

# Papers accepted at IMT Oradea 2018

Andjelija MITROVIĆ<sup>1</sup>, Pavel KOVAC<sup>2</sup>, Nenad KULUNDŽIĆ<sup>2</sup>, Borislav SAVKOVIĆ<sup>2</sup>, Ildiko MANKOVA<sup>3</sup>

Visoka Škola Tehničkih Strukovnih Studija Čačak, Serbia

3D END MILLING FINITE ELEMENT THERMAL ANALYSIS.....

1

Dan SĂVESCU

Transilvania University of Brașov

ASPECTS OF HUMAN BEHAVIOUR IN NEGOTIATION PROCESS.....

5

Judit T. KISS

University of Debrecen

EXAMINATION OF FISCAL EXPENDITURES ON EDUCATION AND RESEARCH AS HUMAN

CAPITAL INVESTMENTS.....

9

Adriana BUJOR and Silvia AVASILCĂI

"Gheorghe Asachi" Technical University of Iasi

INNOVATIVE ARCHITECTURAL DESIGN DEVELOPMENT: THE ARCBAZAR CREATIVE CROWDSOURCING CONTESTS

PERSPECTIVE.....

13

Carmen-Elena STOENOIU

Technical University of Cluj-Napoca

SENSITIVITY OF INDICATORS USED IN COST-VOLUME-PROFIT ANALYSIS.....

17

Carmen-Elena STOENOIU, Ciprian CRISTEA

Technical University of Cluj-Napoca

COMPARATIVE ANALYSIS FOR ESTIMATING PRODUCTION COSTS.....

23

Cătălin ALEXANDRU

Transilvania University of Brașov

OPTIMIZING THE MECHANICAL DEVICE OF A MONO-AXIAL SUN TRACKING MECHANISM.....

29

Cătălin ALEXANDRU

Transilvania University of Brașov

OPTIMIZING THE CONTROL SYSTEM OF A SINGLE-AXIS SUN TRACKING MECHANISM.....

33

Cornel Cătălin GAVRILĂ and Mihai -Tiberiu LATEŞ

Transilvania University of Brasov

SNOW FENCE LOAD ON A HOUSE ROOF WITH TILES.....

37

Lenard JURJ and Radu VELICU

Transilvania University of Brasov

ON THE BENCHMARKING OF FRICTION IN TIMING CHAINS.....

39

Lenard JURJ, Radu VELICU and Radu SĂULESCU

Transilvania University of Brasov

GEOMETRY OF SILENT CHAIN - INVOLUTE SPROCKET.....

45

Florin BLAGA and Iulian STĂNĂŞEL

University of Oradea

STUDY OF FUNCTIONAL PARAMETERS OF A CONVEYOR BY MODELING AND SIMULATION.....

49

Radu PAPUC, Mihai-Tiberiu LATEŞ

Transilvania University of Brasov

THE COMPARATIVE STUDY OF THE STATIC FRICTION COEFFICIENT BETWEEN CHAIN LINK AND  
DIFFERENT TYPES OF POLYAMIDES.....

53

Cornel Cătălin GAVRILĂ and Radu SĂULESCU Transilvania University of Brasov DETERMINING THE OPTIMAL OPERATING PARAMETERS OF A WIND SYSTEM.....	53
Mariana RATIU <sup>1</sup> and Ioan-Florin OARGA <sup>2</sup> <sup>1</sup> University of Oradea, <sup>2</sup> Technical University of Cluj-Napoca EDUCATION AND TRAINING IN ROMANIA ON OCCUPATIONAL SAFETY AND HEALTH IN THE OFFSHORE INDUSTRY.....	61
Dana LUCA MOTOC <sup>1</sup> , Santiago Ferrández BOU <sup>2</sup> and Adrian Petru POP <sup>3</sup> <sup>1</sup> Transilvania University of Brasov, <sup>2</sup> Polytechnic University of Valencia, <sup>3</sup> University of Oradea THERMAL DEGRADATION AND STABILITY OF WOOD PARTICLE COMPOSITES DEPLOYED AS DECORATIVE COMPONENTS.....	65
Doru BALDEAN, Dan MOLDOVANU and Adela-Ioana BORZAN Technical University of Cluj-Napoca CONTRIBUTION TO EXPERIMENTAL RESEARCH OF ALTERNATE FUEL FUMIGATION IN SINGLE CYLINDER RESEARCH DIESEL ENGINE.....	71
Iaroslav Francisc PIŞEC and Alin POP University of Oradea CONTRIBUTION FOR INCREASING THE MANUFACTURING COMPANIES PRODUCTIVITY USING A TRACKING AND PLANNING PRODUCTION PROGRAM.....	75
Stelian ALACI <sup>1</sup> , Florina-Carmen CIORNEI <sup>1</sup> , Sorinel-Toderaş SIRETEAN <sup>1</sup> , Mariana-Cătălina CIORNEI <sup>2</sup> and Gabriel Andrei TIBU <sup>1</sup> <sup>1</sup> Stefan cel Mare University, Suceava, <sup>2</sup> Carol Davila University of Medicine and Pharmacy, Bucharest DYNAMICAL ANALYSIS OF A 2-DEGREES OF FREEDOM SPATIAL PENDULUM.....	81
Doru BALDEAN and Adela-Ioana BORZAN Technical University of Cluj-Napoca CONTRIBUTIONS ON EXPERIMENTAL RESEARCH OF FUEL CONSUMPTION AND MANAGEMENT SYSTEM IN K9K892 DIESEL ENGINE FROM DACIA-RENAULT.....	85
Jorge Segura ALCARAZ, José María Gadea BORRELL, Ernesto Juliá SANCHIS, José Enrique Crespo AMORÓS, Isaac Montava BELDA, Sofía Rebagliato TORREGROSA Universitat Politècnica de València VIBROACOUSTICS AND PSYCHOACOUSTICS INVESTIGATION OF BIODEGRADABLE COMPOSITES FOR MUSICAL INSTRUMENTS.....	91
Dan MOLDOVANU, Florin MARIAŞIU Technical University of Cluj-Napoca NUMERICAL ANALYSIS OF THE INJECTION LAW INFLUENCE ON NOX EMISSIONS FOR A COMPRESSION IGNITED ENGINE.....	95
Norbert BAGAMERI, Bogdan VARGA, Aron CSATO and Dan MOLDOVANU Technical University of Cluj-Napoca COMPARATIVE ANALYSIS OF AUTOMATIC TRANSMISSION AND MANUAL TRANSMISSION BEHAVIOUR ON THE WORLDWIDE HARMONIZED LIGHT DUTY TEST CYCLE.....	101
Norbert BAGAMERI, Bogdan VARGA, Aron CSATO and Dan MOLDOVANU Technical University of Cluj-Napoca OPTIMIZATION OF SHIFTING STRATEGY FOR A DUAL CLUTCH TRANSMISSION THROUGH MATHEMATICAL MODEL.....	105
Dan MOLDOVANU, Florin MARIAŞIU, Norbert BAGAMERI Technical University of Cluj-Napoca INFLUENCE OF SWIRL AND TUMBLE MOTION INSIDE THE COMBUSTION CHAMBER OF A COMPRESSION IGNITED ENGINE ON VERTICES FORMATION.....	109

<b>Maria CRISTEA, Radu Adrian TÎRNOVAN, Ciprian CRISTEA, Constantin Sorin PICĂ and Cristian FĂGĂRĂŞAN</b> Technical University of Cluj-Napoca <b>A MULTI-CRITERIA DECISION MAKING APPROACH FOR PUBLIC LIGHTING SYSTEM SELECTION.....</b>	<b>113</b>
<b>Maria CRISTEA, Radu Adrian TÎRNOVAN, Ciprian CRISTEA and Constantin Sorin PICĂ</b> Technical University of Cluj-Napoca <b>A MULTI-CRITERIA DECISION MAKING APPROACH IN LIGHTING TECHNOLOGY SELECTION</b> <b>FOR A PRODUCTION HALL.....</b>	<b>119</b>
<b>Géza LÁMER</b> University of Debrecen <b>CONTINUOUS AND DISCRETE MODELS IN THE MECHANICS OF DEFORMABLE SOLID BODIES.....</b>	<b>125</b>
<b>Ion BULAC</b> University of Pitesti <b>ALGORITHM FOR THE CALCULATION OF VIBRATION INHERENT FREQUENCIES BENDING</b> <b>FROM TWO-SHAFTS TRANSMISSION WITH TECHNOLOGICAL DEVIATIONS.....</b>	<b>131</b>
<b>Alexandru THIERHEIMER, Cătălin ALEXANDRU and Walter THIERHEIMER</b> Transilvania University of Brașov <b>ASPECTS REGARDING THE EXPERIMENTAL RESEARCH OF THE STRESSORS OF THE</b> <b>HUMAN PREGNANCY IN CASE OF ROAD EVENTS.....</b>	<b>135</b>
<b>Eugen PĂMÎNTAŞ and Felicia Veronica BANCIU</b> Politehnica University of Timișoara <b>A BRIEF OVERVIEW OF THE EVOLUTION AND TRENDS IN MAINTENANCE.....</b>	<b>139</b>
<b>Mariana RATIU<sup>1</sup>, Alexandru RUS<sup>1</sup> and Monica Loredana BALAŞ<sup>2</sup></b> <sup>1</sup> University of Oradea, <sup>2</sup> Transilvania University of Brașov <b>MODELING IN ADAMS OF A 6R INDUSTRIAL ROBOT.....</b>	<b>143</b>
<b>Dániel SALÁNKI, Kornél SARVAJCZ</b> University of Debrecen <b>ANALYSIS OF GAIT RECOGNITION SYSTEM DEVELOPED IN NI LABVIEW.....</b>	<b>147</b>
<b>Ion BULAC</b> University of Pitesti <b>MATHEMATICAL MODEL FOR THE CALCULATION OF VIBRATION INHERENT</b> <b>FREQUENCIES AT BENDING FROM THREE-SHAFTS TRANSMISSION.....</b>	<b>151</b>
<b>Iulian STĂNĂSEL, Florin BLAGA, Traian BUIDOŞ and Dan CRĂCIUN</b> University of Oradea <b>REVERSE ENGINEERING AND CAD-CAM APPROACH FOR MANUFACTURING OF SPARE PARTS.</b> <b>CASE STUDY.....</b>	<b>155</b>
<b>Gyula KORSOVECZKI, Géza HUSI and Timotei István ERDEI</b> University of Debrecen <b>THE MAINTENANCE, COMMISSIONING OF FANUC M-1IA 0.5A TYPE SELECTING ROBOT</b> <b>AND IMPLEMENTATION OF IRVISION PICTURE-RECOGNIZING PROCEDURE.....</b>	<b>159</b>
<b>Lidia ALEXA and Silvia AVASILCĂI</b> "Gheorghe Asachi" Technical University of Iasi <b>THE REQUIREMENT ELICITATION PROCESS OF DESIGNING A COLLABORATIVE</b> <b>ENVIRONMENT – THE CRE@TIVE.BIZ CASE.....</b>	<b>165</b>
<b>Elena GĂLĂȚEANU (AVRAM) and Silvia AVASILCĂI</b> "Gheorghe Asachi" Technical University of Iasi <b>VALUE CO – CREATION THROUGH CROWDSOURCING: THE CASE OF SQUADHELP</b> <b>COMPETITION PLATFORM.....</b>	<b>169</b>

<b>Ioan-Florin OARGA<sup>1</sup>, Mariana RAȚIU<sup>2</sup> and Ioan-Tudor OARGA<sup>1</sup></b>	
<sup>1</sup> Technical University of Cluj-Napoca, <sup>2</sup> University of Oradea	
<b>OCCUPATIONAL HEALTH AND SAFETY RISK MANAGEMENT.....</b>	<b>175</b>
<b>Tamás TEMPLOM<sup>1</sup>, Timotei István ERDEI<sup>1</sup>, Zsolt MOLNÁR<sup>1,*</sup>, Edwin SHAW<sup>2</sup> and Géza HUSI<sup>1</sup></b>	
<sup>1</sup> University of Debrecen, <sup>2</sup> London South Bank University.	
<b>DESIGNING A DELTA TRIPOD ROBOT BASED FUSED DEPOSITION MODELLING 3 DIMENSIONAL PRINTER USING AN OPEN-SOURCE ARDUINO DEVELOPMENT PLATFORM.....</b>	<b>179</b>
<b>Viktor VARGA, Timotei István ERDEI and Géza HUSI</b>	
University of Debrecen	
<b>REDESIGNING THE GRIPPING SYSTEM OF KUKA KR5 BY UTILIZING 3 DIMENSION PRINTING TECHNOLOGIES AND ARDUINO.....</b>	<b>183</b>
<b>Felicia Veronica BANCIU, Eugen PĂMÎNTAS</b>	
Politehnica University Timisoara	
<b>CHALLENGES IN ROMANIAN TECHNICAL HIGHER EDUCATION FROM THE PERSPECTIVE OF THE EUROPEAN REQUIREMENTS FOR ITS MODERNIZATION.....</b>	<b>189</b>
<b>Alexandru Ionut RADU<sup>1</sup>, Corneliu COFARU<sup>1</sup>, Bogdan TOLEA<sup>2</sup> and Dragoș DIMA<sup>1</sup></b>	
<sup>1</sup> University "TRANSILVANIA" of Brasov, <sup>2</sup> University of Oradea.	
<b>STUDY REGARDING THE INFLUENCE OF AIRBAG DEPLOYMENT TIME ON THE OCCUPANT INJURY LEVEL DURING A FRONTAL VEHICLE COLLISION.....</b>	<b>195</b>
<b>Daniela Mariana BARBU</b>	
Transilvania University of Brasov	
<b>ANDROID APPLICATION FOR OCULAR TRAINING IN AMBLYOPIA.....</b>	<b>201</b>
<b>Vlad Horațiu SÎRBU, Daniela Mariana BARBU</b>	
Transilvania University of Brasov	
<b>DEVICE FOR PERSONS WITH LOW VISION.....</b>	<b>205</b>
<b>Gina-Maria MORARU and Daniela POPA</b>	
Lucian Blaga University of Sibiu	
<b>ABSORPTION OF MANAGEMENT KNOWLEDGE IN ROMANIAN SMALL AND MEDIUM-SIZED ENTERPRISES.....</b>	<b>209</b>
<b>Gina-Maria MORARU and Daniela POPA</b>	
Lucian Blaga University of Sibiu	
<b>STRATEGIC MANAGEMENT PROBLEMS IN ROMANIAN SMALL AND MEDIUM-SIZED ENTERPRISES.....</b>	<b>213</b>
<b>Florina-Carmen CIORNEI<sup>1</sup>, Stelian ALACI<sup>1</sup>, Sorinel-Toderaș SIRETEAN<sup>1</sup> and Mariana-Cătălina CIORNEI<sup>2</sup></b>	
<sup>1</sup> Stefan cel Mare University, Suceava, <sup>2</sup> Carol Davila University of Medicine and Pharmacy, Bucharest.	
<b>AN IMPROVED MODEL FOR THE DAMPED IMPACT OF COMPOSITE MATERIALS APPLICABLE TO WIND TURBINE BLADES.....</b>	<b>217</b>
<b>Florina-Carmen CIORNEI<sup>1,*</sup> Stelian ALACI<sup>1</sup>, Sorinel-Toderaș SIRETEAN<sup>1</sup>, Mariana-Cătălina CIORNEI<sup>2</sup>, Ioan-Bogdan DRĂGOI<sup>1</sup> and Vlăduț-Constantin LAZĂR<sup>1</sup></b>	
<sup>1</sup> Stefan cel Mare University, Suceava, <sup>2</sup> Carol Davila University of Medicine and Pharmacy, Bucharest.	
<b>CONSIDERATIONS ON FINDING THE ROLLING AND SPINNING FRICTION COEFFICIENTS.....</b>	<b>225</b>
<b>Stelian ALACI<sup>1</sup>, Florina-Carmen CIORNEI<sup>1</sup>, Sorinel-Toderaș SIRETEAN<sup>1</sup> and Mariana-Cătălina CIORNEI<sup>2</sup></b>	
<sup>1</sup> Stefan cel Mare University, Suceava, <sup>2</sup> Carol Davila University of Medicine and Pharmacy, Bucharest.	
<b>GRAPHICAL-ANALYTICAL ANALYSIS OF THE MECHANISM WITH ROTATING CAM AND FLAT-FACE FOLLOWER.....</b>	<b>233</b>
<b>Dan Ioan ȚARCĂ<sup>1</sup>, Radu Cătălin ȚARCĂ<sup>2</sup> and Ioan Constantin ȚARCĂ<sup>2</sup></b>	
<sup>1</sup> Tarcă Dan Ioan, PFA, Oradea, Romania, <sup>2</sup> University of Oradea.	
<b>INTERNET OF THINGS AND MACHINE PARTS LABORATORY.....</b>	<b>237</b>

István KOVÁCS, Kornél SARVAJCZ University of Debrecen MODELLING AND SIMULATION OF A SERIES WOUND DIRECT CURRENT MOTOR USING ANSYS.....	241
Olga BUCOVETCHI <sup>1</sup> , Dorel BADEA <sup>2</sup> and Radu D. STANCIU <sup>1</sup> <sup>1</sup> University "Politehnica of Bucharest", <sup>2</sup> "Nicolae Bălcescu" Land Forces Academy, Sibiu BLOCKCHAIN TECHNOLOGY – A NEW APPROACH IN BUSINESS ENVIRONMENT.....	245
Dávid DEZSŐ and Kornél SARVAJCZ University of Debrecen MEASURING DRONE FLIGHT STABILITY USING COMPUTER VISION.....	249
Răzvan Mihai DOBRESCU, Cristina Petronela SIMION, Iuliana GRECU and Cristian Aurelian POPESCU Politehnica University of Bucharest STUDY ON THE DEGREE OF USE AND KNOWLEDGE OF DIGITAL MARKETING ELEMENTS IN ROMANIAN SMALL AND MEDIUM ENTERPRISES.....	255
Ciprian Cristea, Maria Cristea Technical University of Cluj-Napoca THE INFLUENCE OF DIVIDEND POLICY ON THE VOLATILITY OF SHARES IN THE ROMANIAN EQUITY CAPITAL MARKET.....	259
Lucian TARNU and Cristian DEAC Lucian Blaga University of Sibiu ANALYSIS OF THE EVOLUTION OF THE NUMBER OF FATAL ROAD ACCIDENTS IN ROMANIA.....	263
Lucian TARNU and Cristian DEAC Lucian Blaga University of Sibiu CONSIDERATIONS ON THE RIGHT OF WAY AS CAUSE OF ROAD ACCIDENTS IN ROMANIA.....	267
Alina Maria GLIGOR and Valentin PETRESCU Lucian Blaga University of Sibiu CONSIDERATIONS ON DETERMINING THE EXPLOSION RISK AND THE AREAS WITH EXPLOSION HAZARD IN A NATURAL GAS COMPRESSOR STATION.....	271
Alina Maria GLIGOR "Lucian Blaga" University of Sibiu CONSIDERATIONS ON THE AUTOMATION OF A NATURAL GAS COMPRESSOR STATION.....	275
Bence KOVÁCS, János TÓTH University of Debrecen HOMES OF THE FUTURE.....	279
Delia Marcela POP, Mircea Teodor POP University of Oradea MEASURING THE INNOVATION OF ECONOMY THROUGHT GLOBAL AND EUROPEAN TOOLS.....	283
Roxana ANDREIAS and Daniela Mariana BARBU Transilvania University of Brasov MECHATRONICAL SYSTEM USED FOR THE RECOVERY OF MOTOR FUNCTIONS.....	287
Constantin BUNGĂU, Ion Cosmin GHERGHEA University of Oradea ANALYSIS OF SUPPORTING INDICATORS FOR INNOVATION IN ROMANIA COMPARED TO NEIGHBORING EU COUNTRIES.....	291
Komal D/o Shoukat Ali KHUWAJA <sup>1</sup> , Brohi Arif ALI <sup>2</sup> , Vlad O. MIHALCA <sup>1</sup> and Radu Cătălin TARCA <sup>1</sup> <sup>1</sup> University of Oradea, <sup>2</sup> MUET Jamshoro, Pakistan AUTOMATIC FUEL TANK MONITORING, TRACKING & THEFT DETECTION SYSTEM.....	297

Ahmet Mehmet KARADENIZ, Ammar ALSABBAGH and Geza HUSI University of Debrecen	
COMPARISON OF PROPORTIONAL, INTEGRAL, DERIVATIVE AND FUZZY LOGIC APPROACHES ON CONTROLLING QUARTER CAR SUSPENSION SYSTEM.....	301
Corneliu COFARU, Mihaela Virginia POPESCU Transilvania University of Brasov	
RESEARCH ON COMBUSTION PROCESS OF GASOLINE HOMOGENOUS CHARGE COMPRESSION IGNITION ENGINE.....	305
Mihai Victor ZERBES, and Liliana Georgeta POPESCU Lucian Blaga University of Sibiu	
STUDY ON IMPROVING SILICONE LOSSES IN THE PROCESS OF MIXING COMPONENTS OF SOLDERING MACHINES.....	311
Gavril GREBENISAN, Nazzal Salem, Sanda Bogdan University of Oradea	
LUBRICANTS PARAMETERS MONITORING AND DATA COLLECTING.....	315
Gavril GREBENISAN, Nazzal Salem, Sanda Bogdan University of Oradea	
AN APPROACH OF CLASSIFICATION AND PARAMETERS ESTIMATION, USING NEURAL NETWORK, FOR LUBRICANT DEGRADATION DIAGNOSIS.....	321
Vlatko MARUŠIĆ, Predrag DAŠIĆ, Ivan OPAČAK Mechanical Engineering Faculty in Slavonski Brod	
THE POSSIBILITY OF EXTENDING WORK TIME OF TRIBOCOUPLE WELDING IMPROVED STAINLESS STEEL WITH IMPROVED CARBON STEEL.....	327
Raul TURMANIDZE, Predrag DAŠIĆ, and Giorgi POPKHADZE Georgian Technical University	
SELECTION CRITERIA OF OPTIMAL CHARACTERISTIC MATERIAL AND TECHNOLOGIES FOR PRECISION PROCESSING OF BASIC WORKING SURFACE OF HUMAN HIP-JOINT IMPLANT.....	333
Wadiee KHOURY, Aram NASSER and Peter Tamas SZEMES Debrecen University	
THREE PHASE INDUCTION MOTOR MODELING AND SPEED CONTROL USING VECTOR CONTROL IN LABVIEW.....	339
Wadiee KHOURY and Peter Tamas SZEMES Debrecen University	
ROBUST CONTROL SYSTEM DESIGN FOR A BRUSHED DC MOTOR USING LABVIEW SIMULATION LOOP.....	343