

2nd SCIENTIFIC CONFERENCE

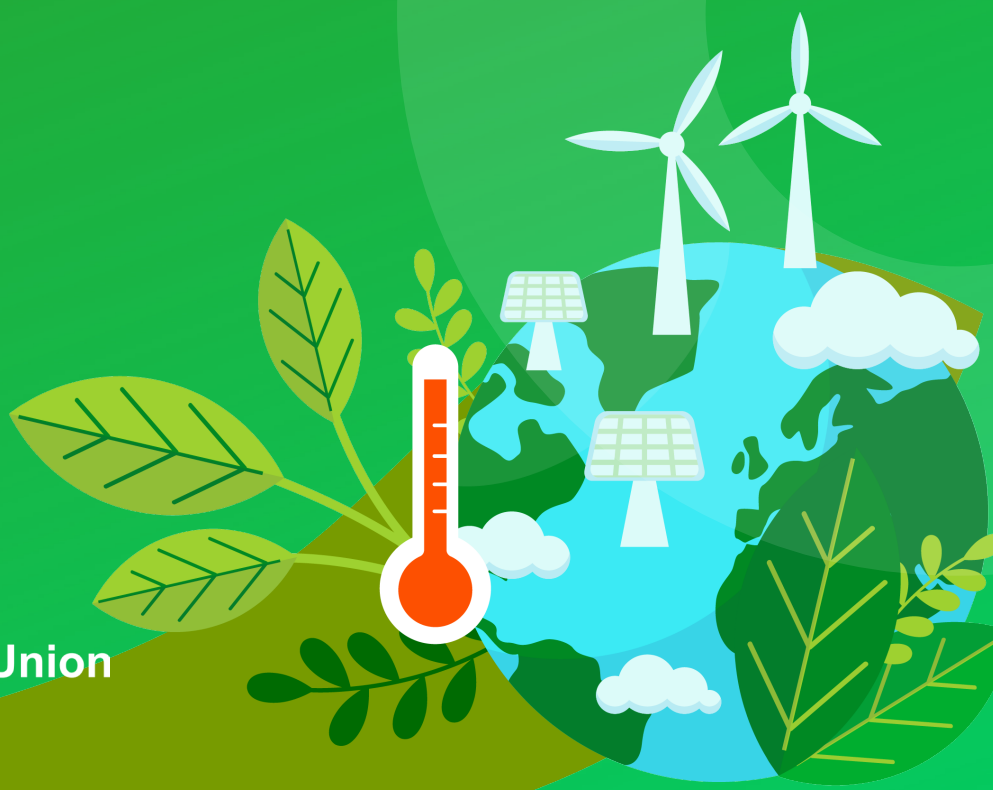
**FOR CRITICAL ENVIRONMENTAL ISSUES OF
THE WESTERN BALKAN COUNTRIES**

BOOK OF ABSTRACTS

October 28th to 30th, 2021, Faculty of Agriculture, Goce Delčev University, Štip,
Republic of North Macedonia



Funded by
the European Union



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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 and financed within the project titled “Extracting Green-COVID effects for generating clean technologies and successful youth transition awareness for the climate change and sustainable development of the Western Balkan countries”, **project number 2021030, financed by Western Balkans Alumni Association.**

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WELCOME

On behalf of the project coordinators of

“Extracting Green-COVID effects for generating clean technologies and successful youth transition awareness for the climate change and sustainable development of the Western Balkan countries”

Project number 2021030

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 chemi-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 chemi-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 and 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. Ss. Cyril and Methodius University in Skopje and University in Tetovo and St. Kliment Ohridski University - Bitola). 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 chemi-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). Three national universities (Ss. Cyril and Methodius University in Skopje, State University in Tetovo and St. Kliment Ohridski University - Bitola) will participate with one scientific expert and three students. Goce Delčev University will participate with scientific experts, young researchers and students. 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 chemimetric 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).

Assoc. 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/>

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October 28th to 30th, 2021, Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

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Biljana Balabanova - Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

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Jordana Ninkov - Institute of Field and Vegetable Crops, Laboratory for Soil and Agroecology, Novi Sad, Serbia.

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Biljana Balabanova, Associate Professor at Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

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SCIENTIFIC PROGRAM		
October 28 th , 2021 (Thursday) Time: 12:00-16:00, Registration for regional participants (Faculty of Agriculture, Campus 2)		
16:00-16:15	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	Regional experts meeting Problems and challenges facing each country; Introduction and proposal of new and beneficial chemi- metric tools for environmental pollution; Proposal of “environmentally friendly tools” for reduction of toxic effect of pollutants and hazards.	Students/young participants meeting Introduction of regional and national participants; Presentation of environmental issues from each country; Generation of new proposal ideas; Creation sustainable cooperations.
19:00	Welcoming dinner (Hotel Izgrev hall)	
October 29 th , 2021 (Friday) Time: 08:00-09:00, Registration for national participants (Faculty of Agriculture, Campus 2)		
09:00-9:15	OPENING CEREMONY (HALL CAMPUS 2)	
	Moderator's Introduction speech	
	Dean of the Faculty of Agriculture, Prof. Ljupco Mihajlov / Vice dean Assoc. prof. Emilija Arsov	
	Project coordinator introduction: Assoc. prof. Biljana Balabanova	
	WBAA representative/ Kiril Jordanov	
ENVIRONMENTAL POLLUTION: critical issues concerning at national and regional scale - PLENARY LECTURES - Chairwoman Assoc. prof. Biljana Balabanova		
09:15-09:30	Trajče Stafilov Faculty of Natural Sciences and Mathematics, Institute of Chemistry, Ss. Cyril and Methodius , Skopje, Republic of North Macedonia	GEOCHEMISTRY OF MAJOR AND TRACE ELEMENTS IN SOILS OF THE REPUBLIC OF NORTH MACEDONIA
09:30-09:45	Musaj Pacarizi University of Pristina, Department of Chemistry, Pristina, Kosovo	DETERMINATION AND STATISTICAL ANALYSIS OF THE ATMOSPHERIC DEPOSIT OF ELEMENTS IN KOSOVO THROUGH MOSSES AS BIOMONITORS
09:45-10:00	Panvera Lazo University of Tirana, Department of Chemistry, Tirana, Albania	STUDY OF AIR QUALITY BY MOSS BIOMONITORING AND TRACE ELEMENTS CONTENT
	High-end Dialogue	
10:00-10:30	Coffee break	

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<i>Creating sustainable transfer of knowledge and technology</i> - PLENARY LECTURES - <i>Chairwoman Assist. prof. Biljana Balabanova</i>		
10:30-10:45	Stanko Milić Institute of Field and Vegetable Crops, Laboratory for Soil and Agroecology, Novi Sad, Serbia	SOIL CHARACTERISTICS OF PLUM ORCHARDS WITH INDICATION OF GEOGRAPHICAL ORIGIN
10:45-11:00	Radomir Ljupkovich Department of Chemistry, Faculty of Science and Mathematics, University of Niš, Serbia	COMPOSITES OF GRAPHENE-OXIDE AND TITANIA AS PROMISING PHOTOCATALYSTS FOR ORGANIC POLLUTANTS DEGRADATION
11:00-11:15	Flamur Sopaj Chemistry Department of Natural Sciences Faculty, University of Prishtina, Kosovo	FENTON AND ELECTRO- FENTON ADVANCED OXIDATION PROCESSES FOR ORGANIC POLLUTANTS REMOVAL FROM POLLUTED WATERS
	High-end Dialogue	
11:20-12:20	POSTER SESION – PART 1	
12:30-13:30	<i>Lunch break, University lunch bar (First Floor-Campus 2)</i>	
	<i>ENVIRONMENTAL PROTECTION: critical issues concerning at national and regional scale</i> <i>Chairwoman Assoc. prof. Natalija Markova-Ruzdik</i>	
13:30-13:45	Alen Mujčinović University of Sarajevo, Faculty of Agricultural and Food Sciences, Sarajevo, Bosnia and Herzegovina	INTRODUCING CLIMATE OPTIMIZED PRODUCTION OPPORTUNITIES FOR WESTERN BALKAN ECONOMIES
13:45-14:00	Elena Doneva Faculty of Natural and Technical Sciences, Goce Delcev University, Štip, North Macedonia (students' oral presentation)	INDOOR AIR QUALITY IN HOMES USING BIOMASS FOR HEATING AND COOKING
14:00-14:15	Kristina Panev UNILAB, Faculty of Agriculture, Goce Delcev University, Štip, North Macedonia (students' oral presentation)	DETERMINATION OF CHLOROPHYLL IN A WATER SAMPLE
	High-end Dialogue	
14:15-14:30	Filip Andonovski Some practical aspects: “SOLAR HEATER AND AIR PURIFIER” AGRO SOLAR	
14:40-15:00	<i>Coffee break</i>	
15:00-16:30	POSTER SESION Part 2	
16:30-17:00	Experts' meeting-evaluation of poster presentations	
17:00-18:30	Students workshop “Eliminate & Minimize & Hazards & Pollution” Laboratory for Environmental Chemistry (Part 1)	



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19:00	<i>Dinner -Hotel Izgrev</i>
October 30th, 2021 (Saturday) Faculty of Agriculture, Campus for Natural, Technical and Biotechnical Sciences, Goce Delčev University, Republic of North Macedonia	
09:00-10:00	Students workshop “Eliminate & Minimize & Hazards & Pollution” Laboratory for Environmental Chemistry (Part 2) 
10:00-10:10	Summary event conclusions and perspectives (Hall-Campus 2)
10:10-10:30	Closing remarks and generation of 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
12:40-13:30	<i>Lunch break – Hotel Izgrev</i>
14:00	<i>Departure</i>

Protocols for COVID safe conditions will be in accordance and within the published decision on preventive recommendations, interim measures, follow-up measures, purposeful protocols, plans and algorithms for action to protect the health of the population from the infectious disease COVID-19 caused by the SARS-CoV-2 virus, the cases and the period of their application, published on 15.10.2021 in the Official Gazette No. 234/21, Republic of North Macedonia.

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REGIONAL WASTE MANAGEMENT IN REPUBLIC OF NORTH MACEDONIA: CASE STUDY FOR EAST AND NORTH-EAST PLANNING REGION

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Abstract

Solid waste management remains an issue of significant importance for the Republic of North Macedonia, especially in a period when the country makes significant steps towards EU approximation. Despite harmonized national legislation, very little has been accomplished to comply with numerous EU Directives or Regulations, especially with Wastes Framework Directive (98/2008), which sets a series of very ambitious targets. The current system for waste management in the Republic of North Macedonia is primarily focusing on waste collection and disposal. Regular waste collection services are mainly limited to urban areas, providing up to 90% coverage in the cities and their outskirts. The National Waste Management Strategy foresees establishment of 5-7 regional landfills according to EU standards.

Waste management services in the East and North-East region, do not comply with national and international regulations now. They are incomplete, contain only inefficient waste collection and poorly controlled or uncontrolled landfill, without source separation schemes as defined in EU waste directives. East Region includes 11 municipalities, with 9 non-standard municipal landfills and around 70 dump sites, while North-East region includes 6 municipalities with 5 non-standard municipal landfills and around 40 dump sites. The total amount of generated municipal waste in Republic of North Macedonia in 2020 was 913 033 tonnes; the annual amount of municipal waste was 452 kg per person. Most of the collected municipal waste (99.8%) is landfilling.

In 2009, the Government adopted a Decision to establish integrated waste management system in the East and North-East region through public financing, while in 2019, was decided to be formed regional company for waste management in East, North-East planning region and Municipality of Sveti Nikole. The location of regional landfill will be on a hilly part, above the Ovchepole valley, 15 km Northeast of the Sveti Nikole, near the village Meckuevci. Within regional landfill following facilities for waste treatment will be established: mechanical-biological treatment (MBT), bio-stabilization, materials recovery (MRF) and small composting facility. New regional landfill should be built until 2025 with capacity of about 47000 t/year. This paper analyzes the benefits in terms of quality of life and environmental impact after the construction of the regional landfill for the East and North-East region.

Keywords: dump site, non-standard landfill, Sveti Nikole, Meckuevci, waste treatment