



"1<sup>st</sup> scientific conference for  
**CRITICAL ENVIRONMENTAL ISSUES**  
OF THE WESTERN BALKAN COUNTRIES"



# BOOK OF ABSTRACTS

October 28<sup>th</sup> to 30<sup>th</sup>, 2019, Faculty of Agriculture,  
Goce Delčev University, Štip, Republic of North Macedonia

**“1<sup>st</sup> scientific conference for CRITICAL ENVIRONMENTAL ISSUES OF THE WESTERN BALKAN COUNTRIES”**

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## **ORGANIZERS:**

Goce Delčev University, Faculty of Agriculture, Štip,  
Republic of North Macedonia

WBAA-Western Balkan Alumni Association

The conference is organized within the project titled “Creating sustainable transfer of knowledge for building novel ideas for critical environmental issues of the western Balkan countries”, **project number 2019-B1\_010, financed by Western Balkans Alumni Association.**

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## **WELCOME**

**On behalf of the project coordinators of**

### **“CREATING SUSTAINABLE TRANSFER OF KNOWLEDGE FOR BUILDING NOVEL IDEAS FOR CRITICAL ENVIRONMENTAL ISSUES OF THE WESTERN BALKAN COUNTRIES”**

**Project number 2019-B1\_010**

**financed by Western Balkans Alumni Association**

*The project involves networking of students and scientific researchers from Western Balkan countries for creating dataset base of the latest chemo-metric approaches for environmental pollution/protection and ecological effects as well. Even the environmental pollution is a global problem, the latest research indicate that the Western Balkan countries are significantly affect with the environmental pollution. Furthermore, the Western Balkan countries still deals with the problem of poor population awareness for environmental protection. Therefore, this project idea is to unite knowledge from Western Balkan countries and share with youth from this region, increasing the environmental protection awareness within students. Therefore, the students will have the main role in lunching the environmentally friendly aspects for creating novel chemo-metric models in environmental sciences. The beneficiary effect for the Western Balkan students will be creating long-term valuable and sustainable correlations.*

*The project has regional focus, networking six universities from the Western Balkan countries (students and scientific experts-University professors). Furthermore, this project has a national focus for the students from three state Universities from North Macedonia (students from “Goce Delčev” University in Štip, “Ss Kiril and Methodius” University in Skopje and University in Tetovo). Even the environmental pollution is a global problem, the latest research indicate that the Western Balkan countries are significantly affected with the pollution, pointing strongly on heavy metal industry, uncontrolled xenobiotic introduction in the different parts of the environment, electronic waste disposal etc. Furthermore, the Western Balkan countries still deals with the problem of poor population awareness for environmental protection. Therefore, this project will involve regional and national students and scientific researches in order to provide novel chemo-metric methodology and beneficial environmental protection methods.*

*The project intends to involve three national and five regional universities (WBAA members). Each regional university will participate with one scientific expert (university professor) and two students (WBAA member). Two national universities (“Ss Kiril and Methodius” University in Skopje and State University in Tetovo) will participate with one scientific expert and three students. “Goce Delčev” University will participate with 10 scientific experts and 15 students. Four representatives from Non-members institutions (Ministry of education and science, Ministry of environment and physical planning and Academy of science and art of North Macedonia) will be invited as well. Participants from North Macedonia, Albania, Kosovo, Serbia, Bosnia and Hercegovina and Montenegro shall collaborate for the benefit of the whole region for several critical environmental issues.*

*Overall objective: Use of Universities’ expertise in creation new valuable, suitable and accurate chemometric models for predicting and measuring the contamination level in different parts of the Environment (air, soil, water, plant food). Creating a regional scale of experience for determining the anomalous parts of the Environment. Proposing new ideas for national and regional strategies for Environmental protection. Promoting new ideas for Inter-university cooperation. Creating sustainable University network for continuous cooperation in the field of Environmental monitoring, pollution and protection (both, for students and researchers).*

**Assist. Prof. Biljana Balabanova**

**Kiril Jordanov**

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### ***About the Western Balkans Alumni Association (WBAA)***

The Western Balkans Alumni Association (WBAA) is a regional network of students and alumni from the Western Balkan region (Albania, Bosnia and Herzegovina, Kosovo\*, North Macedonia, Montenegro, Serbia) who have spent part of their studies in one of Erasmus+ programmed countries. These exchanges were mostly funded by the European Commission. WBAA is neutral, unbiased and nonpartisan in the existing political discourse.

WBAA is supported and funded by the European Commission.

WBAA Mission:

- Advocating modernization and improvement of higher education quality in the region;
- Empowering young people of the Western Balkans on their academic and career development towards successful employment;
- Strengthening regional exchange, collaboration and integration;
- Supporting region's efforts towards European integration;

Web page:

<https://www.western-balkans-alumni.eu/>

FB page: <https://www.facebook.com/WesternBalkansAlumniAssociation/>

Instagram: @wbaassociation

e-mail: [info@western-balkans-alumni.eu](mailto:info@western-balkans-alumni.eu)

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**SCIENTIFIC COMMITTEE MEMBERS**

**President:**

**Assist. Prof. Biljana Balabanova**, Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Members:**

**Prof. Ljupčo Mihajlov** - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Prof. Violeta Ivanova Petropulos** - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Prof. Fidanka Trajkova** - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Assist. Prof. Biljana Kovacevik** - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Assist. Prof. Natalija Markova-Ruzdik** - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Assist. Prof. Emilija Arsov** - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

**Prof. Violeta Stefanova** - Faculty of Natural and Technical Sciences, Goce Delčev University, Štip, Republic of North Macedonia

**Assist. Prof. Afrodita Zendelska** - Faculty of Natural and Technical Sciences, Goce Delčev University, Štip, Republic of North Macedonia

**ORGANIZING COMMITTEE MEMBERS**

**President:**

**Kiril Jordanov**, BEc, Team Member of Western Balkans Alumni Association and advisor of public procurement, , Štip, Republic of North Macedonia

**Members:**

**Sanja Stefanova**, MSc, Board Member of Western Balkans Alumni Association and International Relations Officer at Goce Delčev University, Štip, Republic of North Macedonia

**Biljana Balabanova**, Assist. Professor at Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia



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SCIENTIFIC PROGRAM		
October 28 <sup>th</sup> , 2019 (Monday)		
Time: 12:00-16:00, Registration for regional participants (Faculty of Agriculture, Campus 2)		
16:00-16:15	Moderator's Introduction speech Presentation of Goce Delčev University to the regional participants	
16:15-16:30	WBAA representative	
16:30-17:30	Introducing Scientific Research Centers of Goce Delčev University	
17:30-17:40	Coffee break	
17:40-18:30	<b>Regional experts meeting</b> Problems and challenges facing each country; Introduction and proposing new and beneficial chemo-metric tools for environmental pollution; Proposing “environmentally friendly tools” for reduction the toxic effect of the pollutants and hazards.	<b>Students/young participants meeting</b> Introduction of regional and national participants; Promoting environmental issues from each country; Generating new proposal ideas; Creating sustainable cooperation’s.
19:00	Welcoming dinner (Hotel Izgrev hall)	
October 29 <sup>th</sup> , 2019 (Tuesday)		
Time: 08:00-09:00, Registration for national participants		
09:00	Opening Ceremony (Hall Campus 2)	
09:00-09:05	Moderator's Introduction speech	
09:05-09:10	Rector’s speech, prof. Blazo Boev	
09:10-09:15	Project coordinators introduction: Biljana Balabanova / Kiril Jordanov	
09:15-09:20	Representative from Ministry of Education and Science, Republic of North Macedonia	
09:20-09:25	Representative from Macedonian Academy of Science and Arts, Republic of North Macedonia	
09:25-09:30	WBAA representative	
ENVIRONMENTAL POLLUTION: critical issues concerning at national and regional scale -PLENARY LECTURES-		
09:30-09:50	<b>Trajče Stafilov</b> Faculty of Natural Sciences and Mathematics, Institute of Chemistry, Ss. Kiril and Methodius, Skopje, Republic of North Macedonia	<b>ENVIRONMENTAL POLLUTION STUDIES IN DIFFERENT ENVIRONMENTAL MEDIA IN THE REPUBLIC OF NORTH MACEDONIA</b>

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09:50-10:05	<b>Biljana Balabanova</b> Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia	<b>CHEMOMETRIC MODELS FOR PREDICTING ENVIRONMENTAL “HOTSPOTS”</b>
10:05-10:20	<b>Panvera Lazo</b> University of Tirana, Department of Chemistry, Tirana, Albania	<b>PASSIVE AND ACTIVE MOSS BIOMONITORING FOR MULTIELEMENTS ATMOSPHERIC DEPOSITION IN ALBANIA</b>
10:20-10:35	<b>Musaj Pacarizi</b> University of Pristina, Department of Chemistry, Pristina, Kosovo	<b>ELECTROCHEMISTRY METHODS AND THEIR ENVIRONMENTAL APPLICATION</b>
10:35-10:50	<b>Jordana Ninkov</b> Institute of Field and Vegatable Crops, Laboratory for Soil and Agroecology, Novi Sad, Serbia	<b>POTENTIALLY TOXIC ELEMENTS (PTEs) IN SOIL</b>
10:50-11:00	<b>High-end Dialogue</b>	
11:00-11:15	<i>Coffee break</i>	
<i>Creating sustainable transfer of knowledge and technology</i> <b>-PLENARY LECTURES-</b>		
11:15-11:30	<b>Vasko Zlatkovski</b> Technology Transfer Office, Goce Delčev University, Štip, Republic of North Macedonia	<b>OPENING NEW POSSIBILITIES FOR UNIVERSITY’S GOCE DELČEV STUDENTS AND RESEARCHERS</b>
11:30-11:45	<b>Alen Mujčinović</b> University of Sarajevo, Faculty of Agricultural and Food Sciences, Sarajevo, Bosna and Hercegovina	<b>QUEST FOR INNOVATIVE KNOWLEDGE TRANSFER</b>
11:45-12:00	<b>Radomir Ljupkovich</b> Department of Chemistry, Faculty of Science and Mathematics, University of Niš, Serbia	<b>CONSTRUCTION WASTE AS POTENTIAL CATALYST FOR BIODIESEL PRODUCTION</b>
12:00-12:15	<b>Violeta Ivanova-Petropulos</b> Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia	<b>LIFE CYCLE ENVIRONMENTAL IMPACTS OF VITICULTURE AND WINE INDUSTRY</b>



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12:15-12:30	<b>Arianit Reka</b> State University of Tetovo, Republic of North Macedonia	<b>HYDROTHERMAL TECHNOLOGY vs “CLASSICAL” TECHNOLOGY-ENVIRONMENTAL BENEFITS IN THE PRODUCTION OF POROUS CERAMICS</b>
12:30-12:40	<b>High-end Dialogue</b>	
12:40-13:30	<i>Lunch break, University lunch bar (First Floor-Campus 2)</i>	
<b>ENVIRONMENTAL PROTECTION: critical issues concerning at national and regional scale</b>  <b>-PLENARY LECTURES-</b>		
13:30-13:45	<b>Ljupčo Mihajlov</b> Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia	<b>SELECTED EXCERPTS FROM PUBLISHED RESEARCH DATA AND PUBLICATIONS RELATED TO ENVIRONMENTAL PROTECTION</b>
13:45-14:00	<b>Fidanka Trajkova</b> Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia	<b>AGROCHEMICAL SOIL PROPERTIES AS A KEY FACTOR FOR HIGH YIELDS AND ENVIRONMENTAL PROTECTION</b>
14:00-14:15	<b>Biljana Kovachevik</b> Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia	<b>THE IMPACT OF AGRICULTURE ACTIVITIES ON GROUNDWATER QUALITY</b>
14:15-14:30	<b>Violeta Stefanova</b> Faculty of Natural and Technical Sciences, Goce Delčev University, Štip, Republic of North Macedonia	<b>GOLD IN MACEDONIA-REALITY, OPPORTUNITIES, PERSPECTIVES</b>
14:30-14:45	<b>Emilija Arsov</b> Department for Plant and Environment Protection, Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia	<b>IMPLEMENTATION OF ACCREDITATION METHOD IN UNILAB LABORATORY, FOR HEALTHY LIFE AND ENVIRONMENTAL PROTECTION</b>
14:45-14:50	<b>High-end Dialogue</b>	
14:50-15:00	<i>Coffee break</i>	
15:00-16:30	<b>Students presentations</b> <b>Oral presentation + e-posters</b> (Hall Campus 2)	

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16:30-18:30	<p align="center"><b>Students workshop</b></p> <p align="center"><b>“Eliminate &amp; Minimize &amp; Hazards &amp; Pollution”</b></p> <p align="center">Laboratory for Environmental Chemistry (Part 1)</p> 
<i>19:00</i>	<i>Dinner -Hotel Izgrev</i>
<p><b>October 30<sup>th</sup>, 2019 (Wednesday)</b></p> <p>Faculty of Agriculture, Campus for Natural, Technical and Biotechnical Sciences, Goce Delčev University, Republic of North Macedonia</p>	
09:00-10:00	<p align="center"><b>Students workshop</b></p> <p align="center"><b>“Eliminate &amp; Minimize &amp; Hazards &amp; Pollution”</b></p> <p align="center">Laboratory for Environmental Chemistry (Part 2)</p> 
10:00-10:10	Summary event conclusions and perspectives (Hall-Campus 2)
10:10-10:30	Closing remarks and generating new project proposal ideas
10:30 -10:40	<i>Coffee break</i>
10:40-11:00	Certificate awards for participation
11:00-11:20	Awarding the best student presentations
11:20-12:00	Student event evaluation (SWOT)
12:00-12:30	WBAA meeting- Closing remarks
<i>12:40-13:30</i>	<i>Lunch break – Hotel Izgrev</i>
<i>14:00</i>	<i>Departure</i>



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# PLENARY LECTURES





## **PL 15**

### **IMPLEMENTATION OF ACCREDITATION METHOD IN UNILAB LABORATORY, FOR HEALTHY LIFE AND ENVIRONMENTAL PROTECTION**

**Emilija Arsov, Sasa Mitrev**

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Faculty of Agriculture, Department for Plant and Environment Protection, Goce Delčev University, Štip, Republic of North Macedonia

*UNILAB laboratory* as a part of the Faculty of Agriculture, under Goce Delcev University – Štip, Republic of North Macedonia, implements different laboratory tests, aiming at the improvement of the quality and quantity of the agricultural production and increasing the competitiveness of the domestic production at international level. The laboratory implements different agrochemical analyses of soil together with giving advice on the plant fertilization and nutrition; determination of micro and macroelements, heavy metals, trace elements and pesticide residues in different media such as soil, water and plant material, determination of the active substances of pesticides, the presence of certain nutrients in fertilizers, analysis of the quality of seeds and seedlings, determination of genetically modified organisms, determination and identification of the presence of plant diseases and pests of plants and stored agricultural products, determination of the biological efficacy of pesticides, qualitative and quantitative determination of the presence of mycotoxins of plant products. Total number of accreditation methods is around 45. *UNILAB laboratory* functioned as a separate organizational unit that operates under the legislative regulation, legislative acts and standards, as follow: • *The Law of higher education*, • *The Law of accreditation*, • *The Standard MKC EN ISO/IEC 17025:2018*. The laboratory is responsible for all tests implemented in accordance with the international standards, methods, rules, beneficiary needs and legislative regulation.

The future of healthy life, production of good and quality food and environmental protection can be done just with good laboratory practice – accreditation method of work implement in UNILAB laboratory (<http://unilab.mk/en/index.html>)

**Keywords:** accreditation methods, *UNILAB laboratory*, healthy life, environmental protection.

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