



8th International Conference on Thermal Equipment, Renewable Energy and Rural Development

TE-RE-RD 2019

ORGANIZERS:

University "POLITEHNICA" of Bucharest
Faculty of Mechanical Engineering and Mechatronics -
Faculty of Biotechnical Systems Engineering -

**National Institute Of Research – Development For Machines And
Installations Designed To Agriculture And Food Industry – INMA**

Romanian Agricultural Mechanical Engineers Society – SIMAR

University Valahia of Targoviste

PROCEEDINGS

Editors:

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Târgoviște – Romania
06 June - 09 June 2019

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TE-RE-RD 2019

CONFERENCE PROGRAMME

Thursday, June 06 (CIC – UVT)	Friday, June 07 (CIC – UVT)	Saturday, June 08 (Hotel Nova)
14.00-16.00 Registration of participants	08.30-09.30 Registration of participants	09.00-12.00 Networking
16.00-16.30 Opening ceremony	09.30-11.00 Oral presentations "Sections 1, 2, 3"	12.00 Participants departure
16.30-18.30 Plenary session	11.00-11.30 Coffee break	
19.00-21.00 Welcome Cocktail (at Hotel Nova)	11.30-13.00 Oral presentations "Sections 1, 2, 3"	
	13.00-14.30 Lunch time	
	14.30-16.00 Oral presentations "Sections 1, 2, 3"	
	16.00-16.30 Coffee break	
	16.30-18.00 Oral presentations "Sections 1, 2, 3"	
	19.30-22.00 Conference dinner (at Hotel Nova)	

Conference Programme

Thursday, June 06

14.00-16.00

Registration of participants

CIC – UVT

16.00-16.30

Opening ceremony

Welcome address:

Prof.dr.ing. Lucian MIHAESCU, Chairman TE-RE-RD 2019

Associate-Professor dr. ing. Ioan Corneliu SALISTEANU, Vice-Rector of Univ. Valahia Targoviste

16.30-18.30

PLENARY SESSION

Red Room

1. M.F. Ștefănescu, A., Dobrovicescu, I.M. Prodea, N. Sporea, *The concept of sustainability applied to an industrial sludge deposit;*
2. A. Terziev, *Analysis of the possibilities of using reference wind measurements in the calculation of energy production from wind farms on low complex terrains;*
3. M.R. Oprescu, I. Voicea, I. Dumitru, I. Drăgan, C. Biolan, N. Ungureanu, E.A. Neagu, B. Norbert, D. Jaloba, V. Arsenoia, *Rain Use Efficiency in Southern Romania after Using the Device for Soil Modelling in Interrupted Furrows for Weeding Crops - DMBC-5;*
4. Gh. Lazaroiu, L. Mihaescu, I. Pișă, G.P. Negreanu, V. Berbece, E.A. Jarcu, L.A. Stanescu, *Conceptual matrix for the biofuels of the future applicable to the Romanian economy*
5. G. Ipate, G. Musuroi, G.-A. Constantin, B. Zabava, M. Pihurov, *Experimental and numerical simulation research of sedimentation process in stationary column of aqueous suspension of solids.*

19.00-21.00

Welcome Cocktail

(at Hotel Nova)

08.30-09.30
Registration of participants
CIC – UVT

Thermal Equipment

09.30-11.00

Blue Room

Chairmen:*Otilia Nedelcu and Iliya Iliev*

Presentation No.	Title	Authors	Start hour
1	Analysis and Optimization of a Piezoelectric Energy Harvester	BORZEA C. , Comeaga D.	9:30
2	Compressed Air Energy Storage Installation for Renewable Energy Generation	BORZEA C. , Vlăducă I., Ionescu D., Petrescu V., Niculescu F., Nechifor C., Vătăşelu G., Hanek M.	9.45
3	Study of the fire dynamics in a burning car and analysis of the possibilities for transfer of fire to a nearby vehicle	TERZIEV A.	10.00
4	Experimental research on a hot air generator working on the TLUD principle	PAVEL I. , Rădoi R., Matache G., Popescu A.-M. C., Caba I.	10.15
5	Waste-Energy (Heat) Recovery System from the Gases Compressed by an Oil-Free Screw Compressor	VLĂDUCĂ I. , Stanciu R., Bimbaşa R., Tomescu S. G.	10.30
6	Energy passivation of a building. The ICSTM building case study	NEDELICU O. , Salisteanu I. C., Ivanovici T., Dogaru V.	10.45

Renewable Energy

09.30-11.00

Red Room

Chairmen:*Carmen Safta and Viacheslav Antonenko*

Presentation No.	Title	Authors	Start hour
1	Usage of biomass CHP for balancing of power grid in Ukraine	EPIK O. , Zubenko V.	9:30
2	Biomass consumption in residential sector of Ukraine in 2007–2016	ANTONENKO V. , Levinska S.	9.45
3	The initiation stage of Food Court Waste during air versus steam gasification processes	TIRTEA R. N. , Bulmau C., Ionescu G., Marculescu C.	10.00
4	Experimental study of Food Court Waste air gasification process performances in a batch reactor	TIRTEA R. N. , Ionescu G., Cora Bulmau C., Marculescu C.	10.15
5	Fish Ladder Geometrical Sizes and Hydraulic Performances. Experimental Approach	PETICA C.-C. , Safta C.-A., Pincovschi I., Mandrea L.	10.30
6	Monitoring the State of Small Power Equipment	DRAGOMIRESCU A. , Carp-Ciocărdia C., Safta C.A., Oraşanu N., Mağhet I.	10.45

Rural Development

09.30-11.00

Green Room

Chairmen:*Valentin Vlăduţ and Iulian Voicea*

Presentation No.	Title	Authors	Start hour
1	Researches on the higher valuation of sugar beet pulp from sugar production to obtain premixes for animal feed	NAGY M. , Coţa C., Cioica N., Gyorgy Z., Deac T.	9:30
2	A review on phytoremediation as an ecological method for in situ clean up of heavy metals contaminated soils	CIOICA N. , Tudora C., Iuga D., Belc N., Deac G., Matei M., Nagy E. M., Gyorgy Z.	9.45
3	Researches on the capitalization of some medicinal plants to obtain essential oils by using the performant innovative installation EUV 2x1000 type	GRIGORE I. , Grigore A. I., Vlăduţoiu L., Cristea M., Sorică E., Dumitru D., Sîrbu F., Badea G., Grădilă M., Raischi M., Duţă D., Sandu R. A.	10.00
4	Researches on ecological weed control in vegetable crops	MUSCALU A. , Sorică C., Persu C., Andrei A.-M., Dorogan A., Tudora C.	10.15
5	Innovative technical equipment for weed control in leguminous crops	MARIN E. , Mateescu M., Rosca I., Andrei A.-M., Jinga V., Grădilă M.	10.30
6	Experimental research on influence of functional parameters of combined installations designed at separating the impurities out of cereal seeds	BRĂCĂCESCU C. , Ţenu I., Mircea C., Bunduchi G.	10.45

Thermal Equipment

11.30-13.00

Chairmen:

Constantin Pană and Alexandru Racovitza

Blue Room

Presentation No.	Title	Authors	Start hour
1	A research on fuelling a truck diesel engine with hydrogen	NUTU N. C. , Pana C., Negurescu N., Cernat A., Fuiiorescu D., Mirica I.	11:30
2	Waste Heat Recovery for a Diesel Tractor Engine: A Comparison Study	RADU B. , Racovitza A.	11.45
3	Influences of Using B20 Reformulated Type Fuel on a Heavy-Duty Diesel Engine Performances	RASHID A. K. , Radu B., Racovitza A., Chiriac R.	
4	Reduce deposits on heat exchange surfaces when burning inferior coal	BICA M. , Stoian A., Tutunea D., Calbureanu M.	12.15
5	Considerations on the combustion of biofuels in compression ignition engines	FAZAL U. M. Allah , Bica M., Gruia A., Tutunea D., Calbureanu M.	12.30
6	Some Aspects Of Cycle Variability At The Diesel Engine Fuelled With Animal Fats	NICOLICI A. , Pana C., Negurescu N., Cernat A., Nutu C.	12.45

Renewable Energy

11.30-13.00

Chairmen:

Penka Zlateva and Gheorghe Lazaroiu

Red Room

Presentation No.	Title	Authors	Start hour
1	Researches on the mixture limits of animal fats with liquid hydrocarbons for combustion at industrial level	BONDREA D. A. , Mihaescu L., Lazaroiu Ghe., Pisa I., Negreanu G.	11.30
2	Modelling and simulation of a wind energy system	ALIONTE C.-G. , Ungureanu L. M.	11.45
3	Noise assessment of the small-scale wind farm	ALIONTE C.-G. , Comeaga D.-C.	12.00
4	Determination of coefficient of performance of mechanical vapor recompression heat pump	VALCHEV S. , Nenov N., Georgiev V.	12.15
5	Optimization of biogas composition in experimental studies	DIMITROV R. , Ivanov Z., Zlateva P., Mihaylov V.	12.30
6	Experimental study of heat pump type air-water for heating system performance	ZLATEVA P. , Yordanov K.	12.45

Rural Development

11.30-13.00

Chairmen:

Valentin Vlăduț and Vitalii Zubenko

Green Room

Presentation No.	Title	Authors	Start hour
1	Modelling Behavior Of A Partially Loaded Road Tanker With Agri-Food Liquids During The Braking Maneuver	MILIAN G. , Biriș S-S,	11:30
2	Kinematic parameters determination of the drilling equipment designed to work in slope degraded terrains	VIȘAN A. L. , Bogdanof G. C., Milea D., Ciupercă R., Gheorghe G.	11.45
3	Utilization of the thermohydric stress in the psamosols area in southern Oltenia through the cowpea culture	DRAGHICI R. , Draghici I., Diaconu A., Croitoru M., Paraschiv A. N., Dima M., Constantinescu M.	12.00
4	Results on bioenergetic potential of some sweet sorghum hybrids cultivated under psamosols conditions in southern Oltenia	DRAGHICI I. , Draghici R., Diaconu A., Croitoru M., Paraschiv A. N., Dima M., Ciuciuc E., Ciuciuc D.	12.15
5	Researches on drying the clover through aeration to obtain hay	ZAICA Ana , Nedelcu A., Ciupercă R., Zaica Al., Vișan Alexandra-Liana	12.30
6	Aspects regarding FEM simulation of stress in hammer mill working tool	MOICEANU G. , Paraschiv G., Maican E., Dincă M., Găgeanu I., Arsenoia V. N.	12.45

Thermal Equipment

14.30-16.00

Blue Room

Chairmen:

Camelia Stanciu and Ion V. Ion

Presentation No.	Title	Authors	Start hour
1	CFD Simulation of forced heat transfer of gas in pipe	KOLEV Z., Kadirova S.	14:30
2	Numerical simulation of a phase change material melting process	STANCIU D., Stanciu C., Apostol V., Pop H.	14.45
3	Cogeneration plant with low enthalpy geothermal source	DRAGAN M., Ion I., Uzuneanu K.	15.00
4	Dew point temperature analyses in ground floor residential room with existing thermal bridge	IVANOV M.	15.15
5	Instantaneous field measurements of thermal bridge parameters in ground floor residential room	IVANOV M.	15.30
6	Irradiance characteristic of a small-scale solar simulator for testing thermal collectors	GHEORGHIAN A.-T., Apostol V., Prisecaru T., Stanciu C., Pop H.	15.45

Renewable Energy

14.30-16.00

Red Room

Chairmen:

Violeta Rasheva and Elena Pop

Presentation No.	Title	Authors	Start hour
1	Researches on obtaining vegetable oils as a source of alternative energy	GAGEANU P., Gageanu I., Bunduchi G., Zaica Al.	14:30
2	Greenhouse heating by using an installation of biomass gasification	LAZA E. A., Dumitrescu L., Boboc M., Moiceanu G., Cujbescu D.	14.45
3	Theoretical analysis of the dynamics of a nacelle drive system in order to optimize the system energy	DUMITRESCU L., Polifron Al., Cristescu C., Lepădatu I., Laza E.	15.00
4	Halloysite nanotube applications for heavy metals removal from wastewater	COVALIU C., Paraschiv G., Stoian O., Buzatu B., Mircea C., Cristea C.	15.15
5	Experiments in use of bentonite for energy recovery of used oils	DRAGNE M., Pop E., Covaliu C. I., Matei E., Pișă I.	15.30
6	Energy - Efficient Reconstruction of Public Lighting in Pravets Municipality from Bulgaria	KAMBUROVA V., Rasheva V., Velikanov M.	15.45

Rural Development

14.30-16.00

Green Room

Chairmen:

Sorică Cristian and Olan Mihai

Presentation No.	Title	Authors	Start hour
1	Researches on the accumulation and transfer of heavy metals in the soil in tomatoes - <i>Solanum lycopersicum</i>	NIȚUM., Pruteanu A., Bordean D., Apostol L., Popescu C., Deak G., Boboc M., Mustățea G.	14:30
2	Modelling by Finite Element Method of the twin-screw of a press for obtaining grape seed oil	VASILACHI C., Biriș S. S.	14.45
3	Researches on the freezing of blueberries and green bean pods using an experimental model of a fast freezing equipment	SORICA C., Vintilă M., Pirmă I., Grigore I., Cristea M., Vlăduțoiu L., Sorică E., Bălănescu Neacșu I., Grosu C., Raischi M.	15.00
4	Theoretical research on kinematic and constructive parameters of roller presses for sweet sorghum	OLAN M., Matei Ghe., Apostol L., Jinga V., Lipianu S., Găgeanu P., Zaica A., Voicea I., Găgeanu I., Cristea O.	15.15
5	Experimental results on the solid organic fertilizer machine MG 5	ȘTEFAN V., Sfiru R., Popa L.	15.30
6	Determination of extensibility for certain types of pretzels dough	MUNTEANU M. G., Voicu Gh., Ștefan E. M., Constantin G. A.	15.45

Thermal Equipment

16.30-18.00

Chairmen:

Ion Oprea and Krisztof Jesionek

Blue Room

Presentation No.	Title	Authors	Start hour
1	Determining the energy performance of a rotating machine for fluid flow	GIOVANI ROZA A., Almaslamani A., Tănase E. B., Băran N., Constantin M.	16:30
2	The use of heat pipes in fruit growing	GENBACH A., Jamankulova N., Iliev I.	16.45
3	An Overview of the Cost of Energy in District Heating Cogeneration Systems	OPREA I.	17.00
4	Problems of recycling plastics in the aspect of the gasification process	JESIONEK K., Wieczorkiewicz G., Rychlik M., Roszak R., Markowski J., Nowacki M., Olejniczak D., Wasiński K.	17.15
5	Performances of a Research CFR Octane Rating Unit Engine and Dacia Single Cylinder SI Engine Ignited by a LASER System	DONE B. G., Copae I.	17.30
6	Modelling and simulation of a waste sorting mechatronic system for multi-floor residential buildings	UNGUREANU L. M., Dugăeşescu I., Niculae E.	17.45

Renewable Energy

16.30-18.00

Chairmen:

Mircea Scripcariu and Ioan Caba

Red Room

Presentation No.	Title	Authors	Start hour
1	The Environmental Impact Reduction obtained by implementing an Energy Management System. The advantages of using Energy Management and Energy Savings Standards when performing Industrial Energy Audits	SCRIPCARIU M., Bitir-Istrate I.S., Gheorghiu C., Neniu A. M.	16:30
2	Demand-side Management Programs – A joint environmental protection action. Case study: The lighting system in the Campus of the University POLITEHNICA of Bucharest	SCRIPCARIU M., Bitir-Istrate I. S., Gheorghiu C., Pluteanu S., Neniu A. M.	16.45
3	Improving the composting of waste materials from agricultural farms, a step towards sustainable agriculture	CABA I., Bordean D., Matei Gh., Matei M., Pavel I., Grădilă M.	17.00
4	Contributions to the development of a methodology for determining the flow rate	PURECE C., Panaitescu V., Anghel-Chera I.	17.15
5	Transformer lifetime management by analyzing the content of furan and gas dissolved in oil	CHERA ANGHEL I. A., Gatman E.	17.30
6	Cost structure – an important indicator of innovation activity in agro-industrial complex (by the example of crop production)	VOIKU I., Varlamov G.	17.45

Rural Development

16.30-18.00

Chairmen:

Popa Lucreția and Moiceanu Georgiana

Green Room

Presentation No.	Title	Authors	Start hour
1	Structural and kinematic analysis of a shutter from monocoque trailer	POPA L., Moise Ștefan Iulian, Moise V., Tabără I., Ștefan V.	16:30
2	Drones and windbreaks	CÂRDEI P., Muraru S., Matache M.	16.45
3	A mathematical model for the accumulation of fatigue in bars subjected to lateral vibrations	CÂRDEI P., Sfîru Raluca, Muraru Vergil	17.00
4	Theoretical and experimental research on sowing rate optimization of grassland drills	MANEA D., Marin E., Mateescu M., Dumitrascu A.	17.15
5	Concaves influence on the milling process of cereal seeds in hammer mills	PAUN A., Stroescu Gh., Brăcăcescu C., Dumitru M., Olan M., Epure M.	17.30
6	Soil compaction under the wheel of a sprayer	UNGUREANU N., Vlăduț V., Cujbescu Dan	17.45
7	Structural analysis of deep soil loosening machine MAS-65	MATACHE M., Oprescu M., Dumitru D., Gheorghe G., Cujbescu D., Persu C.	
8	Heavy Metals Contamination Of The Soil – Water – Vegetables Chain In The Ilfov Region	MUSTĂȚEA G., Belc N., Ungureanu E. L., Lăcătușu R., Petre J., Pruteanu A.	
9	Cereal supply chain waste in the context of circular economy	BELC N., Mustățea G., Apostol L., Iorga S., Vlăduț V., Moșoiu C.	

19.30-22.00: **Conference dinner** (at Hotel Nova)