 11	500	568.37
	7. Scientific publication in publications that are referenced and indexed in world-renowned databases of scientific information – 10 publications	40/n or prorated based on a contribution protocol	353.33
	8. Scientific publication in non-refereed peer-reviewed journals or in edited collective volumes – 24 publications	20/n or prorated based on a contribution protocol	215.04
Д	Sum of indicators from 12 to 15	200	250
	12. Citations or reviews in scientific publications referenced and indexed in world-renowned databases of scientific information or in monographs and collective volumes – 25 citations	10	250
E	Sum of indicators from 16 up to end	200	180
	17. Supervision of a successfully defended doctoral student – 2 doctoral students' co-supervision	40/n	60
	18. Participation in a national scientific or educational project – 4 projects	10	40
	19. Participation in an international scientific or educational project – 1 project	20	20
	E.20. Management of a national scientific or educational project	20	0
	23. Published university textbook or textbook that is used in the school network – 1 self-textbook	40/n	40
	24. A published university teaching aid or teaching aid that is used on the school network - 2 teaching aid co-authored	20/n	20
	TOTAL	1150	1350.37

2. Evaluation of the pedagogical preparation and activity of the candidate

In her teaching activity, Assoc. prof. Tasheva has conducted lectures and exercises in some of the following disciplines: Operating materials and characteristics of fuels and oils; Operating materials and ecology; Technologies for reducing harmful emissions from TT; Oil and Gas Technology; Oil and Gas Chemistry and Technology; Petroleum chemistry; Commodity science; Medical economics; Enterprise economics; Organic chemical technologies; Small Business Management; Production technological control; Chemical processing; Technology of tax warehouses; Oil and gas construction.

Assoc. prof. Tasheva was the head of 27 graduates - bachelors and masters. She participated in the preparation of 24 study programs for the disciplines she teaches. She participated in the construction of various laboratory stands.

Assoc. prof. Tasheva is the supervisor of two successfully defended doctoral students. Doctoral students are supervised by another co-supervisor, with one doctoral student from another scientific field (4.2).

3. Basic scientific and applied scientific contributions

Assoc. prof. Tasheva has presented an author's reference for the contributions. After a detailed acquaintance with the scientific works, as well as with the presented author reference for scientific, scientific-applied and applied contributions, I can summarize the contributions as follows:

- **SCIENTIFIC CONTRIBUTIONS** - refer to the group: formulation or justification of a new scientific field or problem; formulating or substantiating a new theory or hypothesis:

1. The possibilities for the utilization of an alternative raw material - synthetic oil, both in terms of environmental protection and in terms of obtaining additional amounts of energy resources and fuels, were investigated (monograph B3)

2. It has been proven that the processes of extraction, adsorption and oxidation of various model mixtures, gasoline and middle distillate fractions are thermodynamically stable, (B.4.9., Г.7.1., Г.7.9., Г.8.10., Г.8.14., Г.8.15, Г.8.16, Г.8.17, Г.8.19, Г.8.24)

3. The thermodynamic and kinetic parameters of different systems are determined - gasoline, middle distillate fraction (diesel fuel, gas oil), polar solvent, or adsorbent or oxidizer. From the obtained results for Gibbs free energy, enthalpy and entropy, it is proved that the dissolution process is irreversible and spontaneous, (Г.7.3., Г.7.4., Г.7.8., Г.8.10., Г.8.18).

4. It has been proven that the addition of bioethanol to the base petroleum gasolines changes the distillation characteristics of the base gasolines, (Г.8.10).

- **SCIENTIFIC AND APPLIED CONTRIBUTIONS** - refer to the group: proving with new means essential new aspects of already existing scientific fields, problems, theories, hypotheses; creation of new classifications, methods, constructions, technologies; obtaining corroborating facts:

1. Innovative methods and installations for the processing of solid fuels, oil products and their waste, as well as the release of minimal amounts of harmful emissions (CO₂), which will lead to environmental protection, have been researched (monograph B3).

2. Gasoline-ethanol mixtures containing bioethanol of two base petroleum gasolines having different component and hydrocarbon composition were investigated. It has been established that the base petroleum gasolines meet all the requirements of BDS EN 228 and the Ordinance on the requirements for the quality of liquid fuels, the conditions, order and method of their control, (Г.7.2., Г.7.10., Г.8.1., Г.8.2., Г.8.4., Г.8.7., Г.8.8., Г.8.10).

3. A methodology for studying the influence of fuel consumption for Opel Movano and Ford Transit trucks has been compiled. The influence of the indicators cetane index, density, kinematic viscosity and content of polycyclic arenes on the combined consumption of fuel at a petrol station was investigated. (Г.7.6.).

4. A methodology for researching the influence of fuel consumption for a MAZDA model car was created and the influence of the indicators cetane index, density, kinematic viscosity and content of polycyclic arenes on the combined fuel consumption at a petrol station was studied (Г.7.7).

- **APPLIED CONTRIBUTIONS** – a specific solution to a narrowly formulated task from a given scientific field with immediate practical applicability.

All presented scientific works contain applied contributions, the result of specific research.

4. Significance of contributions for science and practice

In general, the contributions in the materials submitted to the competition are related to the expansion of scientific knowledge, establishing dependencies, conclusions and recommendations in the field of transport, ecology and fuels.

The evaluation of the candidate's presentation is the citations of the works in the scientific literature. A list of 25 citations indexed in global databases is presented.

The candidate's teaching activity is realized in numerous academic disciplines at the University "Prof. Dr. A. Zlatarov". Assoc. prof. Tasheva is the co-supervisor of 2 successfully defended doctoral students. She has participated in national and international research projects.

The quantitative indicators for occupying the academic position "professor" at the University "Prof. Dr. A. Zlatarov", as well as the minimum national requirements are observed.

5. Critical notes and recommendations

Inaccuracies were admitted in a reference by the candidate regarding the points for fulfilling the requirements of the LDASRB and the rules of the University "Prof. Dr. A. Zlatarov".

In the materials submitted for the competition, there are no articles in journals with an Impact Factor of Web of Science, as well as publications in quartile Q1 and Q2 of Scopus.

Only one published textbook is presented, which is insufficient, considering the large number of academic disciplines on which Assoc. prof. Tasheva conducts lecture courses.

6. Personal impressions

I know Assoc. prof. Tasheva from our joint work on scientific research projects. She participated in two national projects funded by the National Research Institute of the Ministry of Education and Science, in which University "Prof. Dr. A. Zlatarov" is a partner organization of TU - Sofia, of which I am the head (No. KP-06-H27/12 dated 11.12.2018 and KP and No. KII-06-H77/11 dated 14.12.2023)

The work on the projects financed by the Scientific Research Institute, in which we have worked together and continue to work, give me the reason to confirm that Assoc. prof. Tasheva is a well-built teacher and researcher who has a good command of the necessary research apparatus for conducting scientific research. She is a disciplined, responsive and responsible person, she treats colleagues and students with respect.

Over the years, Assoc. prof. Tasheva has acquired the necessary scientific and professional experience to hold the academic position of "professor". The presented works, citations and participation in projects correspond to the requirements of the LDASRB, the Regulations for its implementation and the requirements of the University "Prof. Dr. A. Zlatarov" for occupying the academic position of "professor".

CONCLUSION:

Bearing in mind the above, I propose that Assoc. prof. Yordanka Tsankova Tasheva, PhD, be elected "PROFESSOR" in the field of higher education 5. Technical sciences, professional direction 5.5. Transport, shipping and aviation, scientific specialty "Transportation and storage of oil, gas and solid minerals".

Date: 24.09.2024

Member of the scientific jury: Prof. Svetla Dimitrova Stoilova, DSc