



**VI INTERNATIONAL SCIENTIFIC CONFERENCE  
CONSERVING SOILS AND WATER**

# PROGRAM

**ORGANIZER:**

SCIENTIFIC -TECHNICAL UNION OF MECHANICAL ENGINEERING

*25.08. – 28.08.2021  
BOROVETS, BULGARIA*

# PROGRAM

## 23.08.2021 (MONDAY)

	<b>PUBLICATION OF ALL REPORTS</b>	
17:00	Conference Proceedings "International Scientific Conference "Conserving Soils And Water" ISSN (PRINT) 2535-0234, ISSN (ONLINE) 2535-0242	<a href="http://www.conserving-soils.eu">www.conserving-soils.eu</a>

## 25.08.2021 (WEDNESDAY)

16:00 – 20:00	REGISTRATION	IN FRONT OF THE CONFERENCE HALL
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## 26.08.2021 (THURSDAY)

08:00 – 10:00	REGISTRATION	IN FRONT OF THE CONFERENCE HALL
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<b>CONFERENCE HALL</b>		
10:00 – 10:10	OPENING OF THE CONFERENCE	
10:10 – 12:30	<b>PLENARY SESSION</b>	
12:30	COLLECTIVE PICTURES OF THE PARTICIPANTS	INFRONT OF THE HOTEL

## 12:30 - 14:00 LUNCH BREAK

<b>CONFERENCE HALL</b>		
14:00 – 15:15	SESSION "SOIL & WATER" SESSION "MACHINES AND TECHNOLOGY & MANAGEMENT"	

15:15 – 17:30	<b>COFFEE BREAK - THE RESTAURANT OF HOTEL "ELA" DISCUSSIONS</b>	
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19:30 – 24:00	<b>"WELCOME" COCKTAIL - THE RESTAURANT OF HOTEL "ELA"</b>	
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## 27.08.2021 (FRIDAY)

10:00	<b>CLOSING OF THE CONFERENCE</b>	CONFERENCE HALL
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## CORRESPONDENT PARTICIPATION

### 26.08.2021 (THURSDAY)

10:00	OPENING OF THE CONFERENCE	<a href="http://www.conserving-soils.eu">http://www.conserving-soils.eu</a>
10:00-16:00	QUESTIONS TO THE AUTHORS OF ALL REPORTS	<a href="mailto:office@conserving-soils.eu">office@conserving-soils.eu</a>
16:00	PUBLICATION OF ALL QUESTIONS	<a href="http://www.conserving-soils.eu">http://www.conserving-soils.eu</a>

### 27.06.2021 (FRIDAY)

08:00-12:00	ANSWER THE QUESTIONS	<a href="mailto:office@conserving-soils.eu">office@conserving-soils.eu</a>
12:00	PUBLICATION OF ALL ANSWER	<a href="http://www.conserving-soils.eu">http://www.conserving-soils.eu</a>
17:00	CLOSING OF THE CONFERENCE	<a href="http://www.conserving-soils.eu">http://www.conserving-soils.eu</a>

# SCIENTIFIC PROGRAM

26.08.2021 10:00 – 10:10	<b>OPENING OF THE CONFERENCE</b>	CONFERENCE HALL
	<i>CHAIRMAN: PROF. DR. MIHO MIHOV</i>	

26.08.2021 10:10 – 12:30	<b>PLENARY SESSION</b>	CONFERENCE HALL
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<b>CHAIRMAN: PROF. DR. GALINA NIKOLCHEVA (BG)</b>				
1	HOW DO MANAGE WATER RESOURCES MORE PRODUCTIVE IN WATER SCANT AGRO-ZONES?	Bilal Acar, Bilal Ata, Harun Dinç Faculty of Agriculture, University of Selcuk, Konya	02	TR
2	ADVANTAGES AND VISION FOR THE BULGARIAN ECONOMY IN RURAL AREAS AFTER 2021	Martin Banov <sup>1</sup> , Keranka Nedeva <sup>2</sup> , Nanyo Nanev <sup>3</sup> <sup>1</sup> Agricultural Academy, Sofia <sup>2</sup> Agricultural University Plovdiv <sup>3</sup> Institute of Agrarian Economics, Sofia	11	BG
3	GIS SUPPORT OF FORMING SPATIAL DECISIONS ON LAND USE	Antonina Moskalenko National University of Life and Environmental Science of Ukraine – Kyiv	08	UA
4	INFLUENCE OF UREASE INHIBITOR ON MINERAL NITROGEN CONTENT IN SOIL AND PRODUCTIVITY OF WINTER WHEAT	Poškus K. <sup>1</sup> , Dr. Brazienė Z. <sup>1</sup> , Prof. Dr. habil. Staugaitis G. <sup>1</sup> , Dr. Aleknavičienė L. <sup>2</sup> Lithuanian Research Centre for Agriculture and Forestry <sup>1</sup> , UAB "Agrodema" <sup>2</sup>	06	LT
5	ASSESSMENT OF VEGETATION ESTABLISHMENT ON DIFFERENT TAILINGS DEPOT AT AN IRON ORE-MINING SITE OF GOL-E-GOHAR, SIRJAN, IRAN, THREE YEARS AFTER DEPOT	Naseri H.R, PhD. <sup>1</sup> , Ahmadi Kohbanani, M. R. <sup>2</sup> ; Azizabadi Farahani, E. <sup>1</sup> ; Yazdanpanah Shahabadi, A. <sup>1</sup> International Desert Research Center, University of Tehran, Iran <sup>1</sup> Gol- e- Gohar Mining and Industrial Company, Sirjan, Iran <sup>2</sup>	16	IR
6	GIS OF CROP MONITORING REMOTE SENSING SYSTEM	Prof. dr. Kokhan S., PhD. Drozdovskyi O. National University of Life and Environmental Science of Ukraine – Kyiv	09	UA

12:30	COLLECTIVE PICTURES OF THE PARTICIPANTS	INFRONT OF THE HOTEL
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12:30 – 14:00	<b>LUNCH BREAK</b>
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26.08.2021 14:00 – 15:15	<b>SESSION "SOIL&amp;WATER"</b> <b>SESSION "MANAGEMENT"</b>	CONFERENCE HALL
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<b>CHAIRMAN: PROF. DR. MIHO MIHOV (BG)</b>				
7	THE NEW VISION FOR RURAL AREAS CONNECTED, RESILIENT AND PROSPEROUS	Assoc. Prof. Dr. Keranka Nedeva Agricultural University Plovdiv	10	BG

8	MICROBIOLOGICAL PROPERTIES OF ALUVIAL-MEADOW SOIL	Dr. Yonita Perfanova Institute of Soil Science, Agricultural Technologies and Plant Protection «N. Pushkarov», Sofia	13	BG
9	MANAGEMENT OF FOREST AREAS AROUND THE WATER SOURCES IN BULGARIA	Nevena Shuleva, Ralitsa Peycheva University of Forestry, Sofia	17	BG

15:15 – 17:30	<b>COFFEE BREAK - THE RESTAURANT OF HOTEL "ELA" DISCUSSIONS</b>
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19:30 – 24:00	<b>“WELCOME” COCKTAIL - THE RESTAURANT OF HOTEL "ELA"</b>
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### CORRESPONDENT PARTICIPATION

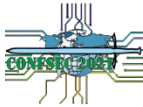
THURSDAY (26.08)	09:00 – 18:00	SESSION “SOIL&WATER” “MACHINES AND TECHNOLOGY & MANAGEMENT”	CONFERENCE HALL	
FRIDAY (27.08)	09:00 – 17:00			
10	AGRO-ECOLOGICAL POTENTIAL OF THE COUNTRY IN RELATION TO AVERAGE YIELD AND CORN PRODUCTION	Dr. Rositsa Mikova Institute of Agrarian Economics, Sofia	05	BG
11	ANALYSIS OF CLIMATIC VARIATIONS AND THE ABILITY OF ORGANIC FARMING SYSTEMS TO ADAPT TO CLIMATE CHANGE IN THE NORTHERN WESTERN LOWLANDS - SHKODRA AREA IN ALBANIA	Adrian Doko <sup>1*</sup> , Ada Fyshku <sup>2</sup> , Simir Krasniqi <sup>3</sup> , Adri Erebara <sup>1</sup> Albert Kopali <sup>1</sup> <sup>1</sup> Department of Agro-environment and Ecology, Agricultural University of Tirana, Albania <sup>2</sup> Department of Agronomic Science, Agricultural University of Tirana, Albania <sup>3</sup> Department of Vocational Education, Prizren, Kosovo	07	AL KO
12	DIGITAL PENETROMETER S600 AS A TOOL FOR MONITORING SOIL COMPACTION	Oleksii Derkach, Viktor Aulin, Dmytro Makarenko, Yevhen Muranov, Andrii Hrynkiv, Vladyslava Derkach Dnipro State Agrarian and Economics University	12	UA
13	DEVELOPMENT IN THE EDUCATIONAL PROCESS AND RESEARCH AND PRODUCTION ACTIVITY OF MODERN TECHNOLOGIES AND TECHNICAL MEANS OF FIELD IRRIGATION	Assoc.Prof. Dr. Viktor Pryshliak Prof., Corr. Member Vasyl Kurylo Vinnytsia National Agricultural University	14	UA
14	SURFACE MODIFIED SILICA GELS AND AN EXPRESS METHOD FOR DETERMINATION OF THEIR SPECIFIC SURFACE AREA	Kamelia Ruskova <sup>1</sup> Liliya Manoilova <sup>2</sup> <sup>1</sup> Technical University of Sofia, <sup>2</sup> University of Chemical Technology and Metallurgy, Sofia	17	BG
15	INFLUENCE OF THE IRRIGATION REGIME ON THE YIELDS OF TOMATOES AND GREEN BEANS IN OPEN AREAS, WITH SPRINKLER IRRIGATION	R.Kireva, M.Mihov - Institute for Soil Science, Agrotechnology and Plant Protection “N.Pushkarov”, Sofia	18	BG
16	METHODICAL APPROACH FOR ASSESSING THE QUALITY OF STORAGE OF GRAIN HARVESTERS	M Mihov - Institute of Soil Science, Agricultural Technologies and Plant Protection «N. Pushkarov»,	19	BG



VII INTERNATIONAL SCIENTIFIC CONFERENCE  
**MATERIAL SCIENCE.**  
**NONEQUILIBRIUM PHASE TRANSFORMATIONS 2021**  
06-09.09.2021, VARNA, HOTEL AQUA AZUR  
[www.material-science.eu](http://www.material-science.eu)



XVIII INTERNATIONAL SCIENTIFIC CONGRESS - SUMMER SESSION  
**MACHINES. TECHNOLOGIES. MATERIALS 2021**  
08-11.09.2021, VARNA, HOTEL AQUA AZUR  
[www.mtmcongress.com](http://www.mtmcongress.com)



V INTERNATIONAL SCIENTIFIC CONFERENCE  
**CONFSEC 2021**  
06-09.12.2021, BOROEVETS, HOTEL ELA  
[www.confsec.eu](http://www.confsec.eu)



VI INTERNATIONAL SCIENTIFIC CONFERENCE - WINTER SESSION  
**INDUSTRY 4.0**  
08-11.12.2021, BOROEVETS, HOTEL ELA  
[www.industry-4.eu](http://www.industry-4.eu)



V INTERNATIONAL SCIENTIFIC CONFERENCE  
**MATHEMATICAL MODELING**  
08-11.12.2021, BOROEVETS, HOTEL ELA  
[www.mathmodel.eu](http://www.mathmodel.eu)



VII INTERNATIONAL SCIENTIFIC CONFERENCE  
**HIGH TECHNOLOGIES. BUSINESS. SOCIETY 2022**  
07-10.03.2022, BOROEVETS, HOTEL ELA  
[www.hightechsociety.eu](http://www.hightechsociety.eu)



XV CONFERENCE FOR YOUNG RESEARCHERS  
**TECHNICAL SCIENCES. INDUSTRIAL MANAGEMENT 2022**  
09-12.03.2022, BOROEVETS, HOTEL ELA  
[www.youngconference.com](http://www.youngconference.com)



XIX INTERNATIONAL SCIENTIFIC CONGRESS - WINTER SESSION  
**MACHINES. TECHNOLOGIES. MATERIALS 2022**  
09-12.03.2022, BOROEVETS, HOTEL ELA  
[www.mtmcongress.com](http://www.mtmcongress.com)



XXVIII INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCE  
**FOUNDRY 2022**  
20-22.04.2022, PLEVEN, HOTEL ROSTOV  
[www.metalcasting.eu](http://www.metalcasting.eu)



X INTERNATIONAL SCIENTIFIC CONFERENCE  
**ENGINEERING. TECHNOLOGIES. EDUCATION. SECURITY 2022**  
06-09.06.2022, BOROEVETS, HOTEL ELA  
[www.techtos.net](http://www.techtos.net)

## **Доповідь**

# ***DEVELOPMENT IN THE EDUCATIONAL PROCESS AND RESEARCH AND PRODUCTION ACTIVITY OF MODERN TECHNOLOGIES AND TECHNICAL MEANS OF FIELD IRRIGATION***

**Курило В.Л.**

There is a systematic approach to the development of modern technologies and technical means of irrigation for the sustainable development of agricultural production, obtaining quality products, preserving the fertility of lands, fauna and flora that inhabit it with important conceptual tasks of the educational process and research and production activities. Current strategic issues include: the formation of water policy in Ukraine in view of the availability of water resources and the development of adaptation measures in the context of climate change; development of conceptual bases of restoration and development of irrigation and drainage in Ukraine. And also - water resources of Ukraine and modern methods of research of aquatic ecosystems; scientific bases of formation of sustainable bioenergy agroecosystems; system of laboratory diagnostics of water-physical properties of soils; scientific and methodological bases of organization and conduct of ecological and reclamation monitoring; water and ecological risks of transformation of reclaimed lands and ways of their minimization; information technologies in scientific research in the field of agricultural reclamation, etc. Important issues in the development of modern technologies and technical means of irrigation also include: conceptual principles of irrigation management; features of designing irrigation systems; method of setting watering dates - the basis of irrigation regimes; use of the method "Penman-Monteith" for irrigation management; irrigation management based on phytomonitoring; use of remote sensing data for irrigation control; Irrigation management information system "Irrigation online"; operation of irrigation systems; technologies of repair and restoration works on hydraulic structures of irrigation systems, etc.

The formation of water policy in Ukraine, water supply and adaptation measures in the context of climate change are important issues of reclamation measures in agro-industrial production. As you know, land reclamation is the science of ways and methods of land improvement in order to increase their fertility and create optimal conditions for growth

and development of crops. In this regard, it is necessary to reconsider the conceptual principles of irrigation systems management, some restoration and development of technical means of water regime optimization, to increase the quality of agro-industrial production, professionally competent agro-engineering personnel. The developed pedagogical technology of training of professional agroengineering personnel should provide continuity of educational process in the study of soil and water resources, their protection and preservation.

The main condition for the effective use of existing reclamation systems in Ukraine is to increase the productivity of reclaimed lands along with improving their ecological condition. This is emphasized in a number of state documents, namely: Presidential Decrees, Resolutions of the Verkhovna Rada, Laws of Ukraine. One of the main reasons for the weak dynamics of the revival of the domestic reclamation complex is the lack of qualified management and technological staff in the infrastructure that provides reclamation agriculture. Therefore, in the educational process these issues are given more and more attention. Reclamation agriculture is considered by scientists as a complex technology for sustainable development of production in the agricultural sector of the economy.

Modern technologies of training future agricultural engineers involve the study of problematic issues of soil and water resources. As noted in throughout the study period, students systematically study these topical issues. In lectures students receive information about the general theoretical features of the use of soil and water resources in agro-industrial production, and in practical and laboratory classes they study the mechanical and technological properties of soils, interaction with them of working machines, features of irrigation systems design.

. In the process of formation of professional competencies in the project activities of future agricultural engineers, during the research to optimize the parameters of the sprinkler positional action DDN-70 studied agrochemical, mechanical and other characteristics of agricultural materials. According to special methods, the main parameters of the sprinkler were calculated - irrigation radius  $R_d$ , nozzle pressure  $P$ , nozzle diameter  $d$ , watering time at one position  $t$ , distance between positions  $b$  and  $C$  - depending on soil moisture, type and phase of plant development.

In the educational process, the purpose of research is to expand and deepen the

knowledge of future agricultural engineers on the basics of theory, calculation and design of agricultural machinery, the formation of competencies on the interaction of working bodies with soil, irrigation systems and more. The purpose of the course and diploma design of work on agricultural machinery is the technological development of the design of the machine or its components or improvement of existing mechanization for irrigation, etc.

Future agricultural engineers should have a general understanding of erosion processes and prevent them from occurring. For example, soil erosion is the separation and movement of the upper most fertile soil layers from one place to another under the influence of water or wind. The process of water erosion consists of three steps: 1) separation of soil particles; 2) soil transfer – movement of soil particles from the site of erosion; 3) deposition of soil particles in a new place. Water erosion is appearing mostly when the effect of rain is exacerbated by the action of water flows: rain drops are separated by soil particles, and their flows are swept away.

A particularly important scientific and production problem is the optimization of the nutrient and water regimes of the soil on the slopes. A number of scientific works are devoted to the features of soil preparation for sowing crops on sloping lands, optimization and management of technological processes in these conditions.

Many scientific conferences have addressed the issue of soil and water protection. For example, at the II International Scientific Conference "Protection of Soils and Water Resources", the report was presented – «The main components of studies and research of conserving soils and water in technologies of agroengineers training». This report partially discloses the scientific and methodological bases for soil and water exploration by future specialists in agroengineering in higher education institutions. Innovative pedagogical technology of development of project activity is developed in the form of a method of a consistent cross study of the material based on the objective relationship of disciplines and provides a qualitatively higher level of formation of professional competencies of agroengineers on the basis of preservation and even multiplication of natural resources.





SCIENTIFIC TECHNICAL UNION OF MECHANICAL  
ENGINEERING BULGARIA

AWARDS

A

**DIPLOMA**

FOR THE PARTICIPATION IN THE



VI INTERNATIONAL SCIENTIFIC CONFERENCE  
**CONSERVING SOILS AND WATER**

TO

*Dr. in Agriculture, Prof.  
Vasyl Kurylo*

FOR THE REPORT

SOIL AND WATER RESOURCES AS IMPORTANT OBJECTS AND PREREQUISITES FOR THE DESIGN  
OF AGRICULTURAL MACHINES AND THE FORMATION OF PROFESSIONAL COMPETENCIES OF  
AN AGRICULTURAL ENGINEER



*Prof. D.Sc. Eng. Georgi Popov*  
President of the Scientific-Technical Union of Mechanical Engineering

BURGAS, 28 - 31.08.2021

President of the Scientific-Technical Union of Mechanical Engineering