



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMÉ 2024

Plenary presentations

<i>Quadrupedal animal gait analysis</i> Dan B. Marghitu, Auburn University, SUA	10.30-11.00
<i>The Role of European Seaports in Supply Chain of Spare Parts for the Slovak Automotive Industry</i> Andrej David Universitatea Zilina Slovacia	11.00-11.30
<i>Innovative Robots and Technologies in Medicine</i> Doina Pisla, Technical University of Cluj-Napoca, Romania	12.20-12.50
<i>Industrial Engineering Highlights: From Computer-Aided Design to Additive Manufacturing</i> Tudor POTOP, CAD Works INTERNATIONAL	12.50-13.20



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMME 2024

Technical sections

SECTION I. AUTOMOTIVE		
Room: Mihai Eminescu		
Chairmen: ILIE DUMITRU and LAURENTIU RACILA		16.00-18.20
1	AIR QUALITY STUDY IN THE CORONAVIRUS PANDEMIC	
	<i>Marin BICĂ, Cristian-Florin PALIU, Ludmila SASS, Ileana-Diana NICOLAE</i>	16.00-16.20
2	ENHANCING SUSTAINABLE URBAN MOBILITY: A COMPREHENSIVE STUDY OF TRAFFIC MANAGEMENT IN PETROSANI	16.20-16.40
	<i>Aurelian NICOLA, Răzvan Bogdan ITU, Bogdan Ioan MARC, Alexandra SOICA, Gheorghe Bogdan URDEA, Maria-Isabela CAȘOTĂ</i>	
Coffee break		16.40-17.00
3	RESEARCH ON THE RELATIONSHIP BETWEEN PASSENGER VOLUME AND THE ENERGY EFFICIENCY OF ELECTRIC BUSES	17.00-17.20
	<i>Alexandru Constantin OPRICA, Nicoleta GENCĂRĂU, Laurențiu RACILĂ, Augustin CONSTANTINESCU, Ilie DUMITRU</i>	
4	APPLICATION OF A SYNTHETIC POWER INDICATOR METHOD TO QUANTIFY CHEMICAL POLLUTION IN MOTOR VEHICLES	17.20-17.40
	<i>Alexandru Constantin OPRICA, Nicoleta GENCĂRĂU, Lucian MATEI, Augustin CONSTANTINESCU, Ilie DUMITRU</i>	
5	REGARDING THE USE OF SPECIAL STAMPING DEVICES OBTAINED BY ELECTRICAL EROSION IN THE AUTOMOBILE INDUSTRY	17.40-18.00
	<i>Daniel POPESCU, Ionuț GEONEA</i>	
6	THE USE OF PWM SIGNAL IN AUTOMOTIVE APPLICATIONS	18.00-18.20
	<i>Dragoș TUTUNEA, Laurențiu RACILĂ</i>	
SECTION II. BIOMECHANICS		
Room: Nicolae Romanescu		
BIOMECHANICS II.1.		
Chairmen: NICOLAE DUMITRU and CRISTIAN COPILUSI		15.00-16.40
1	MANIPULATORS USED AS ENDOSCOPIC INSTRUMENTATIONS OF THE URINARY TRACT	15.00-15.20



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMME 2024

	<i>Ovidiu ANTONESCU, Viorica Velişcu, Ionuț Daniel Geonea, Păun ANTONESCU</i>	
2	HUMAN AND ROBOT FINGER KINEMATIC ANALYSIS USING WAVELET THEORY	15.20-15.40
	<i>Cosmin BERCEANU, Cristian CHIHAIA, Dan B. MARGHITU, Daniela TARNIȚĂ</i>	
3	EXPERIMENTAL EVALUATION OF THE EFFECT OF SHOULDER POSITION ON FOREARM PRONATION AND SUPINATION MOVEMENTS	15.40-16.00
	<i>Cristian-Emilian CHIHAIA, Gabriela MARINACHE, Elena-Anca ALBU, Marius TEODORESCU, Daniela TARNIȚĂ</i>	
4	ASSISTIVE DEVICES FOR HUMAN LOCOMOTION ASSISTANCE AND REHABILITATION AT FACULTY OF MECHANICS – UNIVERSITY OF CRAIOVA	16.00-16.20
	<i>Cristian COPILUȘI, Nicolae DUMITRU, Sorin DUMITRU, Ionuț GEONEA, Alexandru MARGINE</i>	
5	STRUCTURAL SYNTHESIS AND DYNAMIC ANALYSIS OF A NEW HUMAN LEG MOTION ASSISTANCE MECHANISM	16.20-16.40
	<i>Ionuț GEONEA, Nicolae DUMITRU, Alexandru MARGINE, Cristian COPILUȘI, Gabriela MARINACHE, Daniela TARNIȚĂ</i>	
Coffee break		16.40-17.00
BIOMECHANICS II.2.		17.00-18.40
Chairmen: MISA STOJICEVIC and CRISTINA CAZACU		
1	THE CONCEPTUAL DESIGN OF A PARALLEL MECHANISM WITH 3 DEGREES OF FREEDOM FOR ROBOTIC ASSISTED MINIMALLY INVASIVE SURGERY	17.00-17.20
	<i>Alin HORSIA, Ionuț ZIMA, Damien CHABLAT, Călin VAIDA, Alexandru PUȘCĂ, Tiberiu ANTAL, Bogdan GHERMAN, Doina PÎSLA</i>	
2	EXPERIMENTAL INVESTIGATION OF THE PROPULSIVE FORCE IN TETHERED SWIMMING OF CRAWL STROKE	17.20-17.40
	<i>Mihnea MARIN, Ionuț GEONEA, Germina COSMA, Mihaela ACATRINEI</i>	
3	ANALYSIS OF SEAT TO HEAD TRANSMISSIBILITY OF VIBRATIONS FOR A TRACTOR DRIVER, ON AN UNEVEN LAND, BASED ON BIOMETRICS ACQUISITION SYSTEM	17.40-18.00
	<i>Teofil-Alin ONCESCU, Ștefan BOSTINĂ, Marius-Valentin VÎLCELEANU, Cristian CHIHAIA, Marius TEODORESCU, Cristian Bogdan ALBU, Ionuț GEONEA, Ilie DUMITRU, Daniela TARNIȚĂ</i>	



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMME 2024

4	A DESIGN OF SIX-BAR LINKAGE FOR TRAJECTORY REPLICATION		18.00-18.20
		<i>Misa STOJICEVIC, Branislav POPKONSTANTINOVIC, Zorana JELI, Mladen REGODIC</i>	
5	THE USE OF VIRTUAL DIRECT AND REVERSE ENGINEERING TECHNIQUES FOR THE RECONSTRUCTION OF AN ORTHODONTIC SYSTEM		18.20-18.40
		<i>Dragoş-Laurențiu POPA, Ionela Teodora DASCĂLU, Stelian Mihai Sever PETRESCU, Alina DUȚĂ, Daniela Doina VINTILĂ, Gabriel BUCIU</i>	
SECTION III. CIVIL ENGINEERING			
Room: Alexandru Piru			
CIVIL ENGINEERING III 1			
Chairmen: MADALINA CALBUREANU & DRAGOS POPA			15.00-16.20
1	ASPECTS OF THE MASSIVE MASONRY BEHAVIOR OF HERITAGE BUILDINGS UNDER VARIOUS FACTORS INVESTIGATED EXPERIMENTALLY		15.00-15.20
		<i>Anca Mihaela BARBU (MOGOȘANU), Mihai MARINACHE, Ramona Maria PINȚOI</i>	
2	MODELLING OF THE IMPROVEMENT OF LIVING CONDITIONS IN THE APARTMENT BLOCKS BUILT BEFORE 1989 AND REHABILITATION THROUGH THERMAL INSULATION, USING UBAKUS HEAT AND MASS TRANSFER THROUGH WALLS PROGRAM		15.20-15.40
		<i>Alina-Mariana CODIȚĂ, Mihai MARINACHE, Adriana STĂNCUȚ, Diana Mara CĂLBUREANU</i>	
3	THE IMPORTANCE OF USING APPROPRIATE MATERIALS WHEN RENOVATING OLD MASONRY BUILDINGS - CASE STUDY: CHURCH FROM THE END OF THE XIX-TH CENTURY		15.40-16.00
		<i>Alina-Mariana CODIȚĂ, Mihai MARINACHE, Adriana STĂNCUȚ, Adriana IONESCU</i>	
4	THE VALUE OF THE VISCOUS FLUID DAMPERS FORCE RELATIVE TO BUILDING HEIGHT		16.00-16.20
		<i>Adriana IONESCU, Mihai NEGRU, Veronica IORDAN, Alina CODIȚĂ, Liviu DINCĂ, Jenica-Ileana CORCĂU</i>	
			16.20-17.00
Coffee break			



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMME 2024

CIVIL ENGINEERING III 2		
Chairmen: MARIN BICA and ADRIANA IONESCU		
5	GREEN ROOFS FOR OFFICE BUILDINGS: BENEFITS TO MASS TRANSFER AND ENERGY EFFICIENCY	17.00-17.20
	<i>Veronica IORDAN, Mădălina CĂLBUREANU, Adriana IONESCU, Diana CĂLBUREANU, Raluca MALCIU</i>	
6	NEW GREEN MATERIAL OF COMPOSITE PLASTER FOR NZEB BUILDINGS	17.20-17.40
	<i>Mihai MARINACHE, Mădălina CĂLBUREANU, Diana CĂLBUREANU, Raluca MALCIU, Veronica IORDAN</i>	
7	METHODS AND SOLUTIONS REGARDING ENERGY EFFICIENCY IN PUBLIC BUILDINGS	17.40-18.00
	<i>Eugenia TRĂȘCĂ, Marin BICĂ</i>	

SECTION IV. INDUSTRIAL ENGINEERING		
Room: Nicolae Iorga		
INDUSTRIAL ENGINEERING IV.1.		15.00-16.40
Chairmen: ANDREJ DAVID and GABRIEL BENGA		
1	MODELLING AND PROCESSING OF THE DYNAMIC MODULAR FACADES MANUFACTURED BY THE U BENDING TECHNOLOGY	15.00-15.20
	<i>Leonard Marius CIUREZU-GHERGHE, Cristina TEIȘANU, Bogdan HUREZEANU, Mădălin MĂMULEANU, Gabriela SIMA, Mihai RĂCĂREANU, Oana GÎNGU</i>	
2	AN INTEGRATED INSTRUMENT FOR ASSESSING THE SOCIAL SUSTAINABILITY OF AN ENTERPRISE-IMPORTANT TOOL FOR ENGINEERING MANAGEMENT	15.20-15.40
	<i>Mihai DEMIAN, Luminița GRECU, Gabriela DEMIAN</i>	
3	RESEARCH OF PROTOTYPES MADE THROUGH FDM TECHNOLOGY	15.40-16.00
	<i>Slavi LYUBOMIROV, Emil VELEV, Snezha SHOTAROVA, Ionuț GEONEA, Cristian COPILUȘI, Laurentiu RACILĂ, and Cosmin MIRIȚOIU</i>	
4	ADVANCED SENSOR INTEGRATION FOR MEASUREMENTS THE DEFORMATIONS IN SHIPBUILDING WELDING	16.00-16.20
	<i>Andrei-Angelo MIDAN, Sorin Vasile SAVU, Adrian OLEI, Andrej DAVID, Yasser DOUIMIA, Maciej KLOSAK, Marius TEODORESCU</i>	
5	RESISTIVE-LASER HYBRID SOURCE FOR FFF PRINTING PROCESS	16.20-16.40



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMME 2024

	<i>Remus SOCOL, Iulian ȘTEFAN, Traian ȚUNESCU, Cristian CHIHAIA, Nicușor-Alin SÎRBU, Ionel-Dănuț SAVU</i>	
Coffee break		16.40–17.00
INDUSTRIAL ENGINEERING IV.2. Chairmen: SORIN SAVU and ADRIAN ROSCA		17.00-19.20
1	LASER MICROMACHINING OF TiB2 NANOSTRUCTURED CERAMICS	17.00-17.20
	<i>Iulian ȘTEFAN, Gabriel Constantin BENGA, Ionel Dănuț SAVU, Sorin Vasile SAVU, Adrian Bebe OLEI</i>	
2	STUDY ON THE USE OF ROBOTIC ARMS IN LOGISTICS AND MANUFACTURING: A SHORT REVIEW	17.20-17.40
	<i>Maria-Loredana PROISTOSESCU (NECȘOI), Eduard-Laurențiu NIȚU, Cornelia-Ana GAVRILUȚĂ</i>	
3	A CONCEPT FOR IMPLEMENTATION KANBAN METHOD IN LEARNING FACTORY	17.40-18.00
	<i>Maria-Loredana PROISTOSESCU (NECȘOI), Cornelia-Ana GAVRILUȚĂ, Eduard-Laurențiu NIȚU</i>	
4	STRUCTURAL ANALYSIS OF THE DYNAMIC MODULAR FACADES PROCESSED BY U BENDING TECHNOLOGY	18.00-18.20
	<i>Cristina TEIȘANU, Nicoleta CIOATERĂ, Leonard Marius CIUREZU-GHERGHE, Gabriela SIMA, Cristian CHIHAIA, Cosmin MIRIȚOIU</i>	
5	3D PRINTING IN BIOMEDICAL ENGINEERING	18.20-18.40
	<i>Nicolae TRIHENEĂ, Darius GURAN, Vlad-Ștefan CONSTANTIN, Mihai FLOREA, Raluca FAUR and Cristian DUGĂEȘESCU</i>	
6	STUDY OF TENSILE TEST OF SPECIMENS OBTAINED THROUGH SLS PROCESSES OF ADDITIVE MANUFACTURING WITH RHOMBIC INFILL GEOMETRY AND DIFFERENT INFILL PERCENTAGE	18.40-19.00
	<i>Emil VELEV, Slavi LYUBOMIROV, Copilusi CRISTIAN, Ionut GEONEA, Laurentiu RACILA, Cosmin MIRIȚOIU</i>	
7	RESEARCH ON THE APPLICATION OF THE KAIZEN METHOD TO THE IMPROVEMENT OF THE MANUFACTURING PROCESS IN THE AUTOMOTIVE FIELD	19.00-19.20
	<i>Ionut-Nicusor TONE, Cristina Ileana PASCU, Daniel TUDORA</i>	



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOME 2024

SECTION V. MECHANICAL ENGINEERING

Room: Hillary Clinton

MECHANICAL ENGINEERING V.1.		15.00-16.40
Chairmen: MIHAIELA ILIESCU and PAUN ANTONESCU		
1	SYNTHESIS OF THE COMPLEX MECHANISM OF THE QUADRUPED MOBILE ROBOT	15.00-15.20
	<i>Ovidiu ANTONESCU, D. VALEANU, I. COTOC, A. J. CAMBOSIE</i>	
2	STUDY ON BLADE GEOMETRIC DESIGN AND ADVANCED CONTROL FOR HORIZONTAL WIND TURBINE	15.20-15.40
	<i>Mihăuță Costin CĂLIN, Lucian MATEI, Mihai MUȘAT, Marius PANDELEA, Mihaiela ILIESCU</i>	
3	ROBOT VECTOR OPERATING SYSTEM FOR LOCALIZATION AND MAPPING	15.40-16.00
	<i>Alexandra-Cătălina CIOCÎRLAN, Luige VLĂDĂREANU, Ionel-Alexandru GAL Bianca Rodica GHINOIU, Cristina Marilena NIȚU, Marius PANDELEA, Mihaiela ILIESCU</i>	
4	INTEGRATION OF 3D SCANNING TECHNOLOGIES IN THE DESIGN OF SURFACES OBTAINED BY TESSELLATIONS	16.00-16.20
	<i>Valentin CORZANU, Alina DUTA, Andrei CORZANU, Dragoș Laurențiu POPA</i>	
5	SOME PARTICULARITIES OF INTERNAL-EXTERNAL GEAR PAIRS WITH ZERO DIFFERENCE IN NUMBERS OF TEETH	16.20-16.40
	<i>Ioan DOROFTEI, Ovidiu-Vasile CRIVOI, Cristina-Magda CAZACU, Stelian ALACI</i>	
Coffee break		16.40-17.00
MECHANICAL ENGINEERING V.2.		17.00-18.40
Chairmen: MARIUS STANESCU and IONUT GEONEA		
1	CONTRIBUTIONS TO THE KINEMATIC AND DYNAMIC STUDY OF A VEHICLE FOR SERVING PERSONS WITH LOCOMOTOR DISABILITIES	17.00-17.20
	<i>Diana MARINESCU, Adrian CALANGIU, Simona CIULU, Nichita OZUNU, Nicolae DUMITRU</i>	
2	THE NONLINEAR DYNAMICS OF ESCAPEMENT MECHANISMS	17.20-17.40
	<i>Branislav POPKONSTANTINOVIC, Alina DUȚĂ, Gabriel MARINESCU, Misa STOJICEVIC, Aleksandar DJORDJEVIC</i>	
3	INTRODUCING NONUNIFORMITY COEFFICIENTS IN THE STUDY OF VIBRATIONS OF MULTILAYER COMPOSITE BARS	17.40-18.00



The Joint International Conference of the 3rd International Conference on Advanced Research in Engineering, CARE 2024, and the 7th International Conference on Mechanical Engineering, ICOMME 2024

	<i>Sabin RIZESCU, Alexandru BOLCU, Dumitru BOLCU, Marius Marinel STĂNESCU</i>	
4	EXPERIMENTAL STUDY FOR A WATER COOLIG SYSTEM FOR IT HARDWARE ELEMENTS	18.00-18.20
	<i>Eugenia Adriana STĂNCUȚ, Alina CODIȚĂ</i>	
5	COMPARATIVE ANALYSIS OF THE 4-RRRP FOUR-BAR LINKAGE AND THE 7-PR(RRRR)RP SEVEN-BAR LINKAGE FOR THE DESIGN OF A MEDICAL DISINFECTION ROBOT WITH FOLDING MECHANISM	18.20-18.40
	<i>Elida-Gabriela TULCAN, Carmen STICLARU, Melania Olivia SANDU, Erwin-Christian LOVASZ</i>	