

OPINION

For the competition for occupying the academic position "Associate Professor", professional field 4.4 Earth sciences, academic speciality 02.22.04 (Technology of use and treating of waste from biodiesel production), announced in State Gazette, issue 1 of 03.01.2020, with candidate Nikolay Stoyanov Todorov, PhD, Chief Assistant

By Prof, Eng. Violina Angelova Rizova, PhD (pursuant to Chancellor's ordinance of "Prof. Asen Zlatarov, PhD" University № ПД – 64/ 04.03.2020)

Chief assistant Nikolay Todorov, PhD is the only candidate for the announced in State Gazette, issue 1 of 03.01.2020 and on the website of "Prof Asen Zlatarov, PhD" University- Burgas competition for the academic position "Associate Professor" in professional field 4. Natural Sciences, Mathematics and Informatics, professional field 4.4. Earth Sciences for the scientific speciality 02.22.04. Technology of use and treating of waste (Technology of use and treating of waste from biodiesel production), for the needs of the department of "Ecology and Environment Protection" in the faculty of Natural Sciences, "Prof Asen Zlatarov, PhD" University- Burgas.

1. Brief biographical information about the candidate

Chief assistant Nikolay Todorov, PhD acquired the academic degree "Bachelor", speciality "Tourism" in "Prof Asen Zlatarov, PhD" University- Burgas in 2007. In 2009 he acquired the academic degree "Master" in the speciality "International Business" and in 2011 he graduated from the same university with a Master degree in "Ecology and Environment Protection".

From April 2007 to June 2008 he worked as a commercial representative of Vadzho Commerce OOD. From February 2010 to January 2012 he worked as a chemist technician in "Prof Asen Zlatarov, PhD" University- Burgas. From February 2012 to January 2015 he was a PhD candidate in "Prof Asen Zlatarov, PhD" University- Burgas. From 01.06.2015 to 13.07.2016 he was an assistant and since 13.07.2016 he has been a chief assistant in the department of "Ecology and Environment Protection" with the faculty of Natural sciences of "Prof Asen Zlatarov, PhD" University- Burgas.

In 2015 he defended dissertation for the academic and scientific degree "Doctor of Philosophy" on the topic: "Use of waste polyethylene terephthalate".

He knows English, German and Russian.

2. Relevance of the submitted documents and materials of the candidate with the required ones according to the Academic staff development Act of the Republic of Bulgaria (ASDARB) and the Regulations on implementation of the Academic staff development Act of the Republic of Bulgaria (RIASDARB);

The presented by Chief assistant Nikolay Todorov, PhD, *set of materials* is prepared in accordance with the requirements of ASDARB and RIASDARB and section III. Conditions and terms of occupying the academic position "Associate Professor" of "Prof Asen Zlatarov,

PhD" University.

Chief Assistant Nikolay Todorov PhD defended his dissertation on topic "Use of waste polyethylene terephthalate" (indicator A- 50 points). He has presented his monograph on topic : "Use of glycerol phase, received from biodiesel production of rapeseed oil" (indicator C- 100points), 26 publications (group of indicators D- 343.9 points), 38 quotations (group of indicators E- 100p.), participation in 2 national and educational projects, 1 international educational project and 2 student textbooks (group of indicators F- 100p.). The required number of points from groups A, C, F is fulfilled and for group D is more than the minimum requirements with 343.9 points (300 points for the group). The candidate fulfilled the scientific and metric requirements with a total number of 693.9 points with required 650 points.

Chief Assistant Nikolay Todorov, PhD fulfils the minimum national requirements for occupying the academic position "Associate Professor" as well as the minimum requirement for occupying the position "Associate Professor" of "Prof Asen Zlatarov, PhD" University-Burgas.

3. Evaluation of the pedagogical education and work of the candidate

Chief Assistant Nikolay Todorov, PhD is a lecturer in the department of "Ecology and Environment Protection" in the faculty of Natural Sciences, "Prof Asen Zlatarov, PhD" University- Burgas. The candidate has 4 years and 9 months of teaching experience and since the month of June 2015 till the present moment he has consecutively occupied the academic positions "Assistant" and "Chief Assistant".

According to the presented reference for the course hours he delivered in "Prof Asen Zlatarov, PhD" University- Burgas, during the last 3 years the teaching workload of Chief assistant Nikolay Todorov, PhD is more than 400 course hours per year. The candidate delivered lectures and seminars in the disciplines "Ecological monitoring", "Ecological legislation", "Air pollution and impacts on ecosystems" and " Protected areas" to students from "Bachelor" degree programmes.

Chief assistant Nikolay Todorov, PhD delivered seminars to 4 Master degree students from Kazakhstan in the discipline "Ecological monitoring" during the academic 2017/ 2018 and to 1 Bachelor degree student in the discipline "Geoecology" during the 2018/2019 academic year.

Chief assistant Nikolay Todorov, PhD developed and updated 7 education programmes for the disciplines "Protected areas" and for the specialities " Ecology and environment protection" and "Ecology and ecology management", "Ecological monitoring", for the specialities "Ecological legislation and regulations", "Ecological legislation and regulatory documents", for the specialities "Chemistry of cosmetic substances and surfactants".

He participates in the competition with 2 textbooks from which "Ecological monitoring" is written by him independently and "Protected areas" is in joint authorship.

He is a supervisor of 2 and co- supervisor of 3 successfully graduated students.

Besides his main teaching work, Chief assistant Nikolay Todorov, PhD actively participates in the organization and realization of Ecology conference for students and PhD candidates with the slogan; "Let's think about the future with a view of ecology". He actively works with student circles which is a very good evaluation of the candidate's teaching work. The results from the scientific and research work of the student circles were made known in 3 publications and 8 participations in science forums in the country.

The above-mentioned information gives me reason to assess the pedagogical education and work of Nikolay Todorov, PhD as very good.

4. Evaluation of the scientific, the scientific applied and publication work of the candidate

4.1. Participation in scientific, scientific applied and education projects

Chief assistant Nikolay Todorov, PhD participated in 1 national scientific project, financed by the National research fund, 1 international education project, 1 project with Décor Design EOOD, town of Burgas as contracting authority and 6 internal and institutional scientific projects of the Science and research sector of "Prof. Asen Zlatarov, PhD" University- Burgas. He was in charge of the project assigned by Décor Design EOOD, town of Burgas and of the two of the internal and institutional scientific projects of the Science and research sector of "Prof. Asen Zlatarov, PhD" University- Burgas.

The candidate participated as an expert in the international project "ENGAGE" under Erasmus + programme.

The candidate participated in the National Scientific Programme "Young scientists and post-doctoral candidates" as a researcher during the period from 14.01.2019 to 01.10.2019.

4.2. Characteristic of the published scientific results

Nikolay Todorov, PhD participates in the competition for the academic position "Associate Professor" with 1 monograph, 26 scientific publications and 2 student textbooks.

His monographic work is on topic "Use of glycerol phase, received from biodiesel production of rapeseed oil" ISBN 978-954-471-608-0. Its volume is 168 pages, issued by Libra Scorp 2020- town of Burgas and corresponds to the requirements for monograph.

The publications may be grouped as follows:

- Publications in editions, which are referenced and indexed in world known databases of scientific information (SCOPUS and WEB OF SCIENCE)- 3 pieces [1,2,3]
- Publications in non-referenced magazines with scientific review- 23 pieces, of which 5 are in foreign international scientific magazines [4-8] and 18 are in Bulgarian scientific magazines and in materials for conferences

From the scientific publications 5 [2, 4, 5, 9, 10] are independent, and 21 are in joint authorship. In 11 of the scientific works [1, 6-8, 11-13, 15-18] Chief assistant Nikolay Todorov, PhD is in the first place because of his biggest contribution in the development and publishing of the results, which is further confirmed by records of contribution. 21 of the publications are published in English language [1-9, 11, 15-17, 19-26] and 5 are in Bulgarian language [10, 12-14,18]. 14 of the publications were reported on scientific forums.

4.3. Impact from the scientific work of the candidate in literature (Quoted publications)

The appraisal of the acknowledgement of the candidate in the scientific environment are the quotations, denoted in the competition documents. According to the reference presented by the candidate 7 quotations in scientific editions are noticed, referenced and indexed in world known databases with scientific information, 3 quotations in monographs and group volumes with scientific review and 28 quotations in non-referenced editions with scientific review.

This information gives me the reason to conclude that the candidate is a recognized author in the scientific environment, having published in significant scientific magazines in the field of the competition. According to the minimum national requirements for occupying the position of Associate Professor in "Prof. Asen Zlatarov, PhD" University, the presented quotations are

completely sufficient and prove good level of impact of the scientific production of Chief assistant Nikolay Todorov, PhD over the research work of Bulgarian and foreign authors.

4.4. Contribution in the research work of the candidate (scientific, scientific- applied, applied)

I accept the presented by the candidate authors' reference of the scientific and scientific-applied contributions. The main scientific and scientific- applied contributions in the research works with the participation of Chief Assistant Nikolay Todorov, PhD are in three main directions as follows:

- (1) Use and treating of waste from biodiesel production.
- (2) Ecological monitoring
- (3) Research of the structure of some organic compounds or polymers through instrumental methods of analysis.

The scientific and applied contributions are related to the use of the glycerol phase, a side product in the biodiesel production of rapeseed oil and the receiving of alkyd resins that may be used as primers or air-drying paints and varnish through the modification of alkyd resins with maleic anhydride. It is proved that from the products of polymerization of PET, phthalic anhydride and sunflower oil or a mixture of sunflower oil and linseed oil as well as in the esterification of phthalic anhydride and a product from the solvolysis of PET with monoglycerides, there may be received alkyd resins and the films received from these alkyd resins have higher firmness; PET can be chemically recycled through depolymerization with raw glycerol, received as a side product in biodiesel production with the absence of catalyst; unsaturated polyester resin on the basis of waste PET and raw glycerol may be used as binding substance in the production of polymer concrete; from the glycerol phase received in the biodiesel production of sunflower oil there are also received raw glycerol and fatty acids of sunflower oil that may be used in the receiving of monoglycerides, depolymerization of PET and the receiving of surface coatings.

5. Evaluation of the personal contribution of the candidate

I consider the contributions of the candidate as his personal work and that they are sufficient and completely corresponding to the topic of the competition. They show the candidate's systematic approach and persistency to develop and solve problems related to the use and treating of waste from biodiesel production and to the ecological monitoring. The achieved scientific results are of high scientific and scientific- applied value.

I believe that the qualitative and quantitative indicators and criteria for occupation of the academic position of "Associate Professor" are met in accordance with the minimum national requirements for the relevant field of higher education which also refers to the requirements for occupying the academic position "Associate professor" of "Prof. Asen Zlatarov PhD" University-town of Burgas.

6. Critical notes and recommendations

There are no critical notes regarding the candidate's work.

I recommend that Nikola Todorov, PhD increases his publication activity in

recognized foreign scientific magazines so that his research works find wider acknowledgement.

7. Personal impressions

I have no personal impressions from the candidate's work and my evaluation is based entirely on the presented materials.

8. Conclusion

In conclusion I give positive evaluation of the overall pedagogical, scientific and research work of Chief assistant Nikolay Stoyanov Todorov, PhD which meets the requirements for occupying the academic position "Associate professor" of "Prof. Asen Zlatarov PhD" University-Burgas.

On the basis of the presented to me scientific research works, their significance, the scientific and applied contributions that they contained, I find it reasonable to suggest Chief assistant Nikolay Stoyanov Todorov, PhD to occupy the academic position "Associate Professor" in professional field 4.4 Earth sciences for academic speciality 02.22.04. "Technology of use and treating of waste" (Use and treating of waste from biodiesel production).

Date: 13.04.2020 r.

Opinion prepared by:.....

(Prof. Eng. V. Angelova, PhD)