professor" in professional area 4.2 Chemical sciences. The results from the research by Assist.prof. Donika Ivanova, PhD, have instigated a serious international reaction and acknowledgement, which is evident both from the great number of citations of her publications in international specialized scientific journals and the high citability index in Scopus ***h-index*** = **11**. The excellent citation rate of Assist.prof. Ivanova's publications proves her recognition among the scientific community.

The total number of points by groups of indicators A, C, D and E of Assist.prof. dpl.eng. Donika Georgieva Ivanova, PhD, is **1152 points**, 752 points above the national minimum required points (400 points), according to Table 1 of the Law on development of the academic staff in the Republic of Bulgaria and the Rules for development of the academic staff at Trakia University (Annex 8.3), for holding the academic position "Associate professor" in professional area 4.2. Chemical sciences.

IV. Characteristics and significance of the research work

For participation in the competition for holding the academic position "Associate professor" in professional area 4.2. Chemical sciences, Assist.prof. Ivanova, PhD, has submitted in full text in English a total of 24 scientific publications in co-authorship (papers No.No. C1-C10; No.No. D1-D14), but a reference in Scopus reveals that they are 31. I do accept for review only the 24 scientific papers submitted for the competition by Assist.prof. Ivanova. All papers are from the professional area announced for the competition 4.2 Chemical sciences, scientific specialty „Bioorganic chemistry, chemistry of natural and physiologically active substances". Twenty-three of the publications are in journals with impact factor (papers No.No. C1-C7, C9, C10, No. D1-D14) and one - with SJR (paper No. C8). Ten of the 24 publications submitted for the competition are equal to a major habilitation work – a monograph (group C, item 4, papers No.No. C1 - C10) and 14 are the scientific publications outside the habilitation work (group D, item 7, paper No.No. D1- D14). Assistant professor Ivanova is a leading author in 7 of the publications (papers No.No. C5, C6, C7, C8, C10, D2, D4), in 12 she is a second author, in 3 – a third one, in 2 – a fourth one. I hereby give high valuation of the publication work of Assist.prof. D. Ivanova, PhD, which is characterized by very high scientometric indicators.

From the reference issued by the Central University Library at Trakia University it is evident that all publications are in journals with Impact factor, Impact rank or SJR. The total IF of the publications submitted in the competition by Assist.prof. Donika Ivanova, PhD, is **63,469** (without the IF values of the publications relating to the dissertation paper for awarding PhD educational and scientific degree), while the **individual i.f.=17,589**.

Assistant professor Ivanova, PhD, has taken part in 10 international conferences abroad and in 18 national and international conferences in Bulgaria. Assistant professor Ivanova has 14 habilitated co-authors, of which 7 professors and 7 associate professors, which whom they develop various topics and publish the results obtained from their joint scientific work in scientific journals referenced and indexed in world-renowned databases with scientific information.

Assistant professor D. Ivanova's research work is expressed in her active work on national programmes and scientific projects, she has participated in 12 and has been the supervisor of 2 university scientific projects. She has reviewed 10 scientific articles in journals included in Web of Science/Scopus, for which she has submitted the relevant evidence.

Assist.prof. Ivanova's scientific interests are in the area of bioorganic chemistry, chemistry of natural and physiologically active substances. The presented scientific papers are at a high level, which is confirmed by the prestigious scientific awards given to Assist.prof. Donika Ivanova, PhD. An award and a certificate for a significant contribution in the publication activity and the rating of Trakia University for 2020; Certificate of excellence and award for the most outstanding scientist-assistant professor at the Faculty of Veterinary Medicine at

Trakia Uiversity in 2020; Award and certificate for contribution in the publication activity and the rating of Trakia University in 2018; Award and certificate for active participation in the publication activity of Trakia University for 2017 with an awarded publication: Ivanova D., Z. Zhelev, I. Aoki, R. Bakalova, and T. Higashi, 2016. Overproduction of reactive oxygen species – obligatory or not for induction of apoptosis by anticancer drugs? *Chin. J. Cancer Res.*, 28(4), 383-396.(publication No.B10, from the submitted list, IF_{2020}=3,00; SJR=0,939; Q2).

V. Evaluation of the Scientific contributions

Assist.prof. Ivanova's scientific interests are in the sphere of bioorganic chemistry, chemistry of natural and physiologically active substances and theirn application in medicine - human and veterinary. The very detailed experimental material has allowed Assist.prof. Ivanova to make a number of original scientific, scientific-applied contributions and contributions of theoretical-affirmative nature. These can be arbitrarily classified in the following areas: *establishing synergic cytotoxic effect after combined application of redox-modulators (natural and synthetic) with chemotherapeutics (conventional and new generation)*, on leukemic and normal lymphocytes; effect of the combinations of natural and synthetic redox-modulators and selected chemotherapeutics on the production of reactive oxygen species (ROS) and end (protein carbonyl) products of oxidative stress; clarifying the potential mechanisms underlying the proven antitumor activity; application of nanotechnologies in modern biomedicine; use of ASO-fluorescent and cation dyes as markers in biomedicine.

I. *Area relating to establishing synergic cytotoxic effect after combined application of redox-modulators (natural and synthetic) with chemotherapeutics (conventional and new generation) on leukemic lymphocytes*

Contributions of original nature

- For the first time expressed synergic cytotoxic effect has been established of combinations between redox-modulators 2-desoxi-D-glucose (publication No. C1); 6-aminonicotinamid (publication No. C2); docosahexaenoic acid (natural) (publication No. C3); melatonin (publication No. C4); the redox-system vitamin C and vitamin K3 (publication No. C5) with chemotherapeutics; combining natural drug against malaria – *Artemisinin* – with the redox-system vitamin C/vitamin K3 (publication No. C8)
- For the first time synergic cytotoxicity has been proven of the combination of resveratrol with *Everolimus* and *Barasertib*, specific for cells isolated from patients with acute lymphoblast leukemia (publication No. C6)
- For the first time additive or antagonistic effect has been proven on the proliferation and vitality of leukemic lymphocytes after the combined application of the chemotherapeutics *Barasertib, Bortezomib, Lonafarnib* with the redox-modulator α-tocopheryl succinate. The most pronounced synergic effect has been proven in combination of α-tocopheryl succinate with the chemotherapeutic *Barasestib*. (publication No. C7)
- For the first time strong cytotoxic effect has ben found on leukemic lymphocytes of the natural anti-malarian drug *Artemisin* in combination with the redox-system vitamin C/vitamin K (publication No. C8).

II. *Area relating to a study of the ROS production as a process accompanying apoptosis and cytotoxicity as well as analysis of the levels of end (protein carbonyl) products of oxidative stress after treatment of leukemic lymphocytes with combinations between selected redox-modulators and new generation of chemotherapeutics*

1. ***Original contributions*** relating to combinations of redox-modulators and new generation of chemotherapeutics inducing high level of apoptosis and cytotoxicity, which is not accompanied by increasing the ROS levels in leukemic lymphocytes (**ROS-independent apoptosis**):

- In the combinations 2-desoxi-D-glucose and *Everolimus*, as well as 2-desoxi-D-glucose and *Beresertib* on leukemic lymphocytes cytotoxicity and induced apoptosis are reported, which are not accompanied by increased ROS levels (publication No. C1).
- For the first time induction of apoptosis is reported in leukemic lymphocytes without being accompanied by increased ROS levels and end products of oxidative stress in the combination of 6-aminonicotinamid with the new generation chemotherapeutic *Everolimus* (publication No. C2).
- Significant induction of apoptosis without being accompanied by increased ROS levels and end products of oxidative stress has been found in the combination of melatonin as redox-modulator and the chemotherapeutic *Everolimus* applied on leukemic lymphocytes (publication No. C4).
- For the first time a systematic comparative study has been made in relation to ROS production as a process accompanying apoptosis and cytotoxicity as well as an analysis of the levels of end (protein-carbonyl) products of oxidative stress after treatment with leukemic lymphocytes with combinations between various redox-modulators and new generation of chemotherapeutics. (publications No. C1, No. C2, No. C3, No. C4, No. C5, No. C6 and No. C7).
- For the first time combinations have been found between redox-modulators and chemotherapeutics inducing cytotoxicity in leukemic lymphocytes, which is not accompanied by cytotoxicity, induction of apoptosis or change in the ROS levels on normal lymphocytes after their application. (publications No. No. C1, C2, C3, C4, C6 and C10).

2. ***Original contributions*** relating to combinations of redox-modulators and a new generation of chemotherapeutics inducing high level of apoptosis and cytotoxicity accompanied by increasing the ROS levels in leukemic lymphocytes (**ROS-dependent apoptosis**)

- After combined application of docosahexaenoic acid; vitamin C and vitamin K3; resveratrol; α-tocopheryl succinate as redox-modulators and the chemotherapeutics *Barasertib* or *Everolimus* induction of apoptosis has been proven on leukemic lymphocytes, which is accompanied by reduction of the ROS levels and end (protein carbonyl) products of oxidative stress. (publications No.No. C3, C5, C6, C7)

III. *Area relating to clarifying the potential mechanisms underlying the proven antitumor activity* redox systems

Original contributions

- The potential mechanisms underlying the proven anti-tumor activity of the redox-system *Menadione* (vitamin K3)/ ascorbic acid has been clarified (publications No. No. D2, C5, D6).
- For the first time its has been established experimentally that the redox-system of vitamin K3/vitamin C has strong specific and synergic effect, inhibits the growth of cancer cells without having an unfavourable effect on the vitality of normal cells (publications No. C5 and No. D6). For the first time the *in vivo/in vitro* effect of this redox-system on the immune respeonse has been proven by establishing reduced expression of inhibitor ligand PD-L1. (publication No. D6), as well as that low concentrations of that system potentiate the destruction of cancer cells (publication No. D10).

IV. *Area relating to a research of natural and newly synthesized radioprotectors*

Original contributions

- For the first time *in vivo* studies have been carried out and a comparative analysis reported of the radiation-protective potential between the natural flavonoid silymarin and newly synthesized derivatives of the anthranilic and styryl chinolonic acids. It has been found that

the type of solvent has a significant effect on the radiation-protective activity of silymarin. (Publication No. D13).

V. Area concerning extraction methods and the application of bioflavonoids in biomedicine as compounds with antioxidants and antimicrobial properties.

Contributions of a theoretical affirmative nature

- It has been confirmed that the efficiency and selectivity of extraction of plant-based bioflavonoids depends largely on the extraction method, type and concentration of the extracting agent, temperature and solubility of biosubstances. (Publication No. D5)

Contributions of an original nature

- For the first time it has been proven that UVB-radiation has no effect on the level of radical-radical-trapping ability of *S. virgaurea L.* extracts. A well-expressed general antioxidant potential, as well as reducing activity against superoxide anion radicals, hydroxide radicals, and nitrogen oxide radicals formed in a simulated *in vitro* environment has been found. (publication No. D7)
- Zero- and first-order UV/VIS spectrophotometric and FT-IR spectroscopic methods have been developed for the quantification of catechin in *Acacia catechu* extract. (publication No. D8)

VI. Area concerning the application of nanotechnologies in modern biomedicine.

Affirmative contributions of an applied nature

- The application of the natural biopolymer chitosan in developing micro-/nano-carriers for providing biologically active substances and drugs has been confirmed. (publication No. D3) The antioxidant capacity of the biopolymer chitosan as well as of its derivatives has been confirmed. (publication No. D4)
- It has been confirmed that the use of integrative and multidisciplinary *in silico*, *in vitro* and *in vivo* research approaches and consequently clinical studies optimal therapeutic effect is achieved. (Publication No. D9).
- The opportunities to use ASO-fluorescent and cationic dyes as markers in biomedicine has been proven due to their specific physicochemical characteristics, intermolecular interactions and sorption behaviour. (publication No. D14)

VII. Contributions of an applied nature:

- Combinations (chemotherapeutic + redox-modulator) have ben found with clerly expressed synergic cytotoxic effect in relation to leukemic lymphocytes without the vitality of normal lymphocytes (publication No.No. C1- C6 and No. C10).
- A method has been developed for direct visualization and analysis of cell redox-status by using the redox-sensitive radical TEMPO and nitroxide-enhanced MRI. Guidelines are given for the development of MRI methodological approaches to distinguish cancerous from non-cancerous cells based on differences in their redox-status, in which oxygen-centered aminoxyl radicals are used as redox-sensors in isolated cell cultures (publication No. C9 and No. D1).
- *Solidago vulgarea L.* plant extracts against the pathogenic strains of *Staphylococcus aureus* and *Pseudomonas aeruginosa* can be used as alternative natural food preservatives, in order to limit the use of toxic synthetic antimicrobial agents, due to their established antioxidant and antibacterial potential (publication No. D12).

- For the first time, the encapsulation capacity and, accordingly, the sorption capacity of alkalized clinoptiolite "clinosorbent-5" (CLS-5) have been evaluated as a carrier of the catechin-rich extract of *Acacia catechu* and the efficiency of the bioflavanol/clinoptilolite system has been evaluated. The results obtained have an applied nature, as they provide a suitable design for the development of innovative catechin-CLS-5 microcarrier systems that can find application in both veterinary and human medicine to provide sustained release of bioflavonoids (publication No. D11).

It is obvious that Assist.prof. Ivanova's scientific research is related to solving socially significant problems related to human and animal health. In the process of experimental work, in a team with prominent scientists, Assist.prof. Ivanova helps to find answers to important questions needed for the development of selective therapy for cancer patients. Results have been obtained that allow looking for opportunities to reduce the dose of some of the chemotherapeutics widely used in practice for the treatment of oncological diseases, while ensuring the coverage of serum concentrations and preserving their chemotherapeutic effect. The significance of the contributions is supported by the fact that the scientific publications for the competition have been cited 309 times by independent authors, in prestigious scientific publications. On the other hand, her active teaching activity shows an extremely strong and fruitful combination of research work with its application in teaching - familiarizing students with modern achievements in bioorganic chemistry and their application in medicine - veterinary and human.

The scientific and scientific applied contributions, the significant publication and teaching work, participations in scientific forums and scientific projects of Assist.prof. dpl.eng. Donika Georgieva Ivanova, PhD, allow me to make the conclusion that she complies with all requirements pursuant to the Rules for development of the academic staff in the Republic of Bulgaria and the Rules for development of the academic staff at Trakia University (Annex 8.3) for holding the academic position „Associate professor" in professional area 4.2. Chemical sciences.

In conclusion I can say that the strategy: science to the benefit of medicine – human and veterinary is well defined in the scientific research of Assist.prof. Ivanova, PhD.

B) Documents of Associate professor dpl.eng. Dilyana Todorova Zvezdova, PhD

I. Brief biographical data and career development of the candidate

The candidate for holding the academic position „Associate professor" Dilyana Todorova Zvedova was born in 1970 in the town of Razgrad, where in the period 1985-1989 she completed the Secondary technical School in Biotechnology "Marie Curie" majoring in Biotechnological synthesis. In 1994 she completed higher education at University "Prof. Dr. Asen Zlatarov", Burgas, and acquired Master's educational and qualification degree chemical engineer, specialty „Technology of water", and in 1994-1998 a second Master's degree, specialty "Biotechnologies", engineer-biotechnologist at the same university. In the period 1997-1998 she got a professional qualification Teacher, University "Prof. Dr. Asen Zlatarov", Burgas, specialty "Pedagogy" -Methods of training in chemistry and chemical technology subjects. After completion of her higher education dpl.eng. Zvezdova worked consequently as: inspector Fire Safety Burgas Municipality (1996-1997), chemist-technician at University "Prof. Dr. Asen Zlatarov", Burgas, Faculty of Technical Sciences, Department of Organic Chemical technologies" (2003-2008). Her scientific career started in the period 2000-2003, when she was a PhD student at the Department of Organic Chemistry at University "Prof. Dr. Asen Zlatarov", Burgas, Faculty of Natural Sciences. In 2005-2006 she was doing a PhD specialization in Gent University, Gent, Belgium, Faculty of Bioscience Engineering, Department of Biochemical and

Microbial Technology: Industrial microbiology and green chemistry and Organic chemistry. After successfully defended dissertation paper in 2008 dpl.eng. Zvezdova acquired PhD educational and scientific degree in the scientific specialty "Organic chemistry". In 2005-2006 she was a Scientific collaborator. In 2008 dpl.eng. Zvezdova was elected an assistant professor at University "Prof. Dr. Asen Zlatarov", Burgas, faculty of Natural Sciences, Department of Organic Chemistry. In the period 2009-2016 she was a chief assistant professor at the Departments of Organic chemistry and Physico-chemistry and organic chemistry. Since 2016 till now dpl.eng. Zvezdova, PhD, has been an Associate professor in professional area 7.4. "Public health", scientific specialty "Biochemistry" at the faculty of Public and Healthcare at University "Prof. Dr. Asen Zlatarov", Burgas. From 2017 to 2019 she was a deputy director of Medical College, University "Prof. Dr. Asen Zlatarov", Burgas. Since 2017 till now Assoc.prof. Zvezdova is a member of the Faculty Board of the Faculty of Public Health and Healthcare, Medical Faculty, University "Prof. Dr. Asen Zlatarov" She has taken part in a number of scientific forums and in 2011 and 2019 she was awarded a Crystal prize "The Best Paper" by University of Ruse „Angel Kanchev", Ruse, Bulgaria. Assoc.prof. Zvezdova's research work finds expression in her active work on scientific projects: she has been a participator in over 20 and has been a leader of 5 scientific projects at the Scientific Research Fund at the Ministry of Education, Youth and Science. She has accumulated cast theoretical knowledge and skills and competences related to the use of modern instrumental methods of analysis. The scientific interests of Assoc. prof. Dilyana Zvezdova, PhD, are in the following areas: *Biochemistry*: obtaining, evaluation of the chemical structure and properties of chitin and chitosan and opportunities for their use in pharmacy. *Organic chemistry*: synthesis, structure, reactivity, toxicology, biological activity and quantum chemical characteristics of functional saturated and non-saturated p-replaced phenyl sulfones and their biological effect on some soil microorganisms, culture plants, weed plants and pathogenic microorganisms. *Technological area*: utilization of waste products from the fishing industry for obtaining biopolymer materials chitin and chitosan; obtaining super pure deionized water from natural and waste water; decolorization of waste water from the textile and paper industry; creating new structural technical and technological water treatment facilities.

Associate professor dpl.eng. Dilyana Zvezdova, PhD, has skills for work with computer has very good command of the software (OS Windows , MS Office, Chem Win, Chem Draw, Hyper Chem, Adobe Photoshop, specialized packages for kinetic analysis). She has completed and English language course and has level "b2" in written and spoken English and has command of Russian as well.

Assoc.prof. dpl.eng. Dilyana Todorova Zvezdiova, PhD, is a meruber of the Uniuon of Scientists in Bulgaria; a member of the Union of Chemists in Bulgaria.

II. Teaching work

The teaching work of Zvezdova, PhD, started in 2008 when she occupied the position of an assistant professor at University "Prof. Dr. Asen Zlatarov", Burgas, Faculty of natural Sciences, Department of Organic Chemistry and was teaching organic chemistry to the undergraduate students. Since 2016 until now Assoc.prof. Zvezdova, PhD, has been teaching the subjects: organic chemistry, biochemistry, clinical laboratory, biochemistry and immunology to students from the Medical college and the Medical Faculty, University "Prof. Dr. Asen Zlatarov", Burgas.

III. Evaluation for compliance with the minimum national scientometric indicators for acquisition of the academic position "Associate professor", in area 4.2. Chemical sciences

Associate professor dpl.eng. Dilyana Todorova Zvezdova, PhD, submits documents and refere3nces proving the following distribution of her scientific production by groups of indicators, according to Table 1 of the Law on development of the academic staff in the

Republic of Bulgaria and the Rules for development of the academic staff at Trakia University (Annex 8.3):

In indicator A Assoc.prof. Zvezdova has 50 points since she has defended a PhD thesis, which is not on the specialty of the announced competition, but is in the scientific area 4.2. Chemical sciences, on: "Synthesis, structure and reactivity of sulphur containing organic compounds", specialty 01.05.03 "Organic chemistry", Diploma No. 32255/14 Apr 2008. She complies with the requirements of indicator A - **50 points.**

In group of indicators C Assoc.prof. Zvezdova, PhD, submits 2 monographs and 32 publications. The monographs submitted by Assoc.prof. Zvezdova are:

1) Zvezdova, D., 2020. Obtaining and characteristics of biopolymer and synthetic polymer products. *"Libra Scorp"* Publishing House. ISBN 978-954-471-692-9, 422 p.
2) Zvezdova, D., A. Zvezdov, 2014. Organic biopolymer and polymer sorption materials, structural characteristics and their significance in various engineering technologies. *"Libra Scorp"* Publishing House, ISBN 978-954-471-230-3, 284 p.

According to the Law on development of the academic staff in the Republic of Bulgaria and the Rules for development of the academic staff at Trakia University (Annex 8.3), for compliance with the minimum national requirements for the academic position "Associate professor" in professional area 4.2 Chemical sciences, in group of indicators C, one monograph (item 3), accepted as main habilitation work, is required, or 10 scientific publications (item 4), equal to main habilitation work, in journals referenced and indexed in world-renowned databases (Scopus/Web of Science) with scientific information. The monograph "Obtaining and characteristics of biopolymer and synthetic polymer products" deals mainly with bioorganic materials (chitin and chitosan) in several basic biotechnological, pharmacological, biomedical aspects. Chitosan being cheap, non-toxic and biocompatible with the environment can be an alternative to replace the used conventional sorbents. Experimental results regarding structural properties and technological applicability of nanostructured biopolymer and synthetic polymer products are discussed. This monograph corresponds to the scientific specialty of the announced competition for "Associate professor" and I accept it as main habilitation thesis, which gives Assoc.prof. Zvezdova, PhD, 100 points. The second monograph "Organic biopolymer and polymer sorption materials, structural characteristics and their significance in various engineering technologies" was co-authored by A. Zvezdov and was published in 2014 (No. 1 in the list of publications), for this reason I do not accept it as main habilitation thesis. In the list of publications of Assoc.prof. D. Zvezdova, PhD, under No. 44 there is a third monograph "Zvezdova, D.T., 2021. Applications of biopolymer and synthetic polymer sorbents. *"Libra Scorp"* Publishing House, ISBN 978-954-471-694-3, 343 p.", which is not presented in group of indicators C and is not subject to review.

The scientific articles submitted by Assoc.pro. Zvezdova, PhD in froup of indicators C, item 4 are 32, but 5 (No.No. 1, 2, 28, 29, 30) of them I do accept for review since only these have been published in scientific journals referenced and indexed in world-renowned databases with scientific information and have the relevant quartiles Q (a requirement of the Law on development of the academic staff in the Republic of Bulgaria and of the Rules for development of the academic staff at Trakia University):

1) Velyana Georgieva, Dilyana Zvezdova, Lyubomir Vlaev, 2012. Non-isothermal kinetics of thermal degradation of chitosan. *Chemistry Central Journal*, 6(1), 81. IF_{2012}=1,312; SJR_{2012}-0.357; Q2 - 20 points.

2) Velyana Georgieva, Dilyana Zvezdova, Lyubomir Vlaev, 2013. Non-isothermal kinetics of thermal degradation of chitin. *Journal of Thermal Analysis and Calorimetry*, 111(1), 763-771. SJR – 0,458; IF_{2013}=2,206; Q3 – 15 points.

28) Zvezdova, D., Stoeva, S., Aleksiev, D., 2016. Structural Features of Certain p-substituted Phenyl 2-nitrovinyl Sulfones. *Journal of the Chinese Chemical Society*, 63, 247-253. IF_{2016}=0,935; SJR_{2016} -0,256; Q3 – 15 points.

29) Zvezdova, D. T., Georgieva, V. G., Vlaev, L. T., 2012. Comparative study of chitin and chitosan. *Oxidation Communications*, 35(3), 611-618. SJR_{2012}-0,158; IF_{2012}-0,146; Q4-12т.

30) Zvezdov, A. T., El Shemeri, A., Zvezdova, D. T., 2009. Phenol removal multi cell small water treatment device. *Desalination and Water Treatment*, 12(1-3), 299-304. SJR_{2010}-0,269; IF-0,752; Q2 – 20 points.

The total number of points that Assoc.prof. Zvezdova receives for these 5 publications in group of indicators C (item 4) is 82 points; total i.f.=5.351 and individual i.f.=1.808. I do not accept the remaining publications in this group for review, as they are from scientific forums and are published in journals that are not in Scopus or Web of Science, as required by the Law on development of the academic staff in the Republic of Bulgaria and the Rules for development of the academic staff at Trakia University (Annex 8.3). The total number Assoc.prof. Zvezdova's points in group of indicators C is **100 points** for the first monograph, which I accept as main habilitation thesis, and not the five publications that are published in referenced and indexed scientific journals (Scopus /Web of Science), and would give her only 82 points.

Note: The points from the monograph and the publications in group of indicators C are not added up, since the requirements are for a printed monograph, which is accepted as main habilitation paper **or** for 10 publications in Scopus or Web of Science equated to a monograph - main habilitation paper! Assoc.prof. Zvezdova should submit the other two monographs in indicator group D (item 5) as monographs that are not her main habilitation paper.

In group of indicators D Assoc.prof. Zvezdova, PhD, has not taken into account the minimum national requirements of the Law on development of the academic staff in the Republic of Bulgaria and Annex 8.3 of the Rules on development iof the academic staff at Trakia University in item 7 to submit only scientific publications in specialized journals referenced and indexed in world-renowned databases with scientific information (Web of Science; Scopus), outside the main habilitation paper. Associate professor Zvezdova, PhD, submits 19 publications, of which I accept only 2 for review since only these have been printed in referenced and indexed scientific journals with scientific information: Zvezdova, D. T., 2021. Opportunities for improving the quality of non-isothermal degradation kinetic analysis. *Oxidation communications*, 44(2), 345-256. SJR_{2021}-0,22, IF_{2021}-0,484; Q3 – **15 points.**; Nedelchev, N.M., Zvezdova, D.T., 2013. A new approach to differential methods for non-isothermal kinetic studies, *Oxidat Communications*, 36 (4), 1175-1194. SJR_{2013} - 0,202, IF_{2013}- 0,484, Q3 – **15 points.**

Inn group of indicators D (item 7) Assoc.prof. Dilyana Zvezdova, PhD, gets only **30 points, with required minimum of 200 points**, according to the Law on development of the academic staff in the republic of Bulgaria and the Rules for development of the academic staff at Trakia university (Annex 8.3). The total impact factor, according to data in Scopus, of the publications presented for the competition by Asoc.prof. Zvezdova in group of indicators D (item 7) is 0.968, and the individual i.f=0,726. The remaining scientific papers included in the list in group of

indicators D (item 7) are not subject to review since these are from participations in scientific forums and are in journals that are not indexed and referenced in Scopus or Web of Science and do not receive 10 points as Assoc.prof. dpl.eng. Zvezdova, PhD, has assigned points to them.
Note: Ten points are given to a scientific paper published in a refereed and indexed specialized journal with scientific information that does not have an impact factor, but has an SJR. Even if the points from the publications from group C item 4 (82 points) are transferred to group of indicators D (item 7) and 60 points are added for submitted two monographs (outside the main habilitation paper) and all points are added up: 30+82+60 = 172, the obtained points are less than 200, which are the minimum national requirements for group of indicators D. This distribution of the scientific papers to the relevant points in the groups of indicators in Table 1, has not been done by Assoc.prof. Zvezdova, which is her essential omission.

The scientific papers submitted by Assoc.prof. Zvezdova, PhD, in groups of indicators C and D have **total i.f =6,319, and individual one – 2,534.**

In group of indicators E (item 11) Assoc.prof. Zvezova, PhD, has submitted 98 citations, but the attached reference issued by the Central University Library of Trakia University for number of citations in Web of Sciences and SCOPUS of her scientific papers, without auto-citations, is 230 citations, (230x2=**460 points**) According to data from Scopus, the citation index of all of Assoc.prof. Zvezdova's publications, including those she did not submit for the competition, according to Hirsch is low (***h-index*=3**), probably due to the fact that 202 of these 230 citations are for just three of her publications.

The total number of Assioc.prof. Zvezdova's points for groups of indicators A, C, D and E is **640 points.**

Note: Assoc.prof. Dilyana Zvezdova. PhD, **has not complied with** the required minimum of 200 points in group of indicators D (7 points). The non-compliance wth any indicator from Table 1, regarding the minimum national requirements, cannot be compensated by over-compliance with other indicators. This fact, in combination with the low ***h-index*=3** and the low individual **i.f = 2.534**, is a good enough reason for me to stop further reviewing the materials for the competition for "Associate professor" in professional area 4.2 Chemical sciences, submitted by Associate professor dpl.eng. Dilyana Todorova Zvezdova, PhD.

Generalized data about the minimum requirements for both candidates

Group of indicators	Content	Minimum requirements for Associate professor (points)	Assist.prof. dpl.eng. Danika Ivanova, PhD	Assoc.prof. dpl.eng. Dilyana Zvezdova, PhD
A	Indicator 1	50	50	50
B	Indicator 2	-	-	-
C	Indicator 3 Indicator 4	100	 195	100
D	Indicator 7	200	269	30

E	Indicator 11	50	618	460
Total number of points		400	1132	**640**

CONCLUSION

The requirements of the Law on development of the academic staff in the Republic of Bulgaria and the Rules on development of the academic staff at Trakia University (Annex 8.3) for holding the academic position "Associate professor" in professional area 4.2. Chemical sciences are not only complied with, but in most cases exceeded by Assist.prof. dpl.eng. Donika Georgieva Ivanova, PhD. Given the scientific potential, the higher number of points in the scientometric indicators in the groups for minimum national requirements, the higher index of citation rate according to Scopus (***h-index*=11**), the higher individual **i.f.=17,589**, significance of the published works and the scientific contributions contained in them, I convincingly give my **positive assessment** and rank in first place Assist.prof. dpl.eng. Donika Georgieva Ivanova, PhD, in the announced competition. I would like to take the opportunity to recommend to the esteemed Scientific jury of the competition to vote with a positive vote, prepare a report and propose to the Faculty Board of the Faculty of Veterinary Medicine at Trakia University **Assistant professor dpl.eng. Donika Georgieva Ivanova, PhD, to be elected** to the academic position "Associate professor" in Bioorganic chemistry, chemistry of natural and physiologically active substances, field of higher education 4. Natural sciences, mathematics and computer studies, professional area 4.2. Chemical sciences, for the needs of the Department of Pharmacology, Animal Physiology, Biochemistry and Chemistry at the Faculty of Veterinary Medicine of Trakia University, Stara Zagora.

Associate professor dpl.eng. Dilyana Todorova Zvezdova, PhD, partially complies with the requirements of the Law on development of the academic staff in the Republic of Bulgaria and the Rules for development of the academic staff at Trakia University (Annex 8.3) for holding the academic position "Associate professor" in professional area 4.2. Chemical sciences, since in indicator D item 7, she gets just 30 points, with a required minimum of 200 items. In case of non-compliance with an indicator in the groups from Table 1 for the national minimum requirements (Law on development of the academic staff in the Republic of Bulgaria and the Rules for development of the academic staff at Trakia University, Annex 8.3) the candidate cannot be ranked and take the relevant academic position. My evaluation for compliance with the minimum national scientometric indicators of associate professor dpl.eng. D. Zvezdova, PhD, is **negative**. I take the opportunity to recommend to the esteemed Scientific jury of the competition to vote with a negative vote for ranking the candidate Assoc.prof. dpl.eng. Dilyana Todorova Zvezdova, PhD, for the academic position "Associate professor" in field of higher education 4. Natural sciences, mathematics and computer studies, professional area 4.2. Chemical sciences.

заличено съгл.

Date: 26 July 2022 Reviewer: ..... чл. 23 от ЗЗЛД ...

Stara Zagora /Professor Ne[redacted]va, DSc/