

## LIST OF PAPERS

ANDREY BABUSHKIN, OLEG KOSOV, VICTOR SHEKHOVTSOV, MIKHAIL LYASHENKO THE OPTIMIZATION OF THE DESIGN STRENGTH CHARACTERISTICS OF THE FRAME OF THE TRACTOR	11
KAZIMIERZ BACZEWSKI, PIOTR SZCZAWIŃSKI INVESTIGATION PROPERTIES OF RAPESEED OIL METHYL ESTERS/AVIATION TURBINE FUEL JET A-1 BLENDS	15
PAWEŁ BARANOWSKI, JERZY MAŁACHOWSKI NUMERICAL INVESTIGATIONS OF TERRAIN VEHICLE TIRE SUBJECTED TO BLAST WAVE	23
WIESŁAW BARNAT, ROBERT PANOWICZ, TADEUSZ NIEZGODA, PAWEŁ DYBCIO A NUMERICAL ANALYSIS OF INITIAL AND BOUNDARY CONDITIONS INFLUENCE ON THE CREW OF TRACKED VEHICLE AND THE GROUND	31
WIESŁAW BARNAT, ROBERT PANOWICZ, TADEUSZ NIEZGODA INFLUENCE OF ARMOURED VEHICLE'S BOTTOM SHAPE ON THE PRESSURE IMPULSE	39
ADAM BARTNICKI STRENGTH TESTS OF FOLDING BRIDGES' SPANS	47
KRZYSZTOF BASZUK, LESZEK SZCZĘCH INVESTIGATION OF THE UNMANNED VEHICLE HYBRID PROPULSION SYSTEM	53
ZDZISŁAW BOGDANOWICZ, KRZYSZTOF GRZELAK LASER REBUILDING OF ENGINE EXHAUST VALVES	57
WAĆLAW BORKOWSKI, ZDZISŁAW HRYCIÓW, BOGUSŁAW MICHAŁOWSKI, PIOTR RYBAK, ANDRZEJ WIŚNIEWSKI, JÓZEF WYSOCKI EXPERIMENTAL RESEARCH ON THE DYNAMIC LOADS OF THE WHEELED ARMOURED PERSONNEL CARRIER	69
WAĆLAW BORKOWSKI, PIOTR RYBAK, ZDZISŁAW HRYCIÓW, JÓZEF WYSOCKI, KRZYSZTOF PAPLIŃSKI, BOGUSŁAW MICHAŁOWSKI OPERATIONAL LOADS OF COMBAT VEHICLES	77
WAĆLAW BORKOWSKI, ZDZISŁAW HRYCIÓW, PIOTR RYBAK, JÓZEF WYSOCKI PROTOTYPE ARTICULATED JOINT IN CONNECTIONS OF THE CONCRETE PROTECTIVE BARRIER	85
ADAM CHARCHALIS DIAGNOSING OF SHIP PROPULSION ELEMENTS BY VIBRATION MEASUREMENT	93

ELENA CHERKASHINA, MICHAİL LIASHENKO, VICTOR SHEKHOVTSOV, MIKHAIL VALENTSEV	
INVESTIGATION OF THERMAL INTENSITY OF HYDROPNEUMATIC SPRING OF VEHICLE	99
EDWARD CYPKO, TADEUSZ KAŁDOŃSKI	
INFLUENCE OF LUBRICATED SLIDING COUPLE STRUCTURAL MATERIAL TYPE ON GENERATED POTENTIAL DIFFERENCE VALUE	103
ROBERT CZABANOWSKI	
DSEFORMABLE GROUND INFLUENCE ON THE FRICTION DRIVE TRANSMISSION BETWEEN DRIVE PULLEY AND ELASTOMETRIC TRACK	109
PIOTR CZOP, PAWEŁ ŚLIWA, JACEK GNILKA, DAMIAN GAŚIOREK	
A COMPUTATIONAL FLUID FLOW ANALYSIS OF A DISC VALVE SYSTEM	117
MIROŚLAW DERESZEWSKI, ADAM CHARCHALIS, STANISŁAW POLANOWSKI	
ANALYSIS OF DIAGNOSTIC UTILITY OF INSTANTANEOUS ANGULAR SPEED FLUCTUATION OF DIESEL ENGINE CRANKSHAFT	123
AGNIESZKA DEREWOŃKO, GRZEGORZ SŁAWIŃSKI, TADEUSZ NIEZGODA	
DEVICE SUPPORTING MILITARY VEHICLES BUOYANCY AND BALLISTIC RESISTANCE	129
ANDRZEJ DĘBOWSKI, DARIUSZ ŻARDECKI	
MODELLING OF CENTRE DIFFERENTIAL CONTROL	135
JAN FIGURSKI	
LOGISTIC SUPPORT OF „HOMAR” ROCKET SYSTEM	143
KRZYSZTOF GOCMAN, TADEUSZ KAŁDOŃSKI, WALDEMAR MRÓZ, SYLWIA BURDYŃSKA, ARTUR PROKOPIUK	
STRUCTURAL AND MECHANICAL PROPERTIES OF BORON NITRIDE THIN FILMS DEPOSITED ON STEEL SUBSTRATES BY PULSED LASER DEPOSITION	149
ANDRZEJ GRZĄDZIELA, ADAM CHARCHALIS	
VIBRATION DIAGNOSTICS OF MARINE GAS TURBINE ENGINES	157
TADEUSZ KAŁDOŃSKI, PIOTR PAWEŁ WOJDYNA	
LIQUID LUBRICANTS FOR SPACE ENGINEERING AND METHODS FOR THEIR TESTING	163
TADEUSZ KAŁDOŃSKI	
ALMOST 60 YEARS OF TRIBOLOGY AT THE FACULTY OF MECHANICAL ENGINEERING, MILITARY UNIVERSITY OF TECHNOLOGY	185
TOMASZ JAN KAŁDOŃSKI, ŁUKASZ GRYGLEWICZ, MATEUSZ STAŃCZYK, TADEUSZ KAŁDOŃSKI	
INVESTIGATIONS ON LUBRICITY AND SURFACE PROPERTIES OF SELECTED PERFLUOROPOLYETHER OILS	199

TOMASZ JAN KAŁDOŃSKI, MATEUSZ STAŃCZYK, ŁUKASZ GRYGLEWICZ, TADEUSZ KAŁDOŃSKI	
INITIAL STUDIES ON LUBRICITY AND SURFACE PROPERTIES OF SELECTED IONIC LIQUIDS	213
MIROŚLAW KARCZEWSKI, JÓZEF PSZCZÓŁKOWSKI, MICHAŁ WILK	
ASSESSMENT OF START-UP CHARACTERISTICS OF G9T ENGINE AT LOW TEMPERATURE, FED WITH F-34 FUEL BLENDS WITH BIOCOMPONENTS	227
MIROŚLAW KARCZEWSKI, KRZYSZTOF KOLIŃSKI, JERZY WALENTYNOWICZ	
OPTICAL ANALYSIS OF FAILURE OF COMBUSTION ENGINES ELEMENTS	237
MIROŚLAW KARCZEWSKI, MICHAŁ WILK	
ASSESSMENT OF DYNAMIC QUALITIES OF THE G9T ENGINE WITH COMMON RAIL SYSTEM, FED WITH BATTLEFIELD-USE FUEL BLENDS WITH A BIOCOMPONENT	243
KAZIMIERZ KOLIŃSKI	
RESEARCHES OF NOXIOUS COMPONENTS OF EXHAUST GASES CONVERSION OCCURS IN CATALYTIC CONVERTER DURING A START-UP OF COMPRESSION IGNITION ENGINE IN LOWERED TEMPERATURE	253
JAROSŁAW KONIECZNY	
LABORATORY TESTS OF ACTIVE SUSPENSION SYSTEM	263
STANISŁAW KONOPKA, PIOTR KROGUL, MARIAN JANUSZ ŁOPATKA, TOMASZ MUSZYŃSKI	
ARTICULATED ENGINEERING EQUIPMENT STABILITY SIMULATIONS BASED ON Ł34 WHEEL LOADER	273
EDYTA KORZEC, IRENEUSZ SZCZYGIEL	
TECHNICAL AND ECONOMIC ASPECTS OF TREATMENT OF COMPRESSED NATURAL GAS TO VEHICLE SUPPLY	281
ANDRZEJ KOŚCIARA	
CONTROL EFFECTIVENESS COMPARISON OF WHEEL LOADER'S LONGITUDINAL VIBRATIONS BY MEANS OF PASSIVE AND ACTIVE VIBRATION STABILISERS	287
KRZYSZTOF KOŚCIUCZENKO, TADEUSZ NIEZGODA, WIESŁAW BARNAT, ROBERT PANOWICZ	
NUMERICAL ANALYSIS OF CERAMIC-STEEL-COMPOSITE SHIELD SUBJECTED TO BALLISTIC IMPACT OF THE FRAGMENT	295
MIROŚLAW KOWALSKI	
APPLICATION OF THE PHASE REPRODUCTION METHOD TO THE ANALYSIS OF AN AVIONIC EVENT ON BOARD OF THE W-3 "SOKÓŁ" HELICOPTER	301
WIESŁAW KRASOŃ, JÓZEF WYSOCKI	
ANALYSIS OF VIBRATIONS OF THE SIMPLIFIED MODEL OF THE SUSPENSION SYSTEM WITH A DOUBLE SPRING AND A FLUID DAMPER	311
WŁODZIMIERZ KUPICZ, STANISŁAW NIZIŃSKI	
METHOD FOR TESTING STEERABILITY AND STABILITY OF MILITARY	317

VEHICLES MOTION USING SR60E STEERING ROBOT	
WITOLD LUTY	
AN ANALYSIS OF TIRE RELAXATION IN CONDITIONS OF THE WHEEL SIDE CORNERING ANGLE OSCILLATIONS	325
WITOLD LUTY	
THE $\mu$ -PW FRICTION TESTER AS AN ELEMENT OF ROAD SURFACE SKID RESISTANCE EVALUATION SYSTEM AT THE TRAFFIC ACCIDENT SCENE	333
MARIAN J. ŁOPATKA, TOMASZ MUSZYŃSKI, ARKADIUSZ RUBIEC	
MULTIFUNCTION SUSPENSION OF EOD ROBOT	343
MARCIN MICHALCZYK, KRZYSZTOF SZCZEŚNIAK	
THE MODEL OF VERTICAL ACCELERATION IMPACT ON BACKBONE OF MEMBER OF THE CREW	351
GRZEGORZ MOTRYCZ, PIOTR STRYJEK	
DESIGN OF FLATBED FOR CARRYING DAMAGED AFV ROSOMAK BY AIR TRANSPORTATION	359
TOMASZ MUSZYŃSKI	
RESEARCH INTO DRIVE SYSTEM OF EOD/IED ROBOT	365
WOJCIECH NAPADŁEK	
LASER PERCUSSIVE STRENGTHENING OF THE ALUMINUM ALLOYS	373
STANISŁAW NIZIŃSKI, WŁODZIMIERZ KUPICZ	
AUTONOMIC LOGISTICS SYSTEM OF INTELLIGENT MILITARY MOTOR VEHICLES	385
STANISŁAW NIZIŃSKI, WŁODZIMIERZ KUPICZ	
OPERATIONAL STRATEGY OF MILITARY MOTOR VEHICLES	395
WŁADYSŁAW PAPACZ	
BIOGAS AS VEHICLE FUEL	403
KRZYSZTOF M. PAPLIŃSKI, EMIL STACHOWICZ	
INFLUENCE OF INERTIA MOMENT OF INFANTRY FIGHTING VEHICLE TURRET ON ACCURACY OF AIMING AT A TARGET AND TRACKING OF A TARGET	411
DARIUSZ PASIEKA, PIOTR WOCKA	
NEW CONCEPTS OF VEHICLES, MODELLING AND SIMULATION USING WMI AND MG20 VEHICLES AS AN EXAMPLE	417
JAN PEROŃCZYK	
SELECTED PROBLEMS OF ELECTRICAL DISCHARGE MACHINING (EDM) OF METAL COMPOSITE MATERIALS APPLIED IN MANUFACTURING OF MECHANICAL VEHICLES	429
MAREK PIĄTEK	
PERFORMANCE MONITORING AND DIAGNOSTICS OF DRIVE UNITS OF	443

HEAVY ARMORED EQUIPMENT

ARKADIY POBEDIN, VALERIY VARFOLOMEEV

AGENCY OF THE SUSPENSION OF THE BACK IDLER ON TRANSPORT  
VIBRATION OF THE TRACTOR WITH TRIANGULAR CATERPILLAR CONTOUR 447

ARKADIY POBEDIN, OLEG KOSOV, ALEXANDER DOLOTOV, KIRILL DOLGOV

THE MODELLING OF NOISE EMISSION BY THE GEARBOX OF VEHICLES GAZ  
3110, 31105 453

ARKADIY POBEDIN, OLEG KOSOV, KIRILL SHEKHOVTSOV

VIBRATION ISOLATORS TEST BENCH 457

ALEX PODZOROV, VYACHESLAV PRYTKOV, ELENA CHERKASHINA, MICHAIL LIASHENKO

THE VEHICLE RIDE COMFORT INCREASE AT THE EXPENSE OF SEMIACTIVE  
SUSPENSION SYSTEM 463

FILIP POLAK, JERZY WALENTYNOWICZ

SIMULATION OF THE HYBRID PROPULSION SYSTEM FOR THE SMALL  
UNMANNED VEHICLE 471

FILIP POLAK, LESZEK SZCZĘCH

PROPULSION MODULE FOR UNMANNED VEHICLE 479

KONRAD PRAJWOWSKI, WAWRZYNIEC GOŁĘBIEWSKI

SIMULATIVE COMPARISON OF THE TRACTION PROPERTIES OF DAEWOO  
LUBLIN 3 MI VAN WITH PARTICULAR TYPES OF GEARBOX 483

LEON PROCHOWSKI, KAROL ZIELONKA, ANDRZEJ ŻUCHOWSKI

THE ANALYSIS OF OCCUPANT MOTION IN FRONTAL BARRIER IMPACT OF A  
CHASSIS FRAME VEHICLE1 491

EUGENIUSZ RATAJCZYK

SYSTEMS FOR DAMAGED CAR BODIES MEASUREMENTS 503

ARKADIUSZ RYCHLIK, PIOTR SZCZYGLAK

DIAGNOSTIC INFORMATION MODEL OF A MILITARY VEHICLE 509

PIOTR SASKA, EDYTA KRZYSTAŁA, ARKADIUSZ MEŻYK

AN ANALYSIS OF AN EXPLOSIVE SHOCK WAVE IMPACT ONTO MILITARY  
VEHICLES OF CONTEMPORARY WARFARE 515

WOJCIECH SAWCZUK

APPLICATION OF VIBROACOUSTIC SIGNAL TO DIAGNOSE DISK BRAKING  
SYSTEM 525

VICTOR SHEKHOVTSOV, NICKOLAY SOKOLOV-DOBREV, VLADIMIR SHEVTCHUK, MICHAIL  
LIASHENKO, IVAN IVANOV, ALEXEY KALMIKOV

THE RESEARCH OF THE DYNAMIC LOAD OF THE POWER TRAIN OF THE  
CATERPILLAR TRACTOR CHETRA 6C-315 535

PRZEMYSŁAW SIMIŃSKI

SAFETY AND ANALYSIS OF MODERN TRANSPORT ARTICULATED VEHICLES 547

MOTORIC PROPERTIES

PRZEMYSŁAW SIMIŃSKI

TESTING OF „MAMUT” THE EVACUATION & TECHNICAL RECOVERY  
WHEELED VEHICLE 555

JANUSZ ŚLIWIŃSKI

PROTECTION OF VEHICLES AGAINST MINES 565

TOMASZ SMAL, MAREK ROŚKOWICZ

EXPEDIENT REPAIR OF HYDRO-PNEUMATIC PIPES WITH ADHESIVES 573

ZBIGNIEW SOBCZYK

TOTAL CURRENT MEASUREMENT INTERRUPTS DETECTION METHOD IN  
AUTOMOTIVE BULBS CIRCUITS 579

ROBERT SOSNOWICZ, PRZEMYSŁAW WACHOWIAK, MACIEJ DORCZUK

CONCEPTION OF MILITARY VEHICLE CLASSIFICATION 585

ROBERT SOSNOWICZ, PRZEMYSŁAW WACHOWIAK, MACIEJ DORCZUK, CEZARY  
RZYMKOWSKI, ADAM DACKO, TOMASZ DZIEWOŃSKI, JACEK TOCZYSKI (PH.D. STUDENT)

SEAT AS AN ELEMENT IMPROVING PHYSICAL PROTECTION OF SOLDIERS  
DURING EXPLOSION OF MINES UNDER THE ARMoured MILITARY  
VEHICLES 595

PIOTR SPRAWKA

THE SYSTEM OF ACTIVE BASES PROTECTION IN THE AREAS OF COMBAT  
TASKS 603

SŁAWOMIR STACHURA

STATIC ANALYSIS AND STABILITY OF THE GRILLAGE 609

TOMASZ L. STAŃCZYK, RAFAŁ JURECKI, MAREK JAŚKIEWICZ, STANISŁAW WALCZAK,  
ROBERT JANCZUR

RESEARCHES ON THE REACTION OF A PEDESTRIAN STEPPING INTO THE  
ROAD FROM THE RIGHT SIDE FROM BEHIND AND AN OBSTACLE REALIZED  
ON THE TRACK 615

TOMASZ STOECK

EVALUATION OF THE CARRIAGE OF DISABLED PEOPLE BY MEANS OF  
MUNICIPAL TRANSPORT IN SZCZECIN 623

PIOTR STRYJEK, GRZEGORZ MOTRYCZ, JERZY GRZESIAK

THE EFFECT OF THE DRIVER AND CONSTRUCTION CHANGES IN VEHICLE  
SUSPENSION SYSTEMS ON THE ABILITY TO PERFORM SUDDEN  
MANOEUVRES ON THE ROAD ON THE BASIS OF TESTS CARRIED OUT ON  
POLICE CARS 631

MAREK SZUDROWICZ

ANALYSIS OF BAR AND NET SCREENS STRUCTURE PROTECTING VEHICLES  
AGAINST ANTI-TANK GRENADES FIRED FROM RPG-7 639

PIOTR SZURGOTT, TADEUSZ NIEZGODA

THERMOMECHANICAL FE ANALYSIS OF THE ENGINE PISTON MADE OF COMPOSITE MATERIAL WITH LOW HISTERESIS	645
ANDRZEJ ŚWIDERSKI	
THE SELECTED ASPECTS OF THE QUALITY ASSESSMENT OF TRANSPORT SERVICES	651
JERZY ŚWITEK	
STABILITY OF MOTION OF THE CREWED AUTONOMOUS UNDERWATER VEHICLE	659
ŁUKASZ TRZCIŃSKI	
THE PRELIMINARY DESIGN OF MULTIPURPOSE ENGINEERING MACHINE	667
JERZY WALENTYNOWICZ	
INFLUENCE THE HIGHER TEMPERATURE OF THE COOLING LIQUID ON OPERATIONAL PARAMETER OF THE PISTON COMBUSTION ENGINE	671
MIROSLAW WENDEKER, ŁUKASZ GRABOWSKI, KONRAD PIETRYKOWSKI, PAWEŁ MAGRYTA	
FLOW SIMULATION THROUGH WANKEL ENGINE THROTTLE USING COMPUTATIONAL FLUID DYNAMICS	677
MIROSLAW WENDEKER, PAWEŁ MAGRYTA, ADAM MAJCAK, MICHAŁ BIAŁY	
MODELING THE THERMAL LOADS IN THE SUBARU EJ25 ENGINE	683
DARIUSZ ŻARDECKI	
MODELLING OF EPS TYPE STEERING SYSTEMS INCLUDING FREEPLAY AND FRICTION IN STEERING MECHANISM	689
ANDRZEJ ŻUCHOWSKI, JERZY JACKOWSKI	
ANALYSIS OF PROPERTIES OF OPERATION OF THE SUPPORTING EQUIPMENT FOR THE SEAT BELTS	697

