

Modern Technologies in Industrial Engineering VI (ModTech 2019)

IOP Conference Series: Materials Science and Engineering
Volume 591

Iasi, Romania
19 - 22 June 2019

Part 1 of 2

Editors:

Harit K. Raval
Makio Naito
Hong Seok Park
Demofilo Maldonado Cortes
Hilal Turkoglu
Sasmazel

Marek Placzek
Olivera Milosevic
Pavel Topala
Salam J. Bash Al Maliky
Dumitru
Nedelcu

ISBN: 978-1-5108-9463-1
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence. Licence details:
<http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2019)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

ENGINEERING OF MANUFACTURING PROCESSES

THIN FILMS DEPOSITION ON 304L STAINLESS STEEL USING E-GUN TECHNOLOGY FOR MEDICAL APPLICATIONS	1
<i>D Baila, S Tonoiu</i>	
AN APPROACH WITH GENETIC ALGORITHMS TO IMPROVE THE WORKSTATION SPACE PLANNING	7
<i>N Belu, E L Nitu, AC Gavriluta, L M Ionescu</i>	
INFLUENCE OF SEALING GASKET DISTORTION ON DIESEL ENGINE INJECTION PUMP MOUNTING	18
<i>D P Bistriceanu, C Bujoreanu</i>	
CLASSIC OR UNCONVENTIONAL COTTON YARNS?	27
<i>A Bucevschi, M S Fogorasi, C Nicolaescu, I Barbu</i>	
SOME ASPECTS OF PROTOTYPING OVERSIZED PARTS THROUGH POLYJET TECHNOLOGY	35
<i>C Carausu, R Negru, D A Serban, C Turc, G Belgiu</i>	
ANALYSIS OF CUTTING FORCES AND SURFACE QUALITY DURING FACE MILLING OF A MAGNESIUM ALLOY	45
<i>B Chirita, C Grigoras, C Tampu, E Herghelegiu</i>	
THIN COATINGS FOR PUMPING STATION MECHANICAL COMPONENTS	57
<i>C Cirlan Paleu, V Paleu, B Istrate, N Cimpoesu, C Munteanu</i>	
MANUFACTURING ANALYSIS WITH DISCRETE EVENTS USING IOT PLATFORM	67
<i>E M Ciortea</i>	
STUDY OF TENSILE BEHAVIOUR OF FE BASE SHAPE MEMORY ALLOYS DURING MECHANICAL CYCLING	73
<i>L Ciurca, N-M Lohan, B Pricop, L G Bujoreanu</i>	
SOME CONSIDERATIONS ON THE WELDING HEAT FLOW	80
<i>V Cohal</i>	
STUDY OF SOME HEAT TREATMENT EFFECTS ON THERMODYNAMIC AND STRUCTURAL PROPERTIES OF TI-TA BIOMEDICAL SHAPE MEMORY ALLOYS	86
<i>C Costache, V Apostol, B Pricop, N-M Lohan, R I Comaneci, L-G Bujoreanu</i>	
THE INFLUENCE OF THE SURFACE PREPARATION OF ALUMINIUM ALLOYS FOR BRAZING UPON THE HARDNESS OF THE ASSEMBLY	93
<i>A Dimitescu, AM Alecusan, C Babis, L Dascalu</i>	
MIXED-MODEL ASSEMBLY LINE BALANCING PROBLEM WITH TASKS ASSIGNMENT	101
<i>K Dziki, D Krenczyk</i>	
SUSTAINABLE ANTI-CORROSIVE PROTECTION TECHNOLOGIES FOR METAL PRODUCTS BY ELECTRODEPOSITION OF HEA LAYERS	109
<i>R M Florea, I Carcea</i>	
EFFECT OF GRAIN REFINEMENT ON MECHANICAL AND CORROSION BEHAVIOR OF AZ91 MAGNESIUM ALLOY PROCESSED BY ECAE	116
<i>M N Gajanan, S Narendranath, S S Satheesh Kumar</i>	
XPS, XRD, AND SEM CHARACTERIZATION OF THE VIRGIN AND RECYCLED METALLIC POWDERS FOR 3D PRINTING APPLICATIONS	123
<i>N E Gorji, R O'Connor, D Brabazon</i>	
MAG WELDING OF 960QL QUENCHED AND TEMPERED STEEL	129
<i>J Gorka, A Kotarska</i>	
THERMAL CUTTING OF THERMOMECHANICALLY ROLLED S700MC AND HEAT-TREATED S690QL STEELS	137
<i>J Gorka, T Poloczek</i>	
STUDY ON THE INFLUENCE OF THE WORKING REGIME ON THE QUALITY OF CUT IN THE CASE WATERJET PROCESSING OF S 235 STEEL	147
<i>E Herghelegiu, M C Radu, C Schnakovszky, B A Chirita, N C Tampu</i>	

SCUFFING ANALYSIS OF ROLLER-SHOE MECHANISM AFTER AN AGGRESSIVE TEST	154
<i>C R Iordache, F C Ciomei, C Bujoreanu</i>	
DEVELOPING STRUCTURES FOR THE CONSTRUCTION OF THE PROCESSING EQUIPMENT - CASE STUDY	164
<i>M D Iordache, A Costea, C Malea, E Nitu, A Rizea</i>	
INVESTIGATION OF MACHINING PARAMETERS ON CORNER ACCURACIES FOR SLANT TYPE TAPER TRIANGLE SHAPED PROFILES USING WEDM ON HASTELLOY X	172
<i>I V Manoj, R Joy, S Narendranath, D Nedelcu</i>	
EXPERIMENTAL RESULTS REGARDING INDUSTRIAL FILTRATION USING ULTRASONIC FILTERS	182
<i>D Nitoi, Gh Amza, V Petrescu, A Zoia, C Petriceanu</i>	
THEORETICAL AND EXPERIMENTAL CONTRIBUTIONS ON ULTRASONIC CONTACTLESS EXAMINATION OF UNDERGROUND PIPES THROUGH WHICH PRESSURIZED FLUIDS CIRCULATE	188
<i>D Nitoi, Gh Amza, V Petrescu, Z Amza, O Chivu</i>	
STUDY OF THE INFLUENCE OF SURFACE ROUGHNESS PARAMETERS ON THE FRICTIONAL CHARACTERISTICS OF MATERIALS	194
<i>L Pena-Paras, D Maldonado-Cortes, C Martinez, M Arias, A Ontiveros, B Castanos, M Morales-Martinez</i>	
PROCESSING EFFECTS ON TENSILE SUPERELASTIC BEHAVIOUR OF $Fe_{43.5}Mn_{34}Al_{15} \pm xNi_{7.5}$ SHAPE MEMORY ALLOYS	200
<i>M Popa, B Pricop, R-I Comaneci, G Gurau, M Vollmer, P Krooss, T Niendorf, L-G Bujoreanu</i>	
RESEARCH ON THE WELDING POSSIBILITIES OF DISSIMILAR WELDED JOINTS BETWEEN TWO SPECIAL ALLOYS	207
<i>C Rontescu, D T Cicic, D F Nitoi, C Petriceanu</i>	
AN ANALYSIS ON SOME MECHANICAL PROPERTIES OF ALMG10-SICP ULTRALIGHT METAL COMPOSITES	213
<i>O Rusu, I Rusu</i>	
MODELLING OF THE VISCO-ELASTIC PENDULAR HYBRID SYSTEM WITH DISSIPATIVE ROLLING ELEMENTS	219
<i>F Scheaua</i>	
NUMERICAL STUDY OF THE DYNAMIC CHARACTERISTICS OF A HYBRID STEEL-CONCRETE BRIDGE	227
<i>M C Scutaru, N Taranu, C C Comisu, G Boaca, D Ungureanu, I Hudisteanu</i>	
THE IMPACT OF SELECTED CNC MACHINING PARAMETERS ON THE SURFACE ROUGHNESS OF THE 7075 ALUMINIUM ALLOY	238
<i>M Sobek, L Grabowski</i>	
THE INFLUENCE OF THE ROLLING DIRECTION ON THE ELASTIC CHARACTERISTICS OF THE BENDING SAMPLES	245
<i>M D Stanciu, R. Bucur, H Draghicescu Teodorescu, A Savin</i>	
STUDY ON REDUCING POLLUTANT GASES AND PARTICULATE CONTENT INSIDE THE PASSENGER CAR	253
<i>A M Vranau, C Bujoreanu</i>	
 <u>ADVANCES IN COMPOSITE MATERIALS AND TECHNOLOGIES</u>	
THE BEHAVIOUR OF "LIQUID WOOD" WHEN EXPOSED TO SOME PHYSICO-CHEMICAL FACTORS	261
<i>M L Barhalescu, M Jarcau, M Poroch-Seritan, E Costescu, Dorin Vaideanu, T C Petrescu</i>	
EXPERIMENTAL RESEARCH ABOUT THE OBTAINING OF THE IRON SYNTHESIZED COMPOSITE MATERIALS	272
<i>R Caliman</i>	
EXPERIMENTAL RESEARCHES ON THE TRIBOLOGICAL ANALYSIS OF COMPOSITE MATERIALS SINTERED WITH IRON MATRIX	279
<i>R Caliman</i>	
NUMERICAL MODELLING OF STRUCTURAL BEHAVIOUR OF URM PANELS STRENGTHENED WITH CEMENT MATRIX COMPOSITES	285
<i>D A Ghiga, N Taranu, D Ungureanu, DN Isopescu, MC Scutaru, I Hudisteanu</i>	
INTERLAMINAR FAILURE INVESTIGATIONS ON DELAMINATION GROWTH OF COMPOSITE LAMINATES	295
<i>I Hudisteanu, N Taranu, D N Isopescu, V Munteanu, D Ungureanu, M C Scutaru</i>	

COMPARATIVE STUDY ON ANTIBALLISTIC BEHAVIOUR OF ALMG10-SICP TYPE CELLULAR ULTRALIGHT COMPOSITE METAL MATERIALS	305
<i>O Rusu, I Rusu</i>	

CHARACTERIZATION, MODELING AND SIMULATION OF MECHANICAL PROCESSES

NOVEL APPROACH TO SEMI-AUTOMATED WAREHOUSE FOR MANUFACTURING: DESIGN AND SIMULATION	311
<i>T Bartkowiak, T Kunc, K Kluska, A Myszkowski, S Pabiszczak</i>	
EVALUATION OF THE PERFORMANCE OF AN AUTOMATED METALLOGRAPHIC SAMPLES ANALYSIS SYSTEM BY MEANS OF PETRI NETS MODELLING	321
<i>F S Blaga, T Vesselenyi, M P Ursu, V Hule, I Stanasel</i>	
ANALYTICAL AND GRAPHICAL MODELLING OF THE CUTTING SCHEME WHEN GENERATING WITH A PINION CUTTER	330
<i>M Bordeanu, G Frumusanu, N Oancea</i>	
STUDY ON THE INFLUENCE OF THE BLANK THICKNESS ON THE DYNAMIC BEHAVIOR OF MECHANIC ECCENTRIC PRESSES	337
<i>C Burlacu</i>	
A NUMERICAL APPROACH IN THE ASSESSMENT OF A NEW CLASS OF FLUIDS PERFORMANCE IN LAMINAR FLOW	345
<i>E I Chereches, M Chereches, A A Minea, J I Prado, L Lugo</i>	
CONSIDERATIONS ON LONGITUDINAL DYNAMIC EFFECTS OF UNBRAKED VEHICLE IN PASSENGER TRAIN COMPOSITION – PARAMETRIC STUDY	353
<i>C Cruceanu, C Craciun</i>	
ASSESSMENT OF THE REHABILITATION BENEFITS BY FINITE ELEMENT METHOD	369
<i>A Dimitrescu, C Babis, O Chivu, L Dascalu</i>	
MODELING OF STRESS AND STRAIN STATES INDUCED BY TORSION OF STRAIGHT RODS WITH ELLIPTICAL CROSS SECTIONS	377
<i>M Glovnea, C Manolache-Rusu, C Suciu</i>	
THEORETICAL ASPECTS REGARDING THE STRAIGHT ROD WITH ELLIPTICAL CROSS SECTION SUBJECTED TO TORSION	387
<i>M Glovnea, C Manolache-Rusu, C Suciu</i>	
CFD ANALYSIS OF A HYBRID, DARRIEUS-SAVONIUS, HORIZONTAL WIND TURBINE, USING STATIC AND MOVING MESH	398
<i>L Grabowski, M Sobek, A Baier</i>	
CLASSIC SPARK SIMULATION USING COMSOL SOFTWARE	405
<i>B Hnatiuc, A Sabau, D Astanei</i>	
NONDESTRUCTIVE TESTING SENSOR USING SEMIREGULAR ARCHITECTURE WITH FOLDING LIGAMENTS	416
<i>N Iftimie, A Savin, R Steigmann, M D Stanciu</i>	
A SLIDING GRID BASED METHOD FOR THE ROLL DECAY SIMULATION	422
<i>A Lungu</i>	
DES-BASED COMPUTATION OF THE FLOW AROUND THE DARPA SUBOFF	432
<i>A Lungu</i>	
INFLUENCE OF THE ELECTRIC DISCHARGE AND THE POWER SUPPLY ON THE AQUEOUS SOLUTION INTERFACE PARAMETERS	441
<i>C V Lungu, B Hnatiuc</i>	
THE USE OF THE NX MECHATRONIC MODULE TO SIMULATE OF A SIMPLE MACHINE WORK	454
<i>K Lysek, A Gwiazda, K Herbus</i>	
PRELIMINARY STUDIES ON THE BRAKING EFFICIENCY OF AN ENGINE WORKING IN COMBINED JAKE BRAKE AND EXHAUST BRAKE REGIME	461
<i>I C Manolache-Rusu, M Glovnea, C Suciu</i>	
DETERMINATION OF MATERIAL CONSTANTS FOR HIGH STRAIN RATE CONSTITUTIVE MODEL OF HIGH ENTROPY ALLOYS	470
<i>L C Matache, P Lixandru, T Chereches, A Mazuru, D Chereches, V Geanta, I Voiculescu, E Trana, A N Rotariu</i>	
DETERMINATION OF A METHODOLOGY FOR FORMULATING CONSTITUENT MODELS OF HIGH ENTROPY ALLOYS	483
<i>L C Matache, T Chereches, P Lixandru, A Mazuru, D Mitrica, E Trana, P Somoiag, A N Rotariu</i>	

PART 2

ON THE BENDING VIBRATION OF A TRAIN DRIVING WHEELSET	493
<i>T Mazilu, M A Gheti</i>	
SPEARMAN'S RHO MODIFICATION IN DIGITAL IMAGE PROCESSING	500
<i>B Nalepa, A Gwiazda</i>	
INCLUDING GNU OCTAVE IN A NUMERICAL PROGRAMMING C++ RAPID DEVELOPMENT SOFTWARE CONTEXT FOR RESEARCH MODELS.....	509
<i>E Oanta, A Pescaru</i>	
A FLUID FLOW SIMULATION IN THE COOLING SYSTEMS OF THE METAL CUTTING PROCESS.....	528
<i>I Olaru</i>	
BIG DATA ANALYTICS WITH GRAPHICAL TECHNIQUES APPLIED ON SENSORS DATA	534
<i>M L Oroian-Boca</i>	
ANALYSIS OF THE NOISE EMISSIONS OF A COMMON-RAIL PUMP BEFORE AND AFTER AN ENDURANCE TEST.....	542
<i>N D Petrea, C Bujoreanu, S Alaci</i>	
INCREMENTAL FORMING – CAE/CAM APPROACHES AND RESULTS.....	550
<i>G S Racz, V S Oleksik, R E Breaz</i>	
HEAT TRANSFER ORIGINAL STUDIES –THEORY AND APPLICATIONS.....	559
<i>A Raicu, M Barhalescu, F Memet</i>	
SIMPLIFIED COMPUTER CODE FOR MODELLING FUEL JET	572
<i>A Sabau</i>	
VISCOUS FLUID DISSIPATION SYSTEM MODEL ACTING ON THE ACTIVE PRINCIPLE	584
<i>F Scheaua</i>	
THE FRICTIONAL CONTACT OF COATED BODIES. PART I – THE SLIDING CONTACT	591
<i>S Spinu, D Cerlinca, I Musca</i>	
THE FRICTIONAL CONTACT OF COATED BODIES. PART II – THE SLIP-STICK CONTACT	600
<i>S Spinu, D Cerlinca, I Musca</i>	
STATISTICAL CONTROL OF FORMING PROCESS	608
<i>V G Teodor, V Paunoiu, C Carausu, N Baroiu, G A Costin</i>	
FUZZY MODELING OF DEPENDABILITY OPTIMIZATION FOR SUPPORTING THE PRODUCTION-QUALITY STRATEGIES - CASE STUDY IN TECHNICAL FIELD	616
<i>A Vilcu, I Verzea, M Pislaru, I Herghiligiu</i>	
ACOUSTIC PRESSURE AND FLAME GENERATION DETERMINATIONS IN CASE OF MECHANICAL AND GAS-DYNAMIC PROCESSES FOR SMALL CALIBER WEAPONS	626
<i>N-D Zvincu, A-D Mandache-Dodoiu, G-D Nistoran, L O Haller</i>	

ROBOTICS AND COMPUTER INTEGRATED MANUFACTURING

PROGRAMMING AND WIRELESS CONTROL OF A WAFER MANIPULATION SCARA ROBOT USING A MOBILE DEVICE.....	635
<i>G C Coman, L Stan, A M Ivan, A F Nicolescu, B Verdete</i>	
VIRTUAL PROTOTYPING, PHYSICAL STRUCTURE DEVELOPMENT AND PC CONTROL OF A DOUBLE ARM (FIVE LINK) SCARA ROBOT	641
<i>G C Coman, C Serban, A M Ivan, A F Nicolescu</i>	
A ONE-DEGREE-OF FREEDOM ANKLE REHABILITATION PLATFORM.....	650
<i>I Doroftei, C M Racu, C Honceriu, D Irimia</i>	
STRUCTURAL AND KINEMATIC ASPECTS OF SOME BAR MECHANISMS FOR DEPLOYABLE STRUCTURES	657
<i>I A Doroftei, C Bujoreanu, I Doroftei</i>	
A NEW APPROACH TO CREATE A REALISTIC VIRTUAL MODEL OF A CYLINDRICAL ROBOT USING AUTOMATION STUDIO	667
<i>C C Dosoftei, A Lupu, C M Pascal</i>	
ANALYSING THE INFLUENCE OF A RADIAL COMPLIANT TOOL IN ROBOTIC MILLING OPERATIONS.....	675
<i>A M Ivan, R C Parpala, C G Coman</i>	
COMPARATIVE ANALYSIS BETWEEN USING AN ARTICULATED ARM ROBOT AND A CONVENTIONAL MACHINE IN MILLING APPLICATIONS.....	688
<i>A M Ivan, R C Parpala, C G Coman, A F Nicolescu</i>	

RESEARCH ON THE INFLUENCE OF STRAIGHTNESS DEVIATIONS ON POSITIONING PRECISION OF CARTESIAN INDUSTRIAL ROBOTS	697
<i>A Luncanu, G Stan</i>	
ON DESIGNING AN AUTOMATED TOOL FOR CAPACITORS REMOVAL FROM WASTE PRINTED CIRCUITS BOARDS	704
<i>C Siamate, I Doroftei, D Chirita, A Burlacu</i>	

MANAGEMENT OF INDUSTRIAL PROCESSES

STUDY ON THE AERODYNAMIC FORCE WHICH ACTS IN THE CASE OF A TRAIN TYPE MULTIPLE UNIT ELECTRIC	711
<i>S Arsene, I Sebesan, I Manea</i>	
INFLUENCES OF THE CIRCULAR ECONOMY IN INDUSTRIAL ENGINEERING	717
<i>C Botezatu, B Oroian, A Hrituc, I Condrea</i>	
THE IMPACT OF OPEN INNOVATION ON PRODUCT DEVELOPMENT: INNOVATION VERSUS CREATIVE ECOSYSTEMS	724
<i>A Bujor, S Avasilcai, C A Hutu, E Avram</i>	
ASSESSMENT OF AN ACCIDENT RISK INTO AN INDUSTRIAL BUILDING SITE	731
<i>D Cojocaru, Gh Solomon, M C Dijmarescu</i>	
REDUCING THE URBAN POLLUTION BY INTEGRATING WEIGH-IN-MOTION SENSORS INTO INTELLIGENT TRANSPORTATION SYSTEMS. STATE OF THE ART AND FUTURE TRENDS	737
<i>A I Dontu, L Gaiginschi, P D Barsanescu</i>	
CONSIDERATIONS OF THE ENERGY BALANCE OF AN INTERNAL COMBUSTION ENGINE AND THE RECOVERY OF HEAT LOST THROUGH THE COOLING WATER	743
<i>C Faitar, A T Nedelcu, N Buzbuchi, L Stan, L M Dumitrache</i>	
ENERGY CONSUMPTION AND CO₂ AND NOX EMISSIONS MINIMISED IN AN INTERMITTENT CERAMIC KILN – "ECONOMICK KILN"	753
<i>A Fortuna, D M Fortuna, E Martini, A Pozzovivo</i>	
THE TREND OF HIGHER ENGINEERING EDUCATION TOWARDS ACHIEVING TECHNOLOGICAL DEVELOPMENT	763
<i>V Garbuz, P Topala</i>	
DEVICE FOR THE STUDY OF THE FRICTION COEFFICIENT IN THE BOLT-CHAIN LINK JOINT	775
<i>C C Gavrilă, M T Lates</i>	
MANAGEMENT ELEMENTS OF CONCEPTION AND DEVELOPMENT OF SCIENTIFIC RESEARCH PROJECTS	783
<i>A Ioana, M Costoiu, D Tufeanu, A Semenescu, D Marcu</i>	
FRICTION PHENOMENON STUDY FOR CHAIN LINK – GUIDE CONTACT IN TRANSLATIONAL OSCILLATORY MOTIONS	789
<i>M T Lates, C C Gavrilă</i>	
A THERMODYNAMIC OPTIMIZATION OF A GAS TURBINE CYCLE WITH A SUPPLEMENTARY REGENERATOR	797
<i>F Memet, C Făitar</i>	
LEAN LEARNING FACTORY AT THE UNIVERSITY OF PITESTI	804
<i>E L Nitu, A C Gavrilă</i>	
A METHODOLOGY FOR INTELLIGENT MONITORING THE VIBRATIONS OF AN ASYNCHRONOUS MOTOR	818
<i>V Popa, L Popa</i>	
AUTOMATION OF THE LAMINATION PROCESS FOR AUTOMOTIVE APPLICATIONS	827
<i>L Popa, V Popa</i>	
THE STUDY OF THE TRACTION BEHAVIOUR OF KNITTED STRUCTURES WITH CONTROLLED DIMENSIONAL STABILITY	838
<i>M Szabo, R M Babanatis-Merce, I Barbu, T Babanatsas, L Jitaru</i>	
STUDY OF DIMENSIONAL CHANGES DURING WASHING PROCESS FOR 1:1 INTERLOCK COTTON YARNS	844
<i>M Szabo, R M Babanatis-Merce, I Barbu, T Babanatsas, L Jitaru</i>	
THE UNIVERSITIES' CONTRIBUTION TO ECONOMIC PROSPERITY THROUGH TECHNOLOGY TRANSFER	852
<i>N Taousanidis, A Taousanidis</i>	

METHOD FOR AVOIDING CRACKS DURING DRYING OF MASONRY UNITS MADE OF ILLITE RAW MATERIAL	860
<i>M Vasic, Z Radojevic</i>	

MATERIALS AND TECHNOLOGIES IN MARINE ENGINEERING

URANSE SIMULATION FOR THE SEAKEEPING OF THE KVLCC2 SHIP MODEL IN SHORT AND LONG REGULAR HEAD WAVES	867
<i>A Bekhit, A Lungu</i>	
ON A SMALL SIZE FLOATING DOCK STRUCTURAL ANALYSIS IN OBLIQUE DESIGN WAVES BY 3D-FEM APPROACH.....	879
<i>E Burlacu, L Domnisoru</i>	
THE STRUCTURAL EVALUATION OF A LARGE FLOATING DOCK IN HEAD DESIGN WAVES BY STRENGTH CRITERIA	888
<i>E Burlacu, L Domnisoru</i>	
USING STEP-BY-STEP ENGINES TO DETERMINE THE COURSE OF THE SHIP	897
<i>V-V Ciucur</i>	
NUMERICAL STUDY OF A CONTAINER SHIP MODEL FOR THE UNCOUPLED PARAMETRIC ROLLING	903
<i>D Deleanu, C L Dumitrache</i>	
FLUID STRUCTURE INTERACTION (FSI) ANALYSIS ON BALLAST TANK IN-LINE EJECTOR	913
<i>C L Dumitrache, D Deleanu</i>	
CONSIDERATIONS UPON THE PERFORMANCES OF THE MAIN NAVAL ENGINE AND ENERGY EFFICIENCY EVALUATION.....	920
<i>C Faitar, F Memet</i>	
BARGE'S STUDY UNDER IMPACT LOADS.....	932
<i>M Nechita, C I Mocanu</i>	
THE VEHICLE MOVEMENT USING COMPUTATIONAL FLUID DYNAMICS METHOD	939
<i>A-T Nedelcu, C Faitar, L Stan, N Buzbuchi, L M Dumitrache</i>	
NUMERICAL INVESTIGATION ON FAST DISPLACEMENT SHIP HYDRODYNAMICS	951
<i>S Pacuraru, F Pacuraru, A Presura</i>	
IMPROVING THE HYDRODYNAMICS PERFORMANCE OF THE CATAMARAN PASSENGER	958
<i>F Pacuraru, A Mandru</i>	
VALIDATION OF POTENTIAL FLOW METHOD FOR SHIP RESISTANCE PREDICTION.....	966
<i>F Pacuraru</i>	
HARMONIZATION OF RESOURCES AND TECHNOLOGIES OF TRANSPORT MODES AT THE TERMINAL LEVEL IN A LOGISTICS NETWORK	974
<i>V G Stinga</i>	
Author Index	