INTERNATIONAL SCIENTIFIC JOURNAL

MECHANIZATION IN AGRICULTURE & CONSERVING OF THE RESOURCES



Issue 2
2021

Year LXVII, ISSN print2603-3704, ISSN web 2603-3712

SCIENTIFIC TECHNICAL UNION OF MECHANICAL ENGINEERING
BULGARIAN ASSOCIATION OF MECHANIZATION IN AGRICULTURE

PUBLISHERS

SCIENTIFIC-TECHNICAL UNION OF MECHANICAL ENGINEERING "INDUSTRY-4.0"
BUGLARINA ASSOTIOATION OF AGRICULTURAL MACHINERY

ISSN (PRINT) 2603-3704, ISSN (ONLINE) 2603-3712

YEAR LXVII ISSUE 2 / 2021

EDITORIAL BOARD

Chief Editor: Prof. Dr. eng Miho Mihov
Responsible secretary: Corresp. Memb. Prof. D.Sc. Hristo Beloev

MEMBERS:
Acad. D.Sc. Jemal Katsitadze – Georgia
Acad. D.Sc. Sayakhat Nukeshev - Kazakhstan
Acad. D.Sc. Volodymyr Bulgakov – Ukraine
Acad. D.Sc.Valeriy Adamchuk – Ukraine
Prof. Abdullah Sessiz - Turkey
Prof. Abdulrahman Al-soqeer - Saudi Arabia
Prof. Alexander Tokarev - Russia
Prof. Alexey Vassilev - Russia
Assoc.Prof. Angel Trifonov - Bulgaria
Prof. Anupam Kumar Nema - India
Prof. Ayrat Valiev - Russia
Prof. Barbro Ulén - Sweden
Prof. Carmen Puia - Romania
Prof. Cheslav Vashkievich - Poland
Prof.Cumhur Aydinalp - Turkey
Prof. Daisuke Higaki - Japan
Prof. Davor Romic - Croatia
Prof. Domenico Pessina - Italy
Dr. Finn Plauborg - Denmark
Assoc.Prof. Ganka Baeva - Bulgaria
Assoc.Prof. Georgi Mitev - Bulgaria
Prof. Georgi Tassev - Bulgaria
Prof. Haiyan Huang - China
Prof. Hoang Thai Dai - Vietnam

MEMBERS:
Prof. Iliya Malinov - Bulgaria
Prof. PhD Iurie Melnic - Moldova
Assoc.Prof. Ivan Ivanov - Bulgaria
Prof. Jan Szczepaniak - Poland
Prof. Komil Muminov - Uzbekistan
Prof. Krassimira Georgieva - Bulgaria
Prof. Maja Manojlović - Serbia
Prof. Mihail Iliev - Bulgaria
Prof. Mohammad Salem Al-Hwaiti - Jordan
Prof. Papamichail Dimitris - Greece
Prof. Pavel Tlustos - Czech Republic
Prof. Plamen Kangalov - Bulgaria
Prof. Ralph Meissner - Germany
Prof. Rossen Ivanov - Bulgaria
Prof. Svetla Rousseva - Bulgaria
Prof. Tadeusz Pawłowski - Poland
Prof. Tamara Persikova - Belarus
Prof. Valentina Kundius - Russia
Prof. Wojciech Tanaś - Poland
Prof. Yerbol Sarkynov - Kazakhstan
Prof. Zdenko Tkach - Slovakia
Prof. Zinta Gaile - Latvia
Prof. Zivko Davchev - Macedonia

The journal "MECHANIZATION IN AGRICULTURE & CONSERVING OF THE RESOURCES " is continuer of the journals "Mechanized farming" (1948-1957), "Mechanization and electrification of agriculture" (1959-1980) and "Mechanization of agriculture " (1981-1991)

108, Rakovski Str., 1000 Sofia, Bulgaria
tel. (+359 2) 987 72 90, tel./fax (+359 2) 986 22 40,
office@stumejournals.com
WWW.STUMEJOURNALS.COM

C O N T E N T S

MECHANIZATION IN AGRICULTURE

Theory of vertical oscillations of a frontally mounted tops harvesting machine
Volodymyr Bulgakov, Yevhen Ihnatiev, Valerii Adamchuk, Vasil Mitkov, Vitaliy Movchan, Viktor Karapetrov 41

Research on reducing the impact of sloshing on the walls of a liquid manure tank of partially filled in a braking manoeuver
Gabriela Milian, Sorin-Ștefan Biriș, George Ipate, Valentin Vlăduț, Mihai Matache 47

Digital agriculture: the experience of ukraine
Derkach O.D., Mykhaylichenko Y.M., Makarenko D.O. 52

Evaluation of effects of biofuels blends on performance and emissions of diesel engine
Tomas Mickevič ius 57

Operational properties of diesel fuel with the addition of rapeseed oil esters
V. Tkachuk, Iu. Melnic, O. Rechun 61

Evaluation of the tire cross-section shape in relation with the traction force and traction efficiency of an agricultural tire
Radu Rosca, Petru Cârlescu, Ioan Țenu 64

CONSERVING OF THE RESOURCES

Study of the influence of the irrigation regime on the yield of short-fruited cucumbers grown in open areas under drip irrigation
Rumiana Kireva, Miho Mihov 68

Energy consumption and emissions of agricultural machinery for different arable land types
Ńimun Lončarević, Petar Ilinčić, Goran Ńagi, Zoran Lulić 71

Balkan endemic plants of Shutman Strict Nature Reserve in Kosovo - an inventory with chorological and life-form analyses
Haxhi Halilaj, Lirika Kupe, Xhavit Mala 75