

## S T A T E M E N T

**REGARDING:** Competition for the academic position "Associated Professor", Professional field 4.3. Biological Sciences, (Ecology and Conservation of the Ecosystems – Ecology of the Microorganisms), announced in the State Gazette Nr.88/13.10.2020

**from** Assoc. Prof. Dr. Adriana Gousterova, PhD  
Department of Biotechnology, Laboratory of Bioremediation and Biofuels,  
The Stephan Angeloff Institute of Microbiology, BAS  
Professional field 4.3. Biological Sciences, specialty: Microbiology

The Scientific Jury for holding of competition for associated professor to professional field 4.3 Biological Sciences (Ecology and Conservation of the Ecosystems – Ecology of the Microorganisms), announced in the State Gazette Nr.88/13.10.2020, was determined by the Decision of the Faculty Council of the Faculty of Biology, protocol Nr.13/10.11.2020, according to article 4 and article 25 from the Law of the Development of the Academic Compositions in the Republic of Bulgaria (LDACRB), article 57 paragraph (1) and (2) from the Regulations for application of LDACRB and according to the Regulations for the conditions and order for the acquiring of scientific degrees and taking of academic positions in the Sofia University "St. Kliment Ohridski".

As a member of this jury, I declare that I have no common publications, projects or any form of conflict of interests according to the art. 1, paragraphs 3 and 5 of the Law of the Development of the Academic Compositions in the Republic of Bulgaria with the only assessed candidate in the competition senior assistant professor Silvena Boteva Boteva from the department "Ecology and Environmental Protection", Faculty of Biology, Sofia University "St. Kliment Ohridski".

The presented documents are in accordance to the directions published in the Regulations for application of LDACRB.

### **1. BRIEF INFORMATION ABOUT THE CANDIDATES IN THE COMPETITION:**

Senior Assist. Prof. Dr. Silvena Boteva Boteva is the only candidate in the competition for the academic position "Associated Professor", announced by the Sofia University "St. Kliment Ohridski" for the needs of the department Ecology and Environmental Protection, Faculty of Biology.

She graduated as a bachelor in specialty Ecology and Environmental Protection in 2004. Then she studied in 2005 – 2006 and graduated a master program "Protection of the nature's environment". The master program was followed by a regular PhD study (2006 – 2009) in the same department with subject of the PhD thesis "Structure and functions of the bacterioplankton from the circus of the Seven Rila lakes – National Park Rila". Since 2010 she has been a senior assistant professor, and since 2011 she acquired the PhD degree. She has been being Doctor for 9 years till now. To the current moment she works in the department "Ecology and Environmental Protection", Faculty of Biology.

## **2. IMPLEMENTATION OF THE REQUIREMENTS FOR THE ACADEMIC POSITION "ASSOCIATE PROFESSOR"**

The only candidate for the academic position "Associated Professor" in the competition presents documentation with the implementation of the national requirements of the Law about separate indicators and documentation for the implementation of the additional requirements for tenure of the position of "Associated Professor" according to the Regulations with included list of in total 19 publications in referred and indexed editions and 2 chapters of books, attached to the competition, as well as additionally in 3 publications, which are in non referred and indexed editions.

**Total impact factor: 16.541. Total citings: 131** – 65 in publications, referred in Scopus and Web of Science and 66 in other publications. **H-index: 4** (Scopus) 6. Participation in scientific and educational projects: 7 in number, as a director of studies are 3 of the projects. She has above 9 years length of service in the specialty in the same department, for which needs is the competition announced. She is a director of studies of **11 successfully defended graduates** from 2014 to 2020. Participation in scientific conferences with reports or posters: from 2012 to 2020 – **in total 36, from them 25 international.**

### **3. Compliance of the minimum national requirements according to the LDACRB**

From the documents of the competition is clearly shown, that Senior Assist. Prof. Dr. Silvena Boteva fulfills and exceeds the minimal national requirements, as follows:

#### **According to Group A – 50 points**

The candidate obtained the educational and scientific degree "PhD" in 2011 by defending the PhD thesis "Structure and functions of the bacterioplankton from the circus of the Seven Rila lakes – National Park Rila", director of studies Assoc. Prof. Dr. Valentin Mirtchev Bogoev, Sofia University "St. Kliment Ohridski", successfully.

**According to indicator 4 in Group B** – research work qualifying for an academic degree – scientific publications in international journals, which are referred and indexed in world famous bases with scientific information Scopus and Web of Sciences in the period 2013 – 2020, Q<sub>1</sub> – 50 points, and Q<sub>2</sub> – 60 points, in total **110 points.**

#### **According to indicators 7 and 8 in Group C – 249 points**

Publications in Q<sub>2</sub> – 140 points, publications in Q<sub>3</sub> – 15 points, publications in Q<sub>4</sub> – 24 points, publications in editions with SJR without IF – 40 points, and mentioned 2 chapters of books – 30 points.

#### **According to indicator 11 in Group D – 186 points**

(when only 50 points are needed), formed by 131 citations. Total citations: 65+28 (28 editions outside of Scopus) = 93 citations multiplied by 2 points equals 186.

### **4. Assessment of the candidate's scientific works for her all-round academic development.**

The main contributions of the activity of Senior Assist. Prof. Dr. Silvena Boteva are formed in a summary of 15 pages, which gives well systematized information about the implemented scientific activity. The contributions in the publications are grouped in 5 main



scientific researching directions, which entirely correspond to the direction of the competition and the section, as follows:

**I. Influence of the pollutants over soil microbial communities**

- 1.1 Effect of the fungicide azoxystrobin on soil microbial communities.
- 1.2. Effect of radionuclides and heavy metals on soil microbial communities.
- 1.3. Influence of pollution with petroleum oil over microbial communities.
- 1.4. Influence of methane over soil microbial communities.

**II. Microflora of alpine lakes – continuation of the PhD thesis work.**

**III. Contributions in the field of ecotoxicology.**

1. The effect of the herbicides paraquat and glyphosate has been studied by the using of test objects cress (*Lepidium sativum* L.) and radish (*Raphanus sativus* var. *radiculata* L.)
2. The possibility of using of cress (*Lepidium sativum* L.) as a test object for soil monitoring has been researched.
3. The ecotoxicity of purified production's waste from production of metal products in waters has been studied on test objects *Pseudorasbora parva* (stone moroko) and *Lepidium sativum* L (cress).
4. A survey of the ecotoxicological studies for the period 2010-2016 has been done.

**IV. Using of remote sensing methods in the field of ecology.**

1. Two methods (the one based on pixels, the other based on objects) have been analysed for classification of Earth covering and land-use of satellite images from a region in the South part of Crete island.
2. The spatial distribution of various types of slope and steepness has been evaluated, by being researched the connection between the geomorphology and the types of Earth covering in the region of peninsula Sithonia, Greece, by using of digital model for above sea-level. – The using of digital data, when in this researching it allows joint registration with others.
3. A method for potential erosion is applied for assessment of the risk of erosion in the region of Bregalnitsa river and National park Mavrovo, Republic of North Macedonia.
4. A digital model for above sea-level has been used, in order to be estimated the combined influence of the environmental factors and the human intervention over the distribution of the vegetation in the region of Nisos Elafonisos (Crete island, Greece).
5. A comparison between the Canadian system for assessment of the danger of forest fires and the National system for assessment of the risk of forest fires in the Mediterranean region (Crete island, Greece) has been done by using of separate models with plant species.

**V. Additional contributions.**

1. The energy effectiveness of four grown under glass cultures has been evaluated, which are grown on Crete island, Greece, on the base on the incoming and outgoing energy streams, as in consequence a financial valuing has been done.
2. The possibilities for using of textile wastes for production of coverings from unwoven textile for catching of oil floods have been explored, by developing a suitable adsorbent, which is effective, economical and nature friendly.
3. A method for potential erosion is applied for assessment of the risk of erosion in the region of Bregalnitsa river and National park Mavrovo, Republic of North Macedonia.
4. Expert activity.

Senior Assist. Prof. Dr. Silvena Boteva represents a significant expert activity: preparation of reports for environmental impact assessment, waste management programs, environmental assessments, integrated permits.

#### **VI. Educational and methodical activity.**

The candidate has declared active teaching and lecturing in the department "Ecology and Environmental Protection", Faculty of Biology. A report on the workload from 2014 until now is presented.

Laboratory exercises and lectures with students and summer internships. Main topics: Bioindication of contaminated soils, Microbiocoenosis, Waste management, Ecology of the microorganisms, Microbiological monitoring, Soil science.

Lectures and exercises in an elective course; Alternative energy sources, which is eligible for the Biobusiness master's program.

Mapping and evaluation of ecosystem services for the master's program Ecology, and others.

During the last few years Senior Assist. Prof. Dr. Silvena Boteva has a gradual and increasing scientific and career development. She gives an example for active participation in the supervision of 11 Master students for preparation of diploma projects.

#### **VII. Critical remarks and recommendations.**

I have no remarks or recommendations to the candidate. All documents are prepared according to the requirements.

#### **CONCLUSION**

**In conclusion, Senior Assistant Professor Dr. Silvena Boteva is a promising researcher with excellent knowledge of the problems she has been working.**

**I convincingly give my positive evaluation and recommend to the respected Scientific Jury to fully support the occupation of the academic position of Associate Professor in the field of the higher education in a professional field 4.3. Biological Sciences (Ecology and Ecosystem Protection - Ecology of Microorganisms), Sofia University (SU) "St. Kliment Ohridski" of the candidate Senior Assistant Professor Dr. Silvena Boteva Boteva.**

27.01.2021  
Sofia

/ Assoc. Prof. Dr. Adriana Gousterova /