

Университет
"Проф. Д-р Асен Златаров"
8010 Бургас, бул. "Проф. Якимов" №1
Per. № 1194/04.05.2020 г.

REPORT

by

**Prof. Sevdalina Hristova Turmanova, PhD,
Department of Technology, Materials and Materials Science,
"Prof. Dr. Assen Zlatarov" University - Burgas**

Member of the Scientific Jury set to render a decision on the competition for filling the academic position of an Associate Professor in the Professional Field 4.4. Earth Sciences according to the Classifier of the Areas of Higher Education and the Professional Fields (Scientific Specialty "Technology for the recovery and treatment of waste")

The Report is in compliance with Development of Academic Staff in the Republic of Bulgaria Act (DASRB), the Rules for the Application of the Development of Academic Staff in the Republic of Bulgaria Act, and with the Rules set at the "Prof. Dr. Assen Zlatarov" University - Burgas, for applying the Act aforementioned.

1. A brief biographical reference for the candidate

Chief Assistant Professor Nikola Todorov was born on 25.10.1983 in the city of Burgas. In 2011 he graduated from the "Prof. Dr. Assen Zlatarov" University - Burgas with a Master's Degree in Ecology. During the period 2012-2015 he worked on his doctoral thesis and in 2015 defended it successfully. The candidate's academic career began in 2015 after passing the competitive examination for the position of assistant in the Department of Ecology and Environmental Protection. He is currently the Chief Assistant in the department and he teaches students of Bachelor's and Master's degrees. The biographical information presents the applicant as a researcher and academic lecturer with clear scientific orientations in the professional field and scientific specialty of the competition procedure. All required documents are precisely arranged and structured, which is a prerequisite for good readability and analysis. The motivation, reasons and arguments in the competition for filling the academic position of "Associate Professor" at the "Prof. Dr. Assen Zlatarov" University - Burgas, are clearly justified.

2. Analysis of materials presented by the candidate in groups of indicators

Chief Assistant Professor Nikola Todorov is the only candidate in the announced competition for the needs of the Department of Ecology and Environmental Protection of the "Prof. Dr. Assen Zlatarov" University -Burgas, at which he presented with a habilitation work-monograph of a Bulgarian publishing house with a volume of 168 pages and twenty-six scientific publications with a total impact factor of 3.34. The three of last stated have been published in peer-reviewed and indexed *scopus* and *web of science* databases, and the other 23 scientific publications have been published in non-refereed scientific peer-reviewed journals. Dr. Todorov's research findings are also presented with 14 participation in scientific forums in the country as reports and posters according to the attached list. I accept 26 publications and monograph, participation in national forums, 35 citations of 26 scientific articles for review which I report in my final evaluation. The submitted papers by the candidate can be classified as follows:

§ By type:

Articles – 26

Monograph (habilitation work)-1.

§ By place of publication:

- articles in refereed international journals with impact factor – 3.
Journal of Chemical Technology and Metallurgy (IF = 0.489) – 1;
Bulgarian Chemical Communications (IF = 0.29) – 1;
Food and Agricultural Immunology IF = 2. 568) – 1;
- articles in non-refereed journals without impact factor with scientific review or in edited collective volumes – 23 .
- articles in international journals – 5.
International Journal of Scientific Research, Environmental Science – 1;
Indian Journal of Applied Research – 1;
International Journal of Applied Research – 1;
International Journal of Scientific Research – 1.
- articles in Bulgarian journal and in editorial volumes – 18.
Annual of Assen Zlatarov University – 5;
Science and Technologies – 3;
Industrial Technology – 2;
Management and Education – 2;
Journal of International Scientific Publications: "Ecology & Safety – 1;
International conference on technics, ICTTE – 1;
International Conference on Technics, Technologies and Education ICTTE – 1;
Journal scientific and applied research – 1;
International Scientific Journal Machines. Technologies. Materials – 1;
Materials, Methods & Technologies – 1.

§ By number of co-authors

Author's – 5, with one co-author – 2 and with more than two co-authors – 19. A significant part of the research carried out by Chief Assistant Professor Todorov is co-authored. In 16 (sixteen) of the presented publications Todorov is first at the team and in the other 10 publications second or later place depending on working team. His publications have been cited 38 times by other authors.

Chief Assistant Professor Nikola Todorov has the necessary professional experience in the specialty and meets the requirements, in accordance with the Development of Academic Staff in the Republic of Bulgaria Act (DASRB), the Rules for the Application of the Development of Academic Staff in the Republic of Bulgaria Act, and with the Rules set at the "Prof. Dr. Assen Zlatarov" University - Burgas, for applying the Act aforementioned, and he has a basis to participate in this competition.

3. Assessment of the scientific and research accomplishments

The main scientific contributions of the submitted papers are in accordance with the professional classification in which the competition was announced. The scientific publications and the monograph, consisting of seven parts in 168-page volumes, show consistency and depth, and are an interesting theoretical and applied point of view of a problematic interdisciplinary area – ecology. The results are significant and allow the identification of original scientific and applied scientific contributions. Well-planned and targeted research, enriched with new methods and implemented at a high methodological level, can be summarized in three important thematic areas:

1. Recovery and treatment of biodiesel production wastes.
2. Environmental monitoring.
3. Investigation of the structure of certain organic compounds or polymers by instrumental methods of analysis.

In the first area was published one monograph and 15 publications. The major contributions in this direction are related to the use of the glycerol phase as a raw material for the production of alkyd resins, as well as the possibility of improving their properties by modification with maleic anhydride. For the first time, alkyds were obtained with the simultaneous recovery of two waste products – polyethylene terephthalate bottles and glycerol phase. It has been found that alkyd resins can be successfully obtained under microwave irradiation, thereby reducing time and energy costs. Appropriate conditions for the use of crude glycerol as a depolymerizing reagent of polyethylene terephthalate have been found. A thorough evaluation of the possibilities for utilization of the products of the depolymerization of the polyethylene terephthalate and of the glycerol phase obtained in the production of biodiesel has been carried out.

The study in the second area is relates to proposing activities to reduce noise pollution in one of the training buildings and to improve working and training conditions. The third area of expertise combines research into pesticides, oils and biodiesel, unsaturated polyester resins and polymers. The results are interpreted with interesting graphic and technical design. All the presented studies have a valuable contribution to the accumulation, supplementation and enrichment of the existing knowledge in the scientific field of the competition.

4. Additional indicators of the applicant's activity.

Chief Assistant Professor Nikola Todorov has actively participated in the implementation of 8 projects, three of which under his guidance. In addition, he has headed two and co-headed three graduated students with a Master's degree. He has been a mentor of five international students. The candidate is the author and co-author of two textbooks on Environmental Monitoring and Protected Areas. His contribution to the development and updating of seven curricula and lecture courses is indisputable.

5. Conclusion

Research activity identifies Chief Assistant Professor Nikola Todorov as a young and ambitious scientist in the field of "Ecology and Environmental Protection " with a hint of real, current and valuable scientific problems – recovery and treatment of biodiesel production wastes, investigation of the structure of certain organic compounds and polymers by instrumental methods of analysis, protection of environment, as well as ways to use and reuse effectively already spend materials (recycling).

According to Art. 26(3) of the DASRB, on the grounds of the documentation presented by the candidate, on his publications reviewed and the above assessment, I recommend the Scientific Jury to render a positive decision on Assistant Professor Nikola Todorov PhD to occupy the academic position of an Associate Professor in professional direction 4.4. Earth sciences, scientific specialty "Technology for the recovery and treatment of waste" at the "Prof. Dr. Assen Zlatarov" University - Burgas.

Date: 27/04/2020

Report prepared by:

Burgas

/Prof. Dr. Sevdalina Turmanova /