ISSN: 1231-4005 e-ISSN: 2354-0133

## LIST OF PAPERS

HUSAINI ARDY, SUBAWA PUTRA, TOTO HARDIANTO FAILURE OF GAS TURBINE CONE BURNER BY CARBURIZATION	9
Piotr Bajurko, Kamila Czajkowska, Piotr Czarnocki, Daniel Szeląg NUMERICAL SYMULATION OF FATIGUE DELAMINATION GROWTH UNDER MODE I LOADING CONDITIONS	17
WŁODZIMIERZ BALICKI, ANDRZEJ IRZYCKI, BORYS ŁUKASIK, KRZYSZTOF SNOPKIEWICZ TESTING OF INITIATION OF ROTATING DETONATION PROCESS IN HYDROGEN-AIR MIXTURES	25
Wiesław Barnat, Marek Kordys, Wojciech Moćko, Paweł Dybcio, Robert Panowicz NUMERICAL SIMULATION OF DYNAMIC WELD COMPRESSION	35
PAWEL BOGUSZ, WIESŁAW KRASOŃ, JÓZEF WYSOCKI EXPERIMENTAL INVESTIGATIONS OF DOUBLE MULTI-LEAF SPRING SUBJECTED TO IMPACT LOAD	45
TADEUSZ BORKOWSKI, PRZEMYSŁAW KOWALAK, JAROSŁAW MYŚKÓW VESSEL MAIN PROPULSION ENGINE PERFORMANCE EVALUATION	53
HENRYK BOROWCZYK, PAWEŁ LINDSTEDT, JERZY MANEROWSKI NEWTONIAN AND BERGSONIAN TIME IN TECHNICAL DIAGNOSTICS	61
GRZEGORZ BORUTA, PIOTR DROGOSZ, SZYMON NITKIEWICZ, ANDRZEJ PIĘTAK POSSIBILITIES OF APPLICATIONS OF STIRLING ENGINE IN COGENERATION SYSTEMS	67
GRZEGORZ BUDZIK, KRZYSZTOF KUBIAK, JACEK BERNACZEK, MAREK MAGNISZEWSKI, HUBERT MATYSIAK, RAFAŁ CYGAN, MARCIN TUTAK HYBRID METHOD FOR RAPID PROTOTYPING OF CORE MODELS OF AIRCRAFT ENGINE BLADES	77
ADAM CHARCHALIS THE PROBLEM OF NOT DRIVEN PROPELLERS IN MULTI-SCREW SHIPS PROPULSION ARRANGEMENTS	83
STEFAN CHWASTEK THE FREQUENCY CONVERTER CONTROL METHOD IN POSITIONING AND STABILISATION OF A PLATFORM SUSPENDED ON ROPES IN CONDITIONS OF A TIME-VARIANT CENTRE OF GRAVITY	87
MARIUSZ CYGNAR	
ANALYSIS OF PARAMETERS OF THE ENGINE WORKING IN TWO THERMODYNAMIC CYCLES	95

Mirosław Czechowski	
LOW-CYCLE FATIGUE OF AI-Mg ALLOY JOINTS	103
JAN CZERWINSKI, PIERRE COMTE, ANDREAS MAYER, FELIX REUTIMANN CHANGES OF THE 2-STROKE AEROSOL IN THE EXHAUST SAMPLING SYSTEM MIROSŁAW DERESZEWSKI, ADAM CHARCHALIS, STANISLAW POLANOWSKI EVALUATION OF DIAGNOSTIC INFORMATION ABOUT MARINE ENGINE WORK BASED ON MESUREMENT OF THE ANGULAR SPEED DISCRETE VALUE	109 121
KRZYSZTOF DUDZIK, ADAM CHARCHALIS, WOJCIECH JURCZAK MICROSCOPIC EXAMINATION OF AlZn5Mg1 ALLOY JOINTS WELDED BY FSW AND MIG	129
TOMASZ DYL EFFECT OF RELATIVE STRAIN RATIO ON THE REDUCE ROUGHNESS SURFACE LAYER TUBE HOLES AFTER BURNISHING PROCESS	137
WOJCIECH FRĄCKOWIAK INFLUENCE OF ENVIRONMENTAL, ERGONOMIC FACTORS AND PROPERTIES OF OPERATORS ON THE RELIABILITY OF SHIPS PROPULSION SYSTEMS	145
WŁODZIMIERZ FREDA, ZBIGNIEW OTREMBA MARITIME TRANSPORT - AN ENVIRONMENTAL PROBLEM WITH BALLAST WATER: TECHNICAL PREVENTIVE MEASURES	153
MARCIN FRYCZ EFFECT OF CONCENTRATION OF MAGNETIC PARTICLES ON FERROOIL'S DYNAMIC VISCOSITY AS A FUNCTION OF TEMPERATURE AND SHEAR RATE	159
ANDRZEJ GĄGOROWSKI CONTINUOUS DESCENT APPROACH: NOISE TEST FOR WARSAW INTERNATIONAL AIRPORT	167
WOJCIECH GIS, ANDRZEJ ŻÓŁTOWSKI, PAULINA LUIZA GRZELAK BIOMETHANE AS A FUEL FOR CITY TRANSPORT	175
RAFAŁ GRĄDZKI INFLUENCE OF DIAGNOSTIC SIGNAL SAMPLING FREQUENCY ON ROTOR BLADE TECHNICAL CONDITION IMAGES DETERMINED FROM PHASE SHIFT DIFFERENCE	181
ANDRZEJ GRZĄDZIELA MODEL OF IMPACT UNDERWATER DETONATION	191
JERZY HERDZIK ASPECTS OF USING LNG AS A MARINE FUEL	201
JERZY HERDZIK CHALLENGES OF SHIP PROPULSION SYSTEMS DURING DP OPERATIONS	211
JERZY HERDZIK POSSIBILITIES OF IMPROVING SAFETY AND RELIABILITY OF SHIP PROPULSION SYSTEM DURING DP OPERATIONS	219

Antoni Iskra, Maciej Babiak, Jarosław Kałużny, Michael Giersig, Krzysztof Kempa	
COMPARING THE RESISTANCE TO MOTION OF PISTONS COATED WITH A LAYER OF NANOTUBES WITH STANDARD PISTONS	227
ROBERT JAKUBOWSKI MODELING AND ANALYSIS OF JET ENGINE WITH COOLING TURBINE	235
SŁAWOMIR KLIMASZEWSKI, MARTA WOCH MODIFIED HAGG & SANKEY METHOD TO ESTIMATE THE BALLISTIC BEHAVIOUR OF LIGHTWEIGHT METAL/COMPOSITE/CERAMIC ARMOUR AND A FUSELAGE SKIN OF AN AIRCRAFT	245
BOGDAN KOZIK, GRZEGORZ BUDZIK, TADEUSZ MARKOWSKI, TOMASZ DZIUBEK, MIROSŁAW GRZELKA THE ANALYSIS OF PRECISION OF MAKING ELEMENTS FOR AERONAUTICAL DUAL-POWER PATH GEAR DEMONSTRATOR APPLYING VENTURE BATY COORDINATE MEASURING MACHINE	253
Konrad Krakowian, Andrzej Kaźmierczak, Aleksander Górniak, Radosław Włostowski, Tomasz Błasiński EXHAUST GAS DOSE UNIFORMITY IN MODERN DIESEL ENGINES	259
RAFAŁ KRAKOWSKI EFFECT OF ELEVATED COOLANT TEMPERATURE ON THE EXHAUST COMPOSITION OF PISTON INTERNAL-COMBUSTION ENGINE	263
ARTUR KUŁASZKA, JÓZEF BŁACHNIO, DARIUSZ ZASADA, PAWEŁ JÓŹWIK THE ASSESSMENT OF CHANGES IN THE MICROSTRUCTURE OF A GAS TURBINE BLADE WITH A NON-DESTRUCTIVE THERMOGRAPHIC METHOD	271
WOJCIECH LABUDA, ADAM ADAM CHARCHALIS THE ANALYSIS OF FINISHING TOOLING INFLUENCE ON CORROSION PROPERTIES RESEARCHED BY POTENTIODYNAMIC METHOD	283
Sergejus Lebedevas, Galina Lebedeva, Justas Žaglinskis RESEARCH OF USAGE OF RRME AND ALCOHOL BIOFUEL MIXTURE IN DIESEL ENGINE	289
PAWEŁ LINDSTEDT, TOMASZ SUDAKOWSKI THE ASSESSMENT OF OBJECT USABILITY ON THE BASIS OF INSTANTANEOUS VALUES OF TECHNICAL CONDITION AND REGULATION STATE PARAMETERS	305
Borys Łukasik, Artur Rowiński, Andrzej Irzycki, Krzysztof Snopkiewicz STUDY OF COMBUSTION CHAMBER WITH A ROTATING DETONATION Danuta Miedzińska	313
NUMERICAL STUDY ON CLOSED CELL FOAM STRUCTURE DAMAGE MECHANISMS	321
ANDRZEJ MISZCZAK OPERATING PARAMETERS OF SLIDE MICRO-BEARINGS WITH CONSIDERATION OF OIL TEMPERATURE CHANGES AND MICRO-GROOVES ON SLEEVE SURFACE	329

Władysław Mitianiec, Łukasz Rodak LOWERING OF EXHAUST EMISSION IN MODERN TWO-STROKE ENGINE	337
Wojciech Moćko , Zbigniew L. Kowalewski DYNAMIC PROPERTIES OF ALUMINIUM ALLOYS USED IN AUTOMOTIVE INDUSTRY	345
HARI MUHAMMAD, HUYNH PHUOC THIEN AND TAUFIQ MULYANTO MATHEMATICAL MODELING, SIMULATION AND IDENTIFICATION OF MICRO COAXIAL HELICOPTER	353
GABRIEL NOWACKI SELECTED PROBLEMS OF TERRORIST THREATS TO THE TRANSPORT INFRASTRUCTURE	365
ZBIGNIEW OTREMBA THE EUROPEAN CONTROLLING SYSTEM TO REDUCE OIL DISCHARGES IN THE SEA	375
Vishnu Padmanaban, Ajaykrishna Ramasubramanian, Thirumalini Subramaniam	
INVESTIGATION ON USE OF PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV) TECHNOLOGY USING RENEWABLE ENERGY FOR AN AUTORICKSHAW	383
TOMASZ PAŁCZYŃSKI A BOUNDARY CONDOTIONS AT MODELING 1-D PULSATING FLOWS IN PIPES ACCORDING TO THE METHOD OF CHARACTERISTICS	395
JACEK PIETRASZEK, WITOLD GRZEGOŻEK, JAROSŁAW SZCZYGIEŁ FORECASTING OF SUBJECTIVE COMFORT IN TRAM USING ORDINAL LOGISTIC REGRESSION AND MANIFOLD LEARNING	403
Marián Polóni, Ján Lach, Andrej Chríbik RESEARCH AND DEVELOPMENT OF COMBUSTION ENGINE FOR MICRO-COGENERATION UNIT	411
Grzegorz Przybyła, Stefan Postrzednik, Zbigniew Żmudka ENERGY ANALYSIS OF A SMALL CAPACITY SI ENGINE FUELED WITH LEAN AIR GAS MIXTURE	423
SRI RAHARNO, YATNA YUWANA MARTAWIRYA DEVELOPMENT OF APPLICATION SOFTWARE FOR DEFINING PROFESSIONS WITH 3 LANES ON AN AUTOMOBILE ASSEMBLY INDUSTRY	433
JAN ROSŁANOWSKI, ADAM CHARCHALIS LOAD ANALYSIS OF PROPULSION ENGINE DURING SHIP'S SPEED ACCELERATION	443
EWA ROSTEK, KRZYSZTOF BIERNAT ANALYSIS OF THE QUALITY PARAMETERS OF SELECTED MOTOR BIOFUELS, TAKING INTO ACCOUNT THE CURRENT REQUIREMENTS OF THE WORLDWIDE FUEL CHARTER	449
ARTUR ROWIŃSKI, ANDRZEJ IRZYCKI, KRZYSZTOF SNOPKIEWICZ HIGH SPEED ELECTROMECHANICAL ENERGY STORAGE	459

PIOTR RESZKA, LUDWIK KANIA, RAFAŁ PYTLARZ NUMERICAL ANALYSIS OF THE SCREW CONNECTION WITH PRELOAD TENSION USED IN THE MOUNTING OF SLEWING BEARINGS	465
KAMILA RUDŹ, MIROSŁAW DARECKI, HENRYK TOCZEK MODELLING OF SEAWATER POLLUTED BY LIGHT AND HEAVY CRUDE OIL DROPLETS	473
MARCIN RYCHTER POSSIBILITIES OF MANIPULATING RECOMMENDATIONS OF ELEMENTS OF THE DIGITAL TACHOGRAPHS SYSTEM AND WAYS OF PREVENTING THIS ACTION	481
KRZYSZTOF SICZEK THE RESEARCHES ON THE FRICTION PROPERTIES OF nc-WC/a-C COATING ON THE LIGHTWEIGHT VALVE STEM	493
Przemyslaw Siminski FEASIBILITY STUDY OF MILITARY VEHICLES IN SHORT MODE	501
Mirosław Szubartowski EFFICIENCY OF REPAIRS PERFORMED WITHIN THE EMERGENCY REPAIR SUBSYSTEM OF MUNICIPAL BUS TRANSPORTATION SYSTEM	507
PIOTR SZURGOTT MODELLING AND NUMERICAL ANALYSIS OF THE REINFORCED CONCRETE VIADUCT UNDER THE EUROCITY EC-114 TRAIN	515
HENRYK TOMASZEK, RYSZARD KALETA, MARIUSZ ZIEJA HOW TO FORMULATE RATES TO ASSESS OPERATIONAL EFFECTIVENESS OF MILITARY AIRCRAFT – AN INTRODUCTION	525
Maria Trzaska, Zdzisław Trzaska THE TIME DOMAIN ANALYSIS OF INTERACTIONS IN THE WHEEL – RAIL CONTACTS DUE TO DISCONTINUOUS TIME PERIODIC LOADS	531
Krzysztof Wierzcholski SOLUTIONS OF RECURRENCE AND SUMMATION EQUATIONS AND THEIR APPLICATIONS IN SLIDE BEARING WEAR CALCULATIONS	543
KAZIMIERZ WITKOWSKI RESEARCH ON INFLUENCE OF SELECTED CONTROL PARAMETERS OF THE INJECTION SYSTEM MARINE DIESEL ENGINE ON ITS EXHAUST GAS TOXICITY	551
Andrzej Wolff INFLUENCE OF ENGINE LOAD ON PISTON RING PACK OPERATION OF A MARINE TWO-STROKE ENGINE	557
PIOTR WYGONIK INFLUENCE OF THE GAS TURBINE ENGINE DESIGN PARAMETERS ON THE ENERGY CONSUMPTION OF THE MULTIROLE AIRCRAFT MISSIONS	560

AGATA ZAŁĘSKA-FORNAL, LESŁAW KYZIOŁ	
THE ANALYSIS OF PROPERTIES OF PLATERS USED FOR THE STRUCTURAL-BALLISTIC SAFETY SHIELDS IN MARINE VESSELS	577
PIOTR ŻACH THE HYPERDEFORM MATERIALS IN SYSTEMS OF VIBRATIONS MACHINES	585
Bogdan Zółtowski	
THE INVESTIGATION OF THE TECHNICAL CONDITION OF RAILWAY SYSTEMS	591
OF KAIL WAT STSTEMS	391