

CONTENTS

<i>SECTION I: INDUSTRIAL HYDRAULICS AND MECHATRONICS</i>	
<ul style="list-style-type: none"> • EXPERIMENTAL DESIGN, MODELLING AND NUMERICAL CALIBRATION OF A HIGH SPEED SHPB MECHATRONIC SYSTEM USING A PNEUMATIC PROPULSION DEVICE Adinel GAVRUS, Fabien MARCO, Sylvain GUEGAN 	14 - 24
<ul style="list-style-type: none"> • CONTROL CONCEPT FOR A NOVEL INTEGRATED PRESSURE BOOSTER Stephan MERKELBACH, Olivier REINERTZ, Hubertus MURRENHOF 	25 - 34
<ul style="list-style-type: none"> • ADJUSTMENT OF HYDROSTATIC PARAMETERS TO A HYDRAULIC INSTALLATION SYSTEM OF LAMINAR CYLINDER CASSETTE - LABORATORY VERSION Nicușor BAROIU, Elena Felicia BEZNEA, Gabriel Marcel BOGHIAN 	35 - 41
<ul style="list-style-type: none"> • USING LOGIC GATES IN FLUID POWER SYSTEMS CONTROL (Part 1) Eugen DOBÂNDĂ, Ilare BORDEAȘU 	42 - 47
<ul style="list-style-type: none"> • THE STATE FEEDBACK CONTROL OF WATER HYDRAULIC SERVO MOTOR SYSTEM BY POLE PLACEMENT Yusuf ALTUN 	48 - 53
<ul style="list-style-type: none"> • NOISE CONTROL IN OIL HYDRAULIC SYSTEM Basavaraj HUBBALLI, Vilas SONDUR 	54 - 63
<ul style="list-style-type: none"> • NEW MECHATRONICS AND CYBER-MIX MECHATRONICS SYSTEMS AND ECO-SYSTEMS DESIGNED BY THE RESEARCH INFRASTRUCTURE ECOSIN-MECATRON Gheorghe Ion GHEORGHE 	64 - 73
<ul style="list-style-type: none"> • LQR CONTROL OF LIQUID LEVEL AND TEMPERATURE CONTROL FOR COUPLED-TANK SYSTEM Melih AKTAŞ, Yusuf ALTUN, Oğuz EROL 	74 - 79
<ul style="list-style-type: none"> • DISTRIBUTED SYSTEM FOR MONITORING ELECTRO-HYDRAULIC DRIVES Ioana ILIE, Marian BLEJAN, Alexandru HRISTEA 	80 - 84
<ul style="list-style-type: none"> • CONSIDERATIONS REGARDING THE HYDRODYNAMIC STRESSES FOR DIRECTIONAL SPOOL VALVES Victor BĂLĂȘOIU, Rodica BĂDĂRĂU, Ilare BORDEAȘU, Mircea O. POPOVICIU, Dorin BORDEAȘU 	85 - 95
<ul style="list-style-type: none"> • TEMPERATURE CONTROLLERS Marian BLEJAN, Ioana ILIE 	96 - 99
<ul style="list-style-type: none"> • STORAGE OF THERMAL ENERGY IN PHASE CHANGE MATERIALS USING HYBRID HEATING SYSTEMS Daniel Vasile BANYAI 	100 - 103

<i>SECTION II: MOBILE HYDRAULICS, PNEUMATICS AND TRIBOLOGY</i>	
<ul style="list-style-type: none"> HOLLOW PISTONS IN HYDRAULICS – POSSIBILITIES OF INCREASING VOLUMETRIC EFFICIENCIES Marcel RÜCKERT, Hubertus MURRENHOF, Katharina SCHMITZ	104 - 113
<ul style="list-style-type: none"> INVESTIGATIONS ON THE RHEOLOGY OF ADDITIVATED HYDRAULIC OILS Alexandru Valentin RADULESCU, Irina RADULESCU	114 - 119
<ul style="list-style-type: none"> INVESTIGATION OF A DIGITAL VALVE SYSTEM EFFICIENCY FOR METERING-IN SPEED CONTROL USING MATLAB/SIMULINK Essam ELSAED, Mohamed ABDELAZIZ, Nabil A. MAHMOUD	120 - 129
<ul style="list-style-type: none"> AUTOMATED HYDRAULIC OIL COOLING SYSTEM DRIVEN BY A VARIABLE SPEED HYDRAULIC MOTOR Iulian-Claudiu DUȚU, Radu-Iulian RĂDOI	130 - 139
<ul style="list-style-type: none"> FOUR-WHEEL DRIVE HIGH EFFICIENCY HYBRID TRANSMISSION FOR MULTIPURPOSE MOTOR VEHICLES Ioan LEPĂDATU, Corneliu CRISTESCU, Polifron-Alexandru CHIRIȚĂ, Cristian MĂRCULESCU	140 - 146
<ul style="list-style-type: none"> CHARACTERIZATION OF AN EFFICIENT DIGITAL HYDRAULIC SYSTEM Mohab GADOU, Mohamed ABDELAZIZ, Nabil A. MAHMOUD	147 - 152
<ul style="list-style-type: none"> DIGITAL LINEAR HYDRAULIC MOTORS Petrin DRUMEA, Ioan PAVEL, Gabriela MATACHE, Ioan BALAN	153 - 162
<ul style="list-style-type: none"> DETERMINATION OF THE INDUCED STRESS STATE IN AN ALUMINIUM ALLOY COUPLING BAR FOR ROAD VEHICLES BY USING FEM Liviu Daniel PIRVULESCU, Liviu MARSAVINA	163 - 168
<ul style="list-style-type: none"> EXPERIMENTAL DETERMINATION OF FRICTIONAL FORCES OCCURRING WHEN SWITCHING HYDRAULIC DIRECTIONAL VALVES Corneliu CRISTESCU, Cătălin DUMITRESCU, Radu RĂDOI, Liliana DUMITRESCU	169 - 175
<ul style="list-style-type: none"> DESIGNING A PID CONTROLLER FOR WATER HYDRAULIC SERVO MOTOR SYSTEMS WITH ZIEGLER-NICHOLS METHOD Oğuz EROL, Yusuf ALTUN, Melih AKTAŞ	176 - 180
<ul style="list-style-type: none"> MOBILE AND STATIONARY EQUIPMENT FOR MELTING SNOW FROM THE URBAN PUBLIC SPACE Corneliu CRISTESCU, Liliana DUMITRESCU, Ioan LEPĂDATU, Radu SAUCIUC	181 - 187
<ul style="list-style-type: none"> PNEUMATICALLY ACTUATED STEPPING ROBOT Mihai AVRAM, Adrian CARTAL, Constantin BUCȘAN	188 - 191
<ul style="list-style-type: none"> PORTABLE TEST EQUIPMENT FOR AUTOMOTIVE POWER-STEERING WITH DATA TRANSMISSION Alexandru HRISTEA, Radu RĂDOI, Bogdan TUDOR, Ioan BĂLAN	192 - 197
<i>SECTION III: HYDRAULIC SYSTEMS, STANDS AND COMPLEX EQUIPMENT</i>	
<ul style="list-style-type: none"> PIPELINE LEAKAGE DETECTION BY MEANS OF ACOUSTIC EMISSION TECHNIQUE Claudiu-Ionel NICOLA, Marcel NICOLA, Iulian HUREZEANU, Adrian VINTILĂ, Ancuța-Mihaela ACIU, Dumitru SACERDOȚIANU	198 - 206

<ul style="list-style-type: none"> • DETERMINATION OF THE FATIGUE LIFE OF AN ELECTRIC VEHICLE CHASSIS <p>Yunus MARAL, Yusuf ALTUN, Fikret POLAT</p>	207 - 212
<ul style="list-style-type: none"> • RESULTS ON THE RESEARCH OF THE INFRARED THERMOGRAPHY METHOD APPLIED TO THE HYDRAULIC SYSTEMS DIAGNOSIS <p>Alexandru-Daniel MARINESCU, Corneliu CRISTESCU, Teodor Costinel POPESCU, Carmen-Anca SAFTA</p>	213 - 221
<ul style="list-style-type: none"> • SCADA SYSTEMS ARCHITECTURE BASED ON OPC SERVERS AND APPLICATIONS FOR INDUSTRIAL PROCESS CONTROL <p>Marcel NICOLA, Claudiu-Ionel NICOLA, Dumitru SACERDOȚIANU, Marian DUȚĂ</p>	222 - 232
<ul style="list-style-type: none"> • OBTAINING OF PI CONTROL PARAMETERS FOR VECTOR CONTROLLED PMSM <p>Oğuz EROL, Melih AKTAŞ, Yusuf ALTUN</p>	233 - 237
<ul style="list-style-type: none"> • THEORETICAL AND EXPERIMENTAL RESEARCH ON GAS DYNAMICS SONIC DISCHARGE PROCESS IN BIG BLASTER TYPE CANNONS <p>Florin TEIȘANU, Constantin CHELAN, Marinela BUTOI, Claudiu-Ionel NICOLA, Marcel NICOLA</p>	238 - 248
<ul style="list-style-type: none"> • REDUCING THE ENERGY CONSUMPTION IN THE HYDRAULIC CYLINDER ENDURANCE TEST <p>Teodor Costinel POPESCU, Radu Iulian RĂDOI, Mihai-Alexandru HRISTEA</p>	249 - 256
<ul style="list-style-type: none"> • MECHANICAL COMPENSATION OF POWER LOSS IN THE ENDURANCE TESTS ON ROTARY AND LINEAR POSITIVE DISPLACEMENT MACHINES <p>Teodor Costinel POPESCU, Radu Iulian RĂDOI, Mihai-Alexandru HRISTEA</p>	257 - 263
<ul style="list-style-type: none"> • APPLICATION SOFTWARE FOR REACTOR SIZING CALCULATION <p>Claudiu-Ionel NICOLA, Marcel NICOLA, Ion PĂTRU, Maria Cristina NIȚU, Viorica VOICU, Sebastian POPESCU</p>	264 - 273
<ul style="list-style-type: none"> • UPGRADED STAND FOR TESTING OF HYDRAULICALLY ASSISTED STEERING BOXES FOR CARS <p>Radu – Iulian RĂDOI, Gabriel ANGHELACHE, Alexandru HRISTEA, Mihai ALEXE, Bogdan TUDOR</p>	274 - 280
<ul style="list-style-type: none"> • SIMULATION AND ANALYSIS OF HYDRAULIC-PNEUMATIC QUADRUPLE TANK SYSTEM <p>Yusuf ALTUN, Oğuz EROL, Melih AKTAŞ</p>	281 - 286
<ul style="list-style-type: none"> • WORKING BENCH FOR RECONDITIONING HYDRAULIC CYLINDERS <p>Liliana DUMITRESCU, Alexandru Polifron CHIRIȚĂ, Corneliu CRISTESCU</p>	287 - 291
<ul style="list-style-type: none"> • THERMOGRAPHIC INVESTIGATION OF THE HYDRAULIC DRIVE SYSTEMS <p>Teodor Costinel POPESCU, Alexandru-Daniel MARINESCU, Alina Iolanda POPESCU, Ana-Maria Carla POPESCU</p>	292 – 296
<p><i>SECTION IV: ENVIRONMENT, ECOLOGY, RENEWABLE ENERGY AND SUSTAINABLE DEVELOPMENT</i></p>	
<ul style="list-style-type: none"> • ELABORATION OF AUTONOMOUS IRRIGATION SYSTEMS INTEGRATED WITH PHOTOVOLTAIC <p>Ion BOSTAN, Viorel BOSTAN, Valeriu DULGHERU, Ion SOBOR, Nicolae SECRIERU, Oleg CIOBANU, Radu CIOBANU, Valeriu ODAINĂI, Sergiu CANDRAMAN, Andrei MARGARINT</p>	297 - 307

<ul style="list-style-type: none"> • SPECIALIZED COMPUTING SOFTWARE FOR THE ASSESSMENT OF ENERGY EFFICIENCY AT THE LEVEL OF A STEAM BOILER <p>Silviu ANDREESCU, Claudiu-Ionel NICOLA, Marcel NICOLA, Sebastian POPESCU, Viorica VOICU, Marian DUȚĂ</p>	308 - 317
<ul style="list-style-type: none"> • APPLICATIONS OF MICROALGAE IN WASTEWATER TREATMENT. EXPERIMENTAL AND EQUILIBRIUM STUDIES <p>Emilia NEAG, Cecilia ROMAN</p>	318 - 324
<ul style="list-style-type: none"> • PROPERTIES OF CONCRETE CONTAINING PET PLASTIC WASTE FROM POST-CONSUMED BOTTLES <p>Azad A. MOHAMMED</p>	325 - 330
<ul style="list-style-type: none"> • DEVELOPMENTS, TRENDS AND ORIENTATIONS REGARDING THE REALIZATION OF RENEWABLE ENERGY CONVERSION SYSTEMS <p>Corneliu CRISTESCU, Cătălin DUMITRESCU, Valeriu DULGHERU, Liliana DUMITRESCU</p>	331 - 341
<ul style="list-style-type: none"> • ENERGY CONVERSION UNIT FROM WATER STREAMS FOR USE IN AGRICULTURAL RURAL REGIONS <p>Fănel ȘCHEAUA</p>	342 - 346
<ul style="list-style-type: none"> • ELEMENTS CONCERNING THE ENERGY CHARACTERISTICS OF BIOMASS AND TECHNOLOGIES FOR CONVERTING IT INTO PELLETS <p>Gabriela MATACHE, Gheorghe SOVAIALA, Valentin BARBU, Alina Iolanda POPESCU, Ana-Maria Carla POPESCU, Mihai-Alexandru HRISTEA</p>	347 - 355
<ul style="list-style-type: none"> • STUDY OF THE VELOCITY OF THE FLOW IN WASTEWATER TREATMENT PLANT <p>Adrian CUREU, Florin BODE</p>	356 - 362
<ul style="list-style-type: none"> • CARBON FOOTPRINT DETERMINATION WHEN USING RESIDUAL AGRICULTURAL BIOMASS FOR ENERGY PRODUCTION <p>Erol MURAD</p>	363 - 371
<ul style="list-style-type: none"> • HYDRAULICALLY CONTROLLED FERTIGATION EQUIPMENT WITH VOLUMETRIC INJECTION DEVICE <p>Gabriela MATACHE, Sava ANGHEL, Alina Iolanda POPESCU, Ana-Maria POPESCU, Gheorghe ȘOVĂIALĂ</p>	372 - 380
<ul style="list-style-type: none"> • RESEARCHES ON DRY EXTRUSION PROCESSING OF SOYBEAN SEEDS FOR THEIR SUPERIOR CAPITALIZATION IN ANIMAL FEED <p>Anișoara PĂUN, Carmen BRĂCĂCESCU, Dumitru MILEA, Alexandru ZAICA, Costin MIRCEA</p>	381 - 386
<ul style="list-style-type: none"> • ANTIENTROPIC CONCEPT CHAB <p>Erol MURAD</p>	387 - 392
<ul style="list-style-type: none"> • SPECIALIZED EQUIPMENT FOR CALIBRATION IN-LINE APPLIANCES FOR TESTING PHYSICAL PARAMETERS OF WATER QUALITY <p>Dumitru VLAD, Diana Mura BADEA, Valentina Daniela BAJENARU</p>	393 - 397
<ul style="list-style-type: none"> • EXPERIMENTAL RESEARCH ON THE METHODS OF VALORIFICATION OF BIOMASS WASTE <p>Gabriela MATACHE, Ioan PAVEL, Petrin DRUMEA, Alexandru HRISTEA, Edmond MAICAN</p>	398 - 405
<ul style="list-style-type: none"> • A NEW AUTOMATED DEVICE FOR TURBINED WATER AERATION <p>Florentina BUNEA, Adrian NEDELICU, Corina Alice BĂBUȚANU</p>	406 - 414
<ul style="list-style-type: none"> • HIGH EFFICIENCY ELECTRIC MOTOR <p>Mihail POPESCU, Constantin DUMITRU</p>	415 - 422

<i>SECTION V: EDUCATION, TRAINING IN FLUID POWER AND INNOVATIVE POLICIES</i>		
<ul style="list-style-type: none"> OPEN SCIENCE IN CLOUD TECHNOLOGY Alexandru MARIN, Laura BOANȚĂ 		423 - 432
<ul style="list-style-type: none"> MODERN TRENDS IN THE DESIGN AND MODERNIZATION OF HYDRAULIC DRIVES Zygmunt DOMAGAŁA, Krzysztof KĘDZIA 		433 - 443
<ul style="list-style-type: none"> RESEARCH CONCERNING DESIGNING SPECIFICATIONS AND COMPONENTS FOR AN ECO-INNOVATIVE TECHNOLOGIES IMPLEMENTATION MODEL Irina RADULESCU, Florica COSTIN, Maria DUMITRACHE, Alexandru Valentin RADULESCU 		444 - 450
<ul style="list-style-type: none"> THE FAILURE OF PUBLIC UTILITIES, A MEASURE OF EARTHQUAKE IMPACT ON POPULATION Ștefan-Nicolae TRACHE, Dan BURLACU 		451 - 455
<ul style="list-style-type: none"> TECHNOLOGY TRANSFER. STAGES FOR IMPLEMENTATION. SELECTING AND IMPLEMENTING "THE BEST PRACTICES". FACTORS WHICH INFLUENCE THE TECHNOLOGY TRANSFER ACTIVITIES Diana Mura BADEA, F.T. TANASESCU, Dumitru VLAD, Valentina Daniela BAJENARU 		456 - 461
<ul style="list-style-type: none"> INNOVATION ECOSYSTEM MODEL FOR COMMERCIALIZATION OF RESEARCH RESULTS AND THE NEW HORIZON 2020 COMMISSION WORK PROGRAMME Gabriel VLĂDUȚ 		462 - 477