



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

## Conference schedule

### Wednesday, 16 October 2024

**Welcome Party**                      **19.30-21.30**      **University House**

### Thursday, 17 October, 2024

<b>Registration</b>	<b>9.00-10.00</b>	<b>Blue Hall, University of Craiova</b>
<b>Opening act</b>	<b>10.00-10.30</b>	<b>Blue Hall, University of Craiova</b>
<i>Plenary presentations</i>	<b>10.30-11.30</b>	<b>Blue Hall, University of Craiova</b>
<i>Coffee break</i>	<b>11.50-12.20</b>	<b>Blue Hall, University of Craiova</b>
<i>Plenary presentations</i>	<b>12.20-13.20</b>	<b>Blue Hall, University of Craiova</b>
<i>Lunch</i>	<b>13.45-15.00</b>	<b>University House</b>
<i>Technical sections</i>	<b>15.00-17.00</b>	<b>University House</b>
<i>Coffee break</i>	<b>17.00-17.20</b>	<b>University House</b>
<i>Technical sections</i>	<b>17.20-19.20</b>	<b>University House</b>
<i>Gala Dinner</i>	<b>19.30-22.00</b>	<b>University House</b>

### Friday, 18 October 2024

**Technical visit**                      **9.00-12.00**

**Lunch**                                      **12.30-14.00**      **University House**



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## Plenary presentations

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



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## Technical sections

SECTION I. AUTOMOTIVE			
Room: Mihai Eminescu			
Chairmen: ILIE DUMITRU and LAURENTIU RACILA			16.00-18.20
1	TRAFFIC OPTIMIZATION IN A ROUNDABOUT WITH AN ATYPICAL STREET LAYOUT		15.00-15.20
		Theodor George OPRICA, Lucian MATEI, Bogdan Ștefan FLORESCU, Nicoleta Daciana GENCĂRĂU	
2	AIR QUALITY STUDY IN THE CORONAVIRUS PANDEMIC		15.20-15.40
		Marin BICĂ, Cristian-Florin PALIU, Ludmila SASS, Ileana-Diana NICOLAE	
3	CONSTRUCTIVE AND FUNCTIONAL OPTIMIZATION OF A FUEL TANK IN THE SUPPLY SYSTEM OF A SPARK-IGNITION ENGINE		15.40-16.00
		Ilie DUMITRU, Cătălin DRAGHICI, Gigel PARASCHIV, Lucian MATEI, Laurențiu RACILĂ	
4	ENHANCING SUSTAINABLE URBAN MOBILITY: A COMPREHENSIVE STUDY OF TRAFFIC MANAGEMENT IN PETROSANI		16.00-16.20
		Aurelian NICOLA, Răzvan Bogdan ITU, Bogdan Ioan MARC, Alexandra SOICA, Gheorghe Bogdan URDEA, Maria-Isabela CAȘOTĂ	
5	RESEARCH ON THE RELATIONSHIP BETWEEN PASSENGER VOLUME AND THE ENERGY EFFICIENCY OF ELECTRIC BUSES		16.20-16.40
		Alexandru Constantin OPRICA, Nicoleta GENCĂRĂU, Laurențiu RACILĂ, Augustin CONSTANTINESCU, Ilie DUMITRU	
	Coffee break		16.40-17.00
6	APPLICATION OF A SYNTHETIC POWER INDICATOR METHOD TO QUANTIFY CHEMICAL POLLUTION IN MOTOR VEHICLES		17.00-17.20
		Alexandru Constantin OPRICA, Nicoleta GENCĂRĂU, Lucian MATEI, Augustin CONSTANTINESCU, Ilie DUMITRU	
7	A SHORT HISTORY OF ELECTRIC VEHICLES		17.20-17.40
		Laurentiu RACILA, Lucian MATEI, Daniela BURGHILĂ, Ionuț GEONEA, Cristian COPILUȘI	
8	ENABLING TECHNOLOGIES AND SYSTEM ARCHITECTURES FOR AUTONOMOUS VEHICLES		17.40-18.00
		Theodor George OPRICA, Lucian MATEI, Andreea Andrada MATEESCU, Ruxandra Ioana CIULU, Loreta SIMNICEANU	
9	REGARDING THE USE OF SPECIAL STAMPING DEVICES OBTAINED BY ELECTRICAL EROSION IN THE AUTOMOBILE INDUSTRY		18.00-18.20
		Daniel POPESCU, Ionuț GEONEA	



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10	THE USE OF PWM SIGNAL IN AUTOMOTIVE APPLICATIONS	18.20-18.40
	<i>Dragoş TUTUNEA, Laurenţiu RACILĂ</i>	
<b>SECTION II. BIOMECHANICS</b>		
<b>Room: Nicolae Romanescu</b>		
<b>BIOMECHANICS II.1.</b>		
<b>Chairmen: NICOLAE DUMITRU and CRISTIAN COPILUSI</b>		<b>15.00-16.40</b>
1	MANIPULATORS USED AS ENDOSCOPIC INSTRUMENTATIONS OF THE URINARY TRACT	15.00-15.20
	<i>Ovidiu ANTONESCU, Viorica Velişcu, Ionuţ Daniel Geonea, Păun ANTONESCU</i>	
2	HUMAN AND ROBOT FINGER KINEMATIC ANALYSIS USING WAVELET THEORY	15.20-15.40
	<i>Cosmin BERCEANU, Cristian CHIHAILA, Dan B. MARGHITU, Daniela TARNIŢĂ</i>	
3	EXPERIMENTAL EVALUATION OF THE EFFECT OF SHOULDER POSITION ON FOREARM PRONATION AND SUPINATION MOVEMENTS	15.40-16.00
	<i>Cristian-Emilian CHIHAILA, Gabriela MARINACHE, Elena-Anca ALBU, Marius TEODORESCU, Daniela TARNIŢĂ</i>	
4	ASSISTIVE DEVICES FOR HUMAN LOCOMOTION ASSISTANCE AND REHABILITATION AT FACULTY OF MECHANICS – UNIVERSITY OF CRAIOVA	16.00-16.20
	<i>Cristian COPILUŞI, Nicolae DUMITRU, Sorin DUMITRU, Ionuţ GEONEA, Alexandru MARGINE</i>	
5	STRUCTURAL SYNTHESIS AND DYNAMIC ANALYSIS OF A NEW HUMAN LEG MOTION ASSISTANCE MECHANISM	16.20-16.40
	<i>Ionuţ GEONEA, Nicolae DUMITRU, Alexandru MARGINE, Cristian COPILUŞI, Gabriela MARINACHE, Daniela TARNIŢĂ</i>	
<b>Coffee break</b>		<b>16.40-17.00</b>
<b>BIOMECHANICS II.2.</b>		
<b>Chairmen: MISA STOJICEVIC and CRISTINA CAZACU</b>		<b>17.00-18.40</b>
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, Ionuţ ZIMA, Damien CHABLAT, Călin VAIDA, Alexandru PUŞCĂ, Tiberiu ANTAL, Bogdan GHERMAN, Doina PÎSLA</i>	
2	EXPERIMENTAL INVESTIGATION OF THE PROPULSIVE FORCE IN TETHERED SWIMMING OF CROWL STROKE	17.20-17.40
	<i>Mihnea MARIN, Ionuţ GEONEA, Germina COSMA, Mihaela ACATRINEI</i>	



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3	<b>ANALYSIS OF SEAT TO HEAD TRANSMISSIBILITY OF VIBRATIONS FOR A TRACTOR DRIVER, ON AN UNEVEN LAND, BASED ON BIOMETRICS ACQUISITION SYSTEM</b>	<b>17.40-18.00</b>
	<i>Teofil-Alin ONCESCU, Ștefan BOSTINĂ, Marius-Valentin VÎLCELEANU, Cristian CHIHAIA, Marius TEODORESCU, Cristian Bogdan ALBU, Ionuț GEONEA, Ilie DUMITRU, Daniela TARNIȚĂ</i>	
4	<b>A DESIGN OF SIX-BAR LINKAGE FOR TRAJECTORY REPLICATION</b>	<b>18.00-18.20</b>
	<i>Misa STOJICEVIC, Branislav POPKONSTANTINOVIC, Zorana JELI, Mladen REGODIC</i>	
5	<b>THE USE OF VIRTUAL DIRECT AND REVERSE ENGINEERING TECHNIQUES FOR THE RECONSTRUCTION OF AN ORTHODONTIC SYSTEM</b>	<b>18.20-18.40</b>
	<i>Dragoș-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	<b>ASPECTS OF THE MASSIVE MASONRY BEHAVIOR OF HERITAGE BUILDINGS UNDER VARIOUS FACTORS INVESTIGATED EXPERIMENTALLY</b>	<b>15.00-15.20</b>
	<i>Anca Mihaela BARBU (MOGOȘANU), Mihai MARINACHE, Ramona Maria PINȚOI</i>	
2	<b>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</b>	<b>15.20-15.40</b>
	<i>Alina-Mariana CODIȚĂ, Mihai MARINACHE, Adriana STĂNCUȚ, Diana Mara CĂLBUREANU</i>	
3	<b>THE IMPORTANCE OF USING APPROPRIATE MATERIALS WHEN RENOVATING OLD MASONRY BUILDINGS - CASE STUDY: CHURCH FROM THE END OF THE XIX-TH CENTURY</b>	<b>15.40-16.00</b>
	<i>Alina-Mariana CODIȚĂ, Mihai MARINACHE, Adriana STĂNCUȚ, Adriana IONESCU</i>	
4	<b>THE VALUE OF THE VISCOUS FLUID DAMPERS FORCE RELATIVE TO BUILDING HEIGHT</b>	<b>16.00-16.20</b>
	<i>Adriana IONESCU, Mihai NEGRU, Veronica IORDAN, Alina CODIȚĂ, Liviu DINCĂ, Jenica-Ileana CORCĂU</i>	



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	<b>Coffee break</b>		<b>16.20–17.00</b>
<b>CIVIL ENGINEERING III 2</b>			
<b>Chairmen: MARIN BICA and ADRIANA IONESCU</b>			
5	<b>GREEN ROOFS FOR OFFICE BUILDINGS: BENEFITS TO MASS TRANSFER AND ENERGY EFFICIENCY</b>		<b>17.00-17.20</b>
	<i>Veronica IORDAN, Mădălina CĂLBUREANU, Adriana IONESCU, Diana CĂLBUREANU, Raluca MALCIU</i>		
6	<b>NEW GREEN MATERIAL OF COMPOSITE PLASTER FOR NZEB BUILDINGS</b>		<b>17.20-17.40</b>
	<i>Mihai MARINACHE, Mădălina CĂLBUREANU, Diana CĂLBUREANU, Raluca MALCIU, Veronica IORDAN</i>		
7	<b>METHODS AND SOLUTIONS REGARDING ENERGY EFFICIENCY IN PUBLIC BUILDINGS</b>		<b>17.40-18.00</b>
	<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 BENGĂ			
1	MODELLING AND PROCESSING OF THE DYNAMIC MODULAR FACADES MANUFACTURED BY THE U BENDING TECHNOLOGY		15.00-15.20
		Leonard Marius CIUREZU-GHERGHE, Cristina TEIȘANU, Bogdan HUREZEANU, Mădălin MĂMULEANU, Gabriela SIMA, Mihai RĂCĂREANU, Oana GÎNGU	
2	AN INTEGRATED INSTRUMENT FOR ASSESSING THE SOCIAL SUSTAINABILITY OF AN ENTERPRISE-IMPORTANT TOOL FOR ENGINEERING MANAGEMENT		15.20-15.40
		Mihai DEMIAN, Luminița GRECU, Gabriela DEMIAN	
3	RESEARCH OF PROTOTYPES MADE THROUGH FDM TECHNOLOGY		15.40-16.00
		Slavi LYUBOMIROV, Emil VELEV, Snezha SHOTAROVA, Ionuț GEONEA, Cristian COPILUȘI, Laurentiu RACILĂ, and Cosmin MIRIȚOIU	
4	ADVANCED SENSOR INTEGRATION FOR MEASUREMENTS THE DEFORMATIONS IN SHIPBUILDING WELDING		16.00-16.20
		Andrei-Angelo MIDAN, Sorin Vasile SAVU, Adrian OLEI, Andrej DAVID, Yasser DOUMIA, Maciej KLOSAK, Marius TEODORESCU	
5	RESISTIVE-LASER HYBRID SOURCE FOR FFF PRINTING PROCESS		16.20-16.40



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



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## SECTION V. MECHANICAL ENGINEERING

**Room: Hillary Clinton**

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





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	<i>Sabin RIZESCU, Alexandru BOLCU, Dumitru BOLCU, Marius Marinel STĂNESCU</i>	
4	<b>EXPERIMENTAL STUDY FOR A WATER COOLIG SYSTEM FOR IT HARDWARE ELEMENTS</b>	<b>18.00-18.20</b>
	<i>Eugenia Adriana STĂNCUȚ, Alina CODIȚĂ</i>	
5	<b>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</b>	<b>18.20-18.40</b>
	<i>Elida-Gabriela TULCAN, Carmen STICLARU, Melania Olivia SANDU, Erwin-Christian LOVASZ</i>	