Table of contents

KEYNOTE LECTURES

Gabriel D., Kopačka J., Masák J., Plešek J. (#K01): *Development, assessment and verification of finite element procedures for contact problems* 1

Vítek J. L. (#K02): *Advanced concrete structures* 5

PAPERS

Aizikovich S. M., Volkov S. S., Vasiliev A. S. (#326): *Plane contact of two elastic solids with functionally graded coatings joined by an imperfect interface* 13

Aleksandrowicz P. (#10): *Verification of airbag activation during collision of vehicles with the use of SDC method* 17

Aleksandrowicz P. (#11): *Selection of collision detection model on the basis of a collision of incompatible vehicles* 21

Andrzejewska A., Topoliński T., Mazurkiewicz A. (#73): *Evaluation of changes in elastic properties of animal trabecular bone for mechanical tests depending on the storage method* 25

Annusewicz A., Zwierzchowski J. (#311): *Generating the cutting path of the sheet of metal with visible photogrametric difference of the template and the object for industrial robot with the vision system* 29

Aydin E., Öztürk B., Dutkiewicz M. (#219): *Determination of optimal elastic springs for cantilever beams supported by elastic foundation* 33

Baláž I., Koleková Y., Moroczová L. (#106): *Shear resistance and its influences in eurocodes EN 1993-1-1 and EN 1999-1-1* 37

Balda M. (#50): *Fatigue life assessment of prestressed material* 41

Bansod Y. D., Jakka Veera V. S. V. P., Burša J. (#45): *Bendo-tensegrity model simulates compression test of animal cell* 45

Baranowski L. (#194): *Analysis of two-channel control according to the proportional navigation method* 49

Baranowski L., Gadomski B., Majewski P., Szymonik J. (#323): *The analysis of the 35 mm artillery projectile's motion model parameters' identification based on the recorded flight trajectory* 53

Bartoňová P., Polzer S., Burša J. (#221): *Definition of principal material directions at irregular arterial shapes* 57

Bartuli E., Brožová T., Raudenský M. (#265): *The influence of hollow fibers orientation inside the polymeric hollow fiber heat exchanger on the heat transfer intensity* 61

Bayer J., Urushadze S., Černý M. (#335): *Proposal for loading tests of bridges - simulation and laboratory experiments* 65

Bednář L., Tajč L., Kočárník P. (#198): *Optimization of dimensions of the valve chamber of the control valves of steam turbine* 69

Benčat J., Lukáč M. (#332): *Turbo–generator foundation dynamic analysis* 73

Bieniek A., et al. (#307): *The influence of muscle forces on musculoskeletal system loads during lifting – pilot study* 77

Bienioszek G., Kciuk S., Krzystała E. (#44): *Identification of the shockwave effect onto Explosive Ordnance Disposal (EOD) personnel during controlled airblast of TNT charge* 81

Biernacka M., Gilewski W., Obara P. (#247): *A simple model for parametric study of pneumatic-cable structures* 85

Blasiak S., Takosoglu J., Laski P.A. (#214): *Model and experimental research of pneumatic artificial muscles* 89

Bochat A., Zastempowski M. (#158): *Modeling of the kinematic movement of the drum cutting unit in chaff-cutter* 93
Bocian M., Lubecki M., Stosiak M. (#80): *Experimental investigations of the vibration of hydraulic microhoses* 97
Bold M., Garus S., Sochacki W. (#165): *Damped vibrations of telescopic crane boom* 101
Borsuk G., Dobrowolski B. (#124): *Influence of flow direction change on the particle segregation in horizontal pipes* 105
Bošanský M., Patzák B. (#344): *Evaluation of linear system equations solvers on multicore architectures* 109
Brabec P., Zhou X. (#49): *Simulation of the ride for passenger car in NEDC and WLTP driving cycles* 113
Brožová T., Bartuli E., Raudenský M. (#107): *Condensation on the outer surface of polymer hollow fiber heat exchangers and its influence to the heat transfer* 117
Bulín T., Rozehnal D. (#260): *Determination of the energy performance of a helicopter in a hover* .. 121
Bęczkowski R., Kordas P., Parzych S. (#232): *Using experimental design to determine the wear resistance of the padded layers by FCAW* 125
Cábová K., Lišková N., Zeman F., Benýšek M. (#251): *Virtual test of fire resistance of a steel beam* 129
Čada R., Frydrýšek K., Sejda F., Tiller P. (#361): *Evaluation of locking bone screw heads* 133
Cekus D., Kwiatoń P. (#104): *Analysis of the motion of the load carried by a laboratory mobile crane* 137
Červenka M., Boudná H. (#119): *Visual guide of F and CR parameters influence on differential evolution solution quality* 141
Chatys R., Kleinhofs M., Panich A., Miśków G. (#203): *Composite laminates for automotive bumpers and lightweight support structures* 145
Chatys R., Kleinhofs M., Panich A., Piernik K. (#393): *Forecasting the strength of reinforced polymer composite using statistical analysis method* 149
Chleboun J. (#341): *Uncertainty quantification through a model-based fuzzy set membership function* 153
Chojnacki J., Kaldunski P., Nagnajewicz S., Patyk R. (#274): *Simulation tests of pelleting process in aspect of obtained stresses, contact pressure and fatigue strength for granulator flat die* 157
Chołodowski J., Dudziński P. (#266): *Method for estimation of road wheels rolling resistance in rubber track systems* 161
Cieślicki R., Karliński J., Osiński P. (#181): *Numerical analysis of stress in a positive displacement external gear pump loaded by the tension of the bolts* 165
Čípek P., et al. (#321): *Development of reciprocating tribometer for testing synovial joint* 169
Čupr P., Cardoso M., Rudolf P. (#336): *Design of a new cavitation tunnel at Brno University of Technology for FSI testing* 173
Czernek K., Witczak S. (#126): *Optoelectronic measurement of interfacial surface* 177
Czyżewski P., Jójka J., Ślefarski R. (#268): *High temperature two stage combustion concept for ammonia contained syngas fuel utilization* 181
Dindorf R., Wos P. (#43): *Sensorless position control system of hydraulic linear stepper actuator* ... 185
Dittrich A., Beroun S. (#132): *Heat stress on the spark plug* 189
Doškář M., Novák J., Zeman J. (#292): *Synthesis of microstructure-informed enrichment functions by means of Wang tiles* 193
Dudziński P., Chołodowski J., Ketting M. (#153): *Experimental tests on rolling resistance of road wheels in rubber tracked undercarriages* 197
Dvořáková E., Patzák B. (#286): *On application of isogeometric beam elements to modeling of gridshell structures* 201
Dzierżek K., Rećko M. (#231): *Improvement of PLCS programming to operate in an ModBus industrial network* 205

Fialová D., Jegla Z. (#7): *Modelling of fluid flow and heat distribution in a specific heat exchanger* . 209
Fíla T. (#37): *Split Hopkinson pressure bar: design parameters and prediction of the experiment output* . 213
Fillo Ľ., Augustín T., Halvonik J., Marčiš M. (#168): *Punching shear load test monitored by photogrammetry* . 217
Fillo Ľ., Laco K., Augustín T. (#368): *Influence of footings rigidity and subsoil on punching resistence* . 221
Frydrýšek K., Machalla V., Fojtík F., Pleva L. (#241): *Torsion tests for femoral, humeral and tibial nails* . 225
Garus S., Sochacki W., Bold M. (#249): *Comparison of phononic structures with piezoelectric* $0.62PB(MG_{1/3}NB_{1/3})O_3$*-*$0.38PBTIO_3$ *defect layers* . 229
Gierz Ł., et al. (#237): *Method of controlling the outflow of liquid from the sprayer during the dressing process* . 233
Gierz Ł., et al. (#220): *A simulation analysis of the strength of an innovative supporting structure of a mechanical pneumatic seed drill* . 237
Gierz Ł., et al. (#228): *A method and a station for measurement of the aerodynamic properties of crop seeds* . 241
Gilewski W., Al Sabouni-Zawadzka A., Pelczynski J. (#253): *Computational modeling of perpendicular to grain stress in a non-standard glulam beam* . 245
Gnatowska R. (#57): *CFD validation of ABL in short wind tunnel chamber along an empty domain* . 249
Gogolewski D. (#134): *The simulation method for the identification the surface irregularities* . 253
Gołębiowska I., Dutkiewicz M., Usewicz B. (#239): *Galloping of overhead power lines conductors* 257
Grzyb M., Koruba Z. (#337): *Pre-programmed flight path of air-to-ground missile* . 261
Grzymislawski P., Jojka J., Gołębiewski M., Czyzewski P. (#246): *Analysis of the combustion process of low-calorific gaseous fuels in experimental combustion chamber of gas turbine* . 265
Grzywiński S., Żygadło S. (#254): *Experimental research of the power supply source parameters used in proximity sensors for artillery projectiles* . 269
Gucwa M., Winczek J., Kukuryk M., Makles K. (#76): *The analysis of stainless steel welded connections made by low energy and classic welding processes* . 273
Gzik-Zroska B., et al. (#42): *Application of digital image correlation to determine the mechanical properties of biomaterials* . 277
Hadraba P., Hadaš Z. (#179): *Multi body vibration analysis of a three-axis slide for mass damper design* . 281
Hána T., Eliášová M., Sokol Z. (#139): *Four point bending tests of double laminated glass panels* . 285
Handke A., Bałchanowski J. (#160): *Synthesis of human-bike kinematic structures for direct kinematic analysis* . 289
Hanzel J., Halvonik J., Bartók A., Vidakovič A. (#315): *The importance of shear slenderness for determining punching resistance of the foundation footings* . 293
Havelka J., Sýkora J. (#69): *Transient model and boundary inverse problem* . 297
Havelka R., Musil M., Havelka F., Mihelová S. (#70): *Application of modal synthesis to dynamic parameters modification* . 301
Holka H., Jarzyna T. (#334): *Selected structural issues of the waterjet method in industrial recycling of tires* . 305
Hollý I., Gažovičová N. (#284): *Experimental investigation of bond between GFRP reinforcement and concrete using pull-out test* . 309
Hračov S. (#41): *Accuracy and numerical efficiency of approximate method for complex eigensolution of structure with specialized damping device* . 313
Hubova O., Macak M. (#61): *Numerical and experimental investigation of wind flow in urban area* 317
Jamroziak K., et al. (#256): *Dissipative properties of non-Newtonian fluid under impact load* . 321

Janouchová E., et al. (#78): *Bayesian parameter identification of lattice discrete particle model for concrete* 325
Jochymczyk-Woźniak K., et al. (#212): *Development of the methodology of computer aided designing of tailor-made ortheses of the tarsal joint* 329
Joszko K., et al. (#115): *Dynamic and static tests of tendons for xenogeneic applications* 333
Jureczko M., Chwiendacz A. (#324): *Optimization of fastening construction for the portable tanks* . 337
Jurkojć J., et al. (#230): *The influence of 3D virtual sceneries on ability to maintain balance* 341
Kabaciński M., Pochwała S., Pospolita J., Krogulec D. (#95): *Measurement of mass flow rate as a complex flow problem* 345
Kaczmarek W., et al. (#74): *Industrial and ROS-enabled mobile robots cooperation* 349
Kadlíček T., Janda T., Šejnoha M. (#200): *Automatic online calibration software EXCALIBRE* 353
Kałaczyński T., et al. (#20): *Analysis of the diagnostic potential research thermovision in the technical state of combustion engine injectors assessment* 357
Kalina M., Frantík P. (#224): *Finding of postcritical states of an arch* 361
Kartvelishvili T., Yumashev M. (#190): *Thermomechanical stresses in a solid sphere in conditions of pulsed heating over the surface.* 365
Kaszkowiak J., Markiewicz-Patalon M., Dorszewski P. (#17): *Dependence of the selected properties of the motor oil on the characteristics on power consumption for engines supplied with biogas and gas* 369
Katrňák T., Juračka J. (#71): *Buckling analyses of compressed stiffener with finite element methods* 373
Kazala R., Straczynski P. (#225): *Increasing accuracy of the mobile robot positioning system by using ARtags* 377
Kolber P., Perczyński D., Peszyński K., Landowski B. (#28): *Efficiency testing of thermoelectric cooling cell based on Peltier module* 381
Koleková Y., Baláž I., Moroczová L. (#217): *Bimoment and its influence in the draft prEN 1993-1-1: 2017* 385
Kolman R., Berezovski A., Berezovski M. (#319): *Numerical study of elastic wave propagation in a layered bar* 389
Kořínek T., Tisovský T., Hujer J. (#120): *Large eddy simulation of flow through artificial macro-porous structure* 393
Koruba Z., Krzysztofik I. (#183): *Control of the non-stationary gyroscopic system in the target tracking process* 397
Kosiara A. (#197): *Development, construction and experimental testing of the system for monitoring the tip over stability of a single bucket excavator* 401
Kosiara A. (#243): *Research on working stability of a mini excavator boom hydrostatic control system* 405
Kostek R. (#22): *Arduino based diagnostics system dedicated to rolling bearings* 409
Kotyk M., Maćkowiak P., Płaczek D., Sołtysiak R. (#116): *Analysis of fatigue crack length during the determination of fracture toughness of the layer material Al-Ti* 413
Koudelková V., Wolf B. (#333): *Crystallization force of sodium chloride* 417
Králik J., Králik jr. J. (#282): *Probabilistic nonlinear analysis of failure of a reactor hermetic cover due to extreme pressure and temperature* 421
Králik J., Roško P., Králik jr. J. (#310): *Analysis of the impedance functions using 3D finite element model of subsoil* 425
Kraus P., et al. (#322): *Thermo-structural brake squeal FEM analysis considering temperature dependent thermal expansion* 429
Krejsa J., Věchet S. (#66): *Low cost laser rangefinder evaluation* 433
Krejsa M., et al. (#199): *Numerical analysis of fatigue damage on selected connection of the crane bridge support structure* 437

Kruisová A., Kolman R., Trnka J., Mračko M. (#325): *Finite element modeling of the signal propagation in a thin tube and comparison with experimental data* 441
Kubík M., Macháček O., Mazůrek I. (#209): *Magnetorheological fluid seal with minimum friction torque* 445
Kučera P., Píštěk V., Prokop A., Řehák K. (#99): *Measurement of the powertrain torque* 449
Kujawa M. (#234): *The influence of deformation under tension on hardness, friction and wear in selected thermoplastics* 453
Kukliński M. (#53): *Effective Young's modulus of orthotropic laminate with oriented unidirectional fibrous laminas* 457
Kukuryk M., Winczek J., Gucwa M. (#75): *Analysis of hot deformation behavior and forecasting damage in the forging process of Waspaloy alloy* 461
Kurp P., Witkowski G. (#52): *Conceptual design and implementation of automatic inspection station for the weld quality visual testing* 465
Kyncl M., Pelant J. (#162): *Compressible gas flow through the diffusible barriers and the porous media* 469
Kyryl'chuk O., Kalivoda J., Neduzha L. (#155): *High speed stability of a railway vehicle equipped with independently rotating wheels* 473
Łabędzki P., Pawlikowski R. (#131): *Vibration of viscoelastic bars using a fractional Voigt and Scott-Blair models* 477
Łaganowska M., Zwierzchowski J. (#313): *Determining the trajectory of filling a rectangular flat area for an industrial robot using a marker and a single-camera vision system* 481
Landowski B., Muślewski Ł. (#33): *Numerical simulation of stochastic process as a model of technical object state changes* 485
Laski P.A., Zwierzchowski J., Pietrala D.S. (#308): *Development of delta-type parallel robot using pneumatic artificial muscles in application for rehabilitation* 489
Leppert T. (#125): *Experimental investigation of cooling and lubrication effects in plane grinding of AISI 304 steel* 493
Lewandowski B., Sperzyński P., Bałchanowski J. (#141): *Type synthesis and numerical reseach of a upper limb rehabilitation supporting device* 497
Ligaj B., Karolewska K. (#154): *Fatigue life calculations of machine components in approach of stress, strain and energy* 501
Ligaj B., Lewandowski M., Giętka T. (#169): *Calculations of fatigue life of welded construction elements made of aluminum alloy AW-5754* 505
Ligus G., Wasilewski M. (#192): *Flow pattern identification in a rectangular tank comprising stirrer in an off-center orientation* 509
Łukasiewicz M., et al. (#23): *Analysis of the thermovision diagnostics potential in the light system elements* 513
Lukeš V., Rohan E. (#327): *Validation of homogenized model of the fluid-saturated piezoelectric media* 517
Macháček O., et al. (#305): *Micro-fluidic system with grooved pole pieces of magnetic circuit* 521
Maćkowiak P., Ligaj B. (#129): *Manufacture of specimens and mechanical properties determination of structural adhesives under static loading condition* 525
Maj P., Miko E. (#133): *Linear and angle displacement measurment of vertical milling center using a multi-axis calibrator* 529
Majtánová L., Halvonik J. (#148): *Numerical analysis of the experimental flat slab for the parametrical study* 533
Makieła W., Świderski J., Gogolewski D., Makieła K. (#127): *Compensation of temperature errors when measuring surface textures by applying a two-dimensional wavelet transform* 537
Małek T., Slomion M., Mazurkiewicz A. (#83): *Effects of trabecular bone structure on its fatigue life in test with stepwise increasing amplitude* 541
Matějů J. (#163): *Temperature measurement behind self-sustaining jet engine of a glider* 545

Mazurkiewicz A., Andrzejewska A., Małek T. (#289): *Changes dissipation energy of cortical bone depending on the storage method* 549
Mikeš K., Rokoš O., Peerlings R.H.J. (#314): *Molecular statics simulation of dislocation pileup using quasicontinuum method* 553
Mochar D., et al. (#339): *Experimental and finite element analysis of composite gun barrels* 557
Mračko M., et al. (#264): *Computational time reversal method based on finite element method: influence of temperature* 561
Murčinková Z. (#204): *Micro-fields of short fibre in matrix and macro-dynamic response of fibre composites* 565
Musiał J., et al. (#31): *Milling efficiency aspects during machining of 7075 aluminium alloy with reference to the surface geometrical structure* 569
Náprstek J., Fischer C. (#267): *Forced movement of a ball in spherical cavity under kinematic excitation* 573
Nawrot A., Pochwała S., Stęplowski S. (#135): *Recovery of some of waste gas derived from clinker production installation at Górażdże cement plant* 577
Němeček J., Němeček J. (#291): *Numerical simulation of microlevel experiments on Mg alloy* 581
Neubauer A., Knopik L., Szubartowski M., Migawa K. (#207): *Semi-Markov model of replacement system with minimal repair* 585
Neubauer A., Knopik L., Szubartowski M., Migawa K. (#208): *Implementing distribution mixtures in developing reliability model for paper machine* 589
Nevrlý J., Němec Z., Pazdera I., Nožka M. (#164): *Modelllng of electric drive for excavator pump* 593
Niemiec A. (#54): *Impact of gamma radiation of peek on its tribological properties* 597
Niemiec A., Sokolska J. (#354): *Study of peek as a friction lining concerning abrasion wear of parts of mining machines* 601
Nocoń Ł., Stefański K. (#96): *Range of safe zone from obstacles for unmanned aerial vehicle* 605
Novák L., Novák D., Slowik O. (#32): *Application of polynomial chaos expansion to reliability analysis of prestressed concrete roof girders* 609
Novák M., et al. (#223): *Mixing algorithms for fixed-point iterations in self-consistent electronic structure calculations* 613
Nowakowska K., Michnik R., Myśliwiec A., Zadoń H. (#118): *Identification of loads occurring in the lumbar spine section during the action of lifting objects* 617
Osiński P., Bury P. (#91): *Flow ripple in external helical gear pump* 621
Osowski P., Wolski M., Piątkowski T. (#92): *Dynamic compression of polyethylene foam with trapezoidal cross-section* 625
Ostaszewski M., Dzierżek K. (#297): *CanSat mini-satellite project. Test procedure and mission implementation* 629
Pach J., Dmitruk A., Mayer P. (#250): *Pull-off strength and impact resistance of polyurea coatings in hybrid composites* 633
Pan LX., Lehký D., Novák D., Cao M. (#196): *Sensitivity analysis for parameters of prestressed concrete bridge using neural network ensemble* 637
Panasiuk J., et al. (#111): *Study of the 3D scanning accuracy using industrial robot* 641
Pavlenko M. (#278): *Operational control of efficient and effective treatment of coal bed using complex action taking into account resonant natural frequencies of the block* 645
Pawlak W. (#240): *Wear and coefficient of friction of pla-graphite composite in 3D printing technology* 649
Pawlak Ż., Ligaj B. (#293): *Innovative method for the selection of orthoses used in the rehabilitation of children with cerebral palsy* 653
Pawlikowski R., Łabędzki P. (#130): *A damped harmonic oscillator in the classical and fractional differential calculus with the Liouville derivative* 657

Pečínka L., Krupa Vl. (#272): *Effect of the pulsations generated by the main circulation pumps on the measurement of the coolant flow in the VVER 1000/320 reactor* 661
Pejchar J., Hájek T. (#298): *Modern methods of parachute rescue system testing* 665
Pejkowski Ł. (#136): *A comparison of multiple step and single step methods for determining cyclic stress-strain relationship for two non-masing materials* 669
Perczyński D., Migawa K., Peszynski K., Knopik L. (#330): *Markov model of temperature changes in motor vehicles brake discs* 673
Piatkowski T., Wolski M., Osowski P. (#51): *Method for determining motion trajectories of characteristic points registered by a video camera* 677
Píchal R., Macháček J. (#144): *Buckling and postbuckling behaviour of stainless steel stayed double crossarm prestressed compression elements* 681
Pilis A., Rećko M., Dzierżek K. (#301): *Telemetric system of six degrees of freedom manipulator* ... 685
Polach P., et al. (#72): *Investigation of rotor dynamics with fluid film instabilities II* 689
Ptak A. (#309): *Effect of loading time on the static friction polymer-metal sliding pairs at low temperature* 693
Půst L., Pešek L., Škuderová A. (#79): *Dynamics of four-planetary gearing box* 697
Pyka D., et al. (#259): *Research on ballistic resistance of DCPD laminate under pistol ammunition fire* 701
Radolf V., Horáček J., Košina J., Vampola T. (#63): *Experimental investigation of acoustic characteristics of 3D human vocal tract model with nasal cavities* 705
Rebenda D., et al. (#320): *Effect of hyaluronic acid on friction of articular cartilage* 709
Rohan E., Lukeš V. (#285): *Acoustic wave transmission on homogenized perforated plate* 713
Rosenberg J., Krejčová M. (#77): *Simple qualitative deterministic model of dynein* 717
Rozehnal D., Nguyen V. B., Hnidka J. (#171): *Hysteresis assumptions for propeller in yaw in close stall conditions* 721
Rufaqua R., et al. (#121): *The biochemical process of lubricant film formation in joint replacement* . 725
Rutczynska-Wdowiak K., Zawarczynski L. (#215): *Parametric identification of induction motor mathematical model with the use of genetic algorithm* 729
Rychecký D., Hajžman M., Zeman V. (#201): *Modeling of rotating bladed disks by using conservative modal analysis* 733
Sant Z., Mifsud L., Muscat C. (#184): *Lumbar segment during the walk* 737
Schmidt J., et al. (#213): *Anisotropic phase-field description of von Kármán beams* 741
Šebek F., Kubík P., Petruška J. (#30): *Standard tensile test compared to the small punch test of aluminium alloy* 745
Šišmišová Z., Sokol M., Venglár M., Lamperová K. (#277): *Dynamic tests of two large-span bridges for SHM* 749
Sivčák M. (#328): *Generation of a motion function for optimal needle rack motion of a CAM EL weaving machine* 753
Siwek M., et al. (#140): *The effect of control signals time delays on the trajectory of a dispersed group of robots* 757
Siwulski T. (#189): *Study on the friction forces in a spool – sleeve pair of hydraulic directional control valve* 761
Škoda J., Šklíba J. (#55): *Non-linear damping in the system of two-axis gyroscopic stabilizer* 765
Skurjat A. (#383): *Tests of influence of geometry and elasticity of hoses of hydraulic articulated steering system on its stiffness* 769
Ślefarski R., Gołębiewski M., Wawrzyniak J. (#245): *Study on combustion process in large bore two-stroke gas engines GMVH-12* 773
Smyk E. (#29): *Comparison of acoustic synthetic jet actuator with one and two diaphragms* 777

Sobotka J. (#35): *Forced vibration analysis of Euler-Bernoulli beam with stress stiffening or weakening by means of distributions without using modal analysis* 781
Sokół K. (#98): *Numerical simulations of an influence of the parameters of loading heads on the loading capacity of a damaged column subjected to a specific load* 785
Sołtysiak R. (#58): *Effect of the load character and cryogenic temperature on elastic properties of Ti-6Al-4V titanium alloy* 789
Sonnenschein R., Gajdosova K. (#318): *Numerical analysis of the width control of the early-age cracks in concrete* 793
Šorf M., Jandera M. (#170): *Welded slender stainless steel I-beams* 797
Sosnowski M. (#137): *Computational domain discretization in numerical analysis of forced convective heat transfer within packed beds of granular materials* 801
Spadło S., Krajcarz D. (#102): *Influence of water pressure on surface roughness parameters in abrasive waterjet cutting on AM60 magnesium alloy* 805
Stefanow D. (#270): *Experimental determination of selected loading resistance forces of a single bucket loader* 809
Stefański K., Nocoń Ł. (#84): *Automatic control of a locating device detecting and tracking an air target* 813
Stosiak M., Towarnicki K., Lubecki M. (#81): *Preliminary tests of vibration resistance of hydraulic microvalves* 817
Straka P., Pelant J. (#109): *Numerical simulation of flow through a simplified model of the shaft-seal* 821
Stróżyk P., Bałchanowski J., Szrek J. (#145): *Modeling of the dynamic loads of the human stomatognathic system during biting off* 825
Šulc S., et al. (#48): *Validation of coupled simulation for fire-exposed structures* 829
Šuránek P., Czebe J., Pavelka V. (#187): *Experimental identification of LTI system using white noise excitation* 833
Symonov V. (#59): *FE simulation of bird strike tests of composite panels in MSC.Software* 837
Szmidla J., Jurczyńska A. (#222): *An influence of a non-prismatic rod as a part of a geometrically nonlinear system under generalized load with a force directed towards the positive pole on the value of the bifurcation load* 841
Szmidla J., Jurczyńska A. (#227): *Free vibrations of the slender nonprismatic column under the passive and active follower force directed towards the positive pole* 845
Szteleblak W. (#306): *Sensitivity analysis in optimal design of composite structures with curvilinear fibres* 849
Szubartowski M., Knopik L., Migawa K., Sołtysiak A. (#146): *Some remarks on the stability of the criteria for occurrence of maximum availability in the operation system* 853
Szubartowski M., Knopik L., Migawa K., Sołtysiak A. (#206): *An example of optimization problem in transport* 857
Topoliński T., Mazurkiewicz A., Ligaj B., Slomion M. (#82): *Fatigue life tests of thick bondline adhesively-bonded joints under constant amplitude loading conditions* 861
TranXuan T., Cirkl D. (#279): *Modelling of dynamical behavior of pneumatic spring – mass system* 865
Tůma J., Šimek J., Kozubková M. (#276): *Calculation of the fluid force acting on the bearing journal in the steady-state position* 869
Tyburec M., et al. (#288): *Wound composite beam internal structure optimization* 873
Tyszczuk K., Peszyński K., Mroziński A., Śmigielski G. (#290): *Pneumatic supporting of the precise fine oil seed grinding process* 877
Ulbrich D., et al. (#210): *Evaluation of adhesion between adhesive coating and steel substrate by ultrasonic method* 881
Ursel T. (#342): *Assessment of the aproximation accuracy of the point trajetory with use of inertial sensors* 885

Uzny S., Osadnik M. (#105): *Influence of rotational stiffness of support of a partially tensioned column on its free vibrations* 889

Vampola T., Štorkán J., Horáček J., Radolf V. (#304): *Numerical investigation of acoustic characteristics of 3D human vocal tract model with nasal cavities* 893

Vaverka O., et al. (#157): *Effect of heat treatment on mechanical properties and residual stresses in additively manufactured parts* 897

Venglár M., Sokol M., Lamperová K., Marföldi M. (#149): *Simple supported composite beam – preparation for damage assessment* 901

Vítek P., Strecker Z., Roupec J. (#273): *Design of fast magnetorheological damper using selective laser melting technology* 905

Vlasák P., et al. (#64): *Experimental investigation of settling slurry flow in inclined pipe sections* ... 909

Warzyńska U., Kollek W. (#188): *Modelling of pressure pulsation in gas compressor station* 913

Wasilewski M., Ligus G. (#36): *The effect of vortex finder shape on separation efficiency and pressure drop in lower-stage cyclones used for clinker burning. A CFD study* 917

Wawrzyniak S., Peszyński K. (#26): *Innovative way to recover liquid cosmetics* 921

Winczek J. (#39): *Influence of heating rate on austenitization temperatures of S355J2G3 steel* 925

Wodarski P., et al. (#122): *Evaluation of the changes of gait stability on the treadmill due to treadmill velocity changes by means of time-frequency analysis* 929

Wolski M., Piatkowski T., Osowski P. (#112): *The geometrical and material parameters influence on the mechanical properties of active rotary fence* 933

Woś P., Dindorf R. (#161): *Admittance control of an electro-hydraulic servo-drive* 937

Wróbel J., Kulawik A. (#152): *Controlling the size of heat affected zone for the axisymmetric steel element with the use of ANN* 941

Wydrych J., Dobrowolski B. (#56): *Assessment of usefulness of selected erosion models for the prediction of erosive wear of flow systems* 945

Zachwieja J. (#329): *Limit strength of the reinforced concrete rotary kiln supports under time-variable load* 949

Zapoměl J., Ferfecki P., Sudhakar A., Kozánek J. (#60): *The influence of permanent magnetic rings on the loss power, vibration and stability of vertical rotors* 953

Židlický B., Jandera M. (#88): *SHS and RHS stainless steel slender beam-columns* 957

Zmarzły P. (#97): *Influence of the internal clearance of ball bearings on the vibration level* 961

Żółtowski B., Żółtowski M., Łukasiewicz M. (#18): *Statistical research space of measures of vibration energy in machines* 965

Zvolský T. (#93): *Power consumption of electromagnetic valve actuator* 969