

CONFERENCE PROGRAMME
14th INTERNATIONAL CONFERENCE
MECHATRONIC SYSTEMS AND MATERIALS

04.06.2018 (Monday)	
10:00-13:00	Registration of Participants
13:00-14:00	Lunch
14:00-14:15	Opening of the Ceremony Hall A
14:15-15:15	Plenary session 1 Hall A Chairman: prof. Marek Tukiendorf and prof. Janusz Kowal 1. Harald LOOSE: Gait observation, measurement and analysis between the contexts of engineering and medical sciences 2. Mirosław PAJOR: Innovative concept of interactive crane control system
15:15-15:45	Coffee break
15:45-17:15	Paper session A1: Hall A Chairman: prof. Harald Loose and prof. Mirosław Pajor 1. Paweł BIŁOUS: Examination tests of the time courses during the milling of an element for various special tool configuration 2. Paweł HERBIN, Mirosław PAJOR: The torque control system of exoskeleton ExoArm 7-DOF used in bilateral teleoperation system 3. Andrzej KIERDELEWICZ, Arkadiusz MYSTKOWSKI: Prototype of MFC-based energy harvesting and AMB rotor vibration monitoring system 4. Bartosz MAZUREK, Rafael MIOZGA, Jarosław MAMALA: Mechatronic damping ratio control system of the progressive shock absorber in off-road vehicle 5. Konrad KUŹMA, Wojciech GLIWA: Fuzzy logic controller design for the anti-icing system in the DA42 diamond aircraft 6. Igor PENKOV, Victor MUSALIMOV, Gennady ARYASSOV, Sergei ZHIGAILOV: Motion imitation of the pelvic and the hip joints of the human
15:45-17:15	Paper session B1: Hall B Chairman: prof. Ismet Gücüyener 1. Michał BÖHM: Fatigue life assessment with the use of spectral method for materials subjected to standardized wind loading spectrums 2. Mariusz KOSOBUDZKI, Krzysztof JAMROZIAK, Mirosław BOCIAN, Piotr KOTOWSKI: Strength analysis of the hybrid composite shields subjected to protection of the transport space in freight wagons 3. Sebastian LIPIEC, Andrzej NEIMITZ, Ihor DZIOBA: Calibration of constitutive equations under conditions of large strains 4. Artur CICHĄŃSKI, Andrzej SKIBICKI: Experimental verification of homogeneity of the mechanical properties distribution in the M16 bolt core
17:30-18:30	Poster session 1: Chairman: prof. Zbigniew Pawelski, prof. Jarosław Mamala 1. Leszek AMBROZIAK, Mirosław KONDRATIUK, Maciej CIĘŻKOWSKI, Cezary KOWNACKI: Hardware in the loop tests of the potential field based algorithm for formation flight control of Unmanned Aerial Vehicles 2. Khadir BESSEGHEUR, Jarosław PANASIUK, Michał SIWEK, Leszek BARANOWSKI: The effect of the swarm configuration and the obstacles placement on control signals transmission delays in decentralized ROS-embedded group of mobile robots 3. Krzysztof BLACHA, Mariusz ŻOKOWSKI, Mariusz WESOŁOWSKI: Investigations of pavement surface on airfields using laser scanning and measurement acoustic emission 4. Sergejus BORODINAS, Artūras KILIKIČIUS, Antanas FURSENKO, Kristina KILIKIČIENĖ: Experimental investigation of friction transition on lateral vibration of steel tapes 5. Sergejus BORODINAS, Piotr VASILJEV, Dalius MAZEIKA, Regimantas BAREIKIS, Ying YANG: Rotary type ultrasonic motor with bending spokes

CONFERENCE PROGRAMME
14th INTERNATIONAL CONFERENCE
MECHATRONIC SYSTEMS AND MATERIALS

6. Krystian CHOJNOWSKI, Piotr WASILEWSKI, Rafał GRĄDZKI: Movement modeling of mobile robot in MegaSumo category
7. Jacek DYBAŁA, Krzysztof NADULICZ: Non-destructive evaluation of deformation in carbon steel based on magnetic method
8. Daniel FIGUROWSKI, Ayush JAIN: Hybrid path planning for mobile robot using known environment model with semantic layer
9. Szymon GONTARZ, Krzysztof WIĘCŁAWSKI: Sensoric system in acquiring information on passing vehicles
10. Rafał GRĄDZKI, Michał JAŻWIŃSKI: Research on energy efficiency of embedded systems dedicated to Internet of Things solutions
11. Arkadiusz JAKUBOWSKI, Arkadiusz KUBACKI: Design of wave simulator and hydraulic active heave compensation framework for offshore operations
12. Wojciech KACZMAREK, Szymon BORYS, Jarosław PANASIUK, Aneta POBUDOWSKA, Mikołaj MAJSTEREK: Studies on the work characteristics of amperometric free chlorine probes
13. Krzysztof KAWLEWSKI, Paweł WĄTROBA: Design of an inverted pendulum laboratory stand to teach mechatronics
14. Marek KLIMOWICZ, Piotr WASILEWSKI, Rafał GRĄDZKI: Design and analysis of space vector modulation based brushless motor driver
15. Mirosław KONDRATIUK, Ewa PAWŁUSZEWICZ, Justyna JAŃCZAK, Leszek AMBROZIAK: Discrete PID algorithm with nonuniform sampling – practical implementation in control system Mateusz
16. KOWALSKI: Influence of the welding parameters on residual stresses in S1100QL steel
17. Arkadiusz KUBACKI: Controlling the industrial robot with the hybrid BCI based on EOG and eye tracking
18. Jarosław MAŃKOWSKI, Piotr ŻACH, Mirosław SOBOLEWSKI: Hyperformed materials in kinematically dependent vibrating systems
19. Dalius, MAZEIKA, Ramutis BANSEVICIUS, Vytautas JURENAS, Sergejus BORODINAS: Three degrees of freedom piezoelectric actuator for precise positioning
20. Arkadiusz NIKONOWICZ, Leszek AMBROZIAK, Mirosław KONDRATIUK, Arkadiusz BOŻKO, Maciej SULEWSKI: Cooperation of two heterogeneous mobile robots
21. Robert PAŁA, Ihor DZIOBA: The influence of delamination on the parameters of triaxial state of stress before the front of the main crack
22. Tadeusz PAŁA, Ihor DZIOBA: Strength analysis of welded joints using the GMAW method from high-strength ferritic steel
23. Jarosław PANASIUK, Michał SIWEK, Wojciech KACZMAREK, Jacek EICHELKRAUT: The concept of use of the mobile robot for teletechnical wires installation in pipelines
24. Rafał PAWLIKOWSKI, Paweł ŁABĘDZKI, Andrzej RADOWICZ: Transverse vibration of a cantilever beam under base excitation using fractional rheological model
25. Norbert POMP, Pavel KLOUČEK: Exposition time point checking
26. Krzysztof PRAŻMOWSKI, Andrzej BIENIEK, Jarosław MAMALA, Krystian HENEK: Using the Pontos optical system to measurement the deformation pneumatic wheel of dynamic conditions
27. Krzysztof PRAŻNOWSKI, Andrzej AUGUSTYNOWICZ, Jarosław NOWAK, Mariusz GRABA: Wireless signal transmission for diagnostics of machines and devices
28. Piotr PRUSACZYK, Jarosław PANASIUK, Leszek BARANOWSKI: GPS-free navigation based on inertial and odometry data fusion and map matching algorithm.
29. Petr PŮLPÁN: Acoustic beamforming in angular domain applied for rotating machines
30. Daniel WYRWAŁ, Tymoteusz LINDNER, Dominik RYBARCZYK: Design and control of a holonomic robot that balances on single spherical wheel
31. Maciej WYSOCKI, Bartosz PAWŁOW, Rafał GRĄDZKI: Performance examination of selected sensors for use in sumo class robots
32. Piotr ŻACH, Jarosław MAŃKOWSKI, Bernard KRÓL: Characteristics of elastomers-friction damper
33. Bronisław TOMCZUK, Andrzej WAINDOK, Jarosław MAMALA: The influence of the dimensions and core materials on the tubular actuator electromagnetic parameters

CONFERENCE PROGRAMME
14th INTERNATIONAL CONFERENCE
MECHATRONIC SYSTEMS AND MATERIALS

34. Dawid WAJNERT: Dynamic simulation of the hybrid magnetic bearing
19:00 Barbecue dinner

5.06.2018 (Tuesday)	
7:30-9:00	Breakfast
9:00-9:30	Plenary session 2 Hall A Chairman: prof. Tadeusz Łagoda
1. Jörg WALLASCHEK: Self-sensing technologies in ultrasonic process engineering and sonomechanics	
9:30-10:30	Paper session A2: Hall A Chairman: prof. Jörg Wallaschek
1. Zdenek BRAIER, Pavel SIDLOF, Pavel FISER: Measurement, evaluation and comparison of positioning accuracy and other linear motor quantities	
2. Marek GRUDZIŃSKI, Mirosław PAJOR, Łukasz MARCHEWKA: Stereovision system for motion tracking and position error compensation of loading crane	
3. Karol MIĄDLICKI, Mirosław PAJOR, Mateusz SAKÓW: Loader crane operator tracking system based on active markers and sensor fusion	
4. Tomasz TRAWIŃSKI: Mathematical model of multiactuator for HDD head positioning system	
9:30-10:30	Paper session B2: Hall B Chairman: prof. Andrzej Milecki
1. Julian MALAKA: The analysis of the possibility of creating a system enabling robot's learning, through observation and measurement, to perform production tasks	
2. Paweł MENDYKA, Marcin NAWROCKI, Lesław OSTAPÓW: Calibration of mining drilling rig boom equipped with feeder guiding system FGS	
3. Zbigniew PILAT, Wojciech KLIMASARA, Łukasz BĘBEN, Piotr FALKOWSKI, Marek PACHUTA, Michał SMATER: Advanced mechatronic solutions in implementing the technology of automated assembly of gas spring sockets	
4. Marcin JASIEWICZ, Karol MIĄDLICKI, Bartosz POWAŁKA: Assistance of machining parameters selection for slender tools in CNC control	
10:30-11:00	Coffee break
11:00-12:30	Paper session A3: Hall A Chairman: prof. Sergejus BORODINAS
1. Wojciech BURLIKOWSKI, Paweł KIELAN, Zygmunt KOWALIK: Synchronous reluctance machine drive using a control algorithm based on the hamiltonian mathematical model and implemented in digital signal processor	
2. Ismet GÜCÜYENER: Passenger control system design in the school transport services	
3. Alexandru IANOȘI-ANDREEVA-DIMITROVA, Petre-Miroslav VELICH, Dan MÂNDRU: Guidance system for sight-impaired people	
4. Paweł PIEKIELNY, Andrzej WAINDOK, Bronisław TOMCZUK: Multivariate calculations of the electrodynamic linear accelerator with permanent magnet support	
5. Paweł KOWOL: Equivalent circuit vs. finite element method approach in designing and modelling of a magnetorheological clutch	
11:00-12:30	Paper session B3: Hall B Chairman: prof. Bronisław Tomczuk
1. Maciej DELIŚ, Marek ZBOIŃSKI, Przemysław JÓŹWIĄK: Diagnostics of tribological systems of aircraft turbine drives based on analysis of in-service lubricating oil using selected spectrometric methods	

CONFERENCE PROGRAMME
14th INTERNATIONAL CONFERENCE
MECHATRONIC SYSTEMS AND MATERIALS

2.	Waldemar MUCHA, Waław KUS: Metamodeling as a model order reduction technique in hybrid simulation using RTFE
3.	Zygmunt KOWALIK, Wojciech BURLIKOWSKI, Paweł KIELAN: Measurement based determination of the current-flux characteristic of a synchronous reluctance machine using a standard 3-phase inverter and a digital signal processor
4.	Larisa RYBAK, L.R. KHOLOSHEVSKAYA, S.Y. KHALAPYAN: Optimal trajectory planning of the robot-tripod output link movement
13:00-14:00	Lunch
14:00-15:00	Paper session A4: Hall A Chairman: prof. Andrzej Waindok
1.	Daniel COSOVANU, Dan MÂNDRU: Control system of a soft tube-shaped actuator based on SMA
2.	Andrzej MILECKI, Dominik RYBARCZYK: Detection of the presence of a pot on a gas burner
3.	Jan MONIETA: Fundamental investigations of marine engines turbochargers diagnostic with use acceleration vibration signals
4.	Dominik RYBARCZYK: Investigation of electrohydraulic valve with the stepper motor
15:00-15:30	Spotkanie Sekcji Mechatroniki Komitetu Budowy Maszyn Hall A
15:00-15:30	Coffee break
15:30-16:30	Poster session 2:
1.	Mateusz APOŃ, Arkadiusz NIKONOWICZ, Leszek AMBROZIAK, Mirosław KONDRATIUK, Piotr BURZYŃSKI: Vision-based autonomous object tracking for Unmanned Aerial Vehicles
2.	Arkadiusz BOŻKO, Kamil DOMYSŁAWSKI, Adrian KAMIŃSKI, Leszek AMBROZIAK: Autonomous multicopter landing with the application of vision systems
3.	Grzegorz FILO: Modelling of pressure pulse generator with the use of a flow control valve and a fuzzy logic controller
4.	Kamil GUZ, Marcin ŻUKOWSKI, Krzysztof MATUS, Krzysztof SADOWSKI, Dawid KAMIENSKI Mirosław, KONDRATIUK, Leszek AMBROZIAK: Humanoid medical assistant and companion robot for patients
5.	Roland JANOTTA, Sebastian PODSĘDEK, Marian BARTOSZUK: The concept of a mechatronic temperature monitoring system for the bearings of a combine harvester
6.	Dawid KAMIENSKI, Marcin ŻUKOWSKI, Krzysztof MATUS, Mirosław KONDRATIUK, Leszek AMBROZIAK: Slam and obstacle detection for tall autonomous robotic medical assistant
7.	Pavel KLOUCEK, Norbert POMP: Advanced methods of cutting process analysis
8.	Andrzej KOTNAROWSKI: Destruction of acrylic-polyurethane coatings aged with UV radiation
9.	Andrzej KUREK, Marta KUREK, Justyna KOZIARSKA, Tadeusz ŁAGODA: Fatigue characteristics of the 6082-T6 aluminium alloy obtained in tension-compression and oscillatory bending tests
10.	Grzegorz KWIATKOWSKI, Dariusz ROZUMEK: Fatigue life of clad 254SMO, 316L and SAF2507 steels
11.	Agnieszka ŁAGODA, Adam NIESŁONY, Bartosz MAZUREK: The influence of saliva on the dental adhesive strength
12.	Agnieszka ŁAGODA, Rafał GABOR: Strength parameters of the ABS materials used in 3D printing
13.	Marian Janusz ŁOPATKA, Daniel STERNICZUK: Concept of the manipulators set for fast IEDs neutralization
14.	Krzysztof MATUS, Marcin ŻUKOWSKI, Elżbieta PAWLUCZUK, Mirosław KONDRATIUK, Leszek AMBROZIAK: Patients temperature measurement system for medical robotic assistant
15.	Marcin NAWROCKI, Paweł MENDYKA, Lesław OSTAPOW: Some problems with inverse kinematic of 8-DOF mining drilling rig boom

CONFERENCE PROGRAMME
14th INTERNATIONAL CONFERENCE
MECHATRONIC SYSTEMS AND MATERIALS

<ol style="list-style-type: none">16. Tomasz NOWAK, Krzysztof WIĘCŁAWSKI, Agnieszka BURAKOWSKA, Halina TRZASKOWSKA, Jakub SZYMANOWSKI: Analysis of changes in diesel particulate filters (DPF) in vehicles with compression ignition engines17. Jakub PALENČÁR, Jan RYBÁŘ, Rudolf PALENČÁR, Stanislav ĎURIŠ, Zuzana PEČIAROVÁ: Measurement on the Topcon CT60 non-contact optical tonometer and evaluation of measured data in teaching at university1.18. Mykola PIDGURSKYI, Yevgen RIPETSKYI, Ivan PIDGURSKYI: Research and simulation of load modes in the evaluation of mobile machines resource19. Dawid PIWOWARSKI, Stanisław ANWEILER, Sławomir SZYMOCHA: Unmanned aerial vehicle application for air pollution monitoring20. Aleš RICHTER, Fišer PAVEL: Rotary table accuracy improvement21. Jan RYBÁŘ, Miroslav CHYTIL, Stanislav ĎURIŠ, Branislav HUČKO, Filip MAUKŠ, Peter PAVLÁSEK: Use of suitable materials such as artificial cornea on eye model for calibration of optical tonometers22. Łukasz RYKAŁA, Rafał TYPIAK, Andrzej TYPIAK: Location detection of a static object using Ultra Wideband technology23. Bartłomiej SIKORA Adam PIŁAT: Design and initial study of porous core electromagnet for levitation applications24. Bartłomiej SIKORA, Adam PIŁAT, J. CIEŚLIK, J. KLOCEK: Laboratory test-rig of the levitating flexible rotor for unbalance control25. Marcin SŁOWIKOWSKI, Michał SMATER, Jacek ZIELIŃSKI, Zbigniew PILAT: Collaborative learning environment in vocational education26. Adam STULGIS, Leszek AMBROZIAK, Mirosław KONDRATIUK, Arkadiusz NIKONOWICZ: Simple sense and avoid system for Unmanned Aerial Vehicles27. Michał ŚMIEJA: The modeling of pasteurization process line in dairy industry in context of process control28. Tadeusz UHL, Paweł ZDZIEBKO, Piotr KUROWSKI, Adam MARTOWICZ: Load cell for active pantograph solution based on the Fiber-Bragg grating sensor29. Andrzej WAINDOK, Paweł PIEKIELNY, Michał ŻUŻAŁEK: Calculation of eddy current losses in a multilayered materials	<p style="text-align:center">16:30-18:00 Presentation of companies / Workshop Hall A Chairman: Andrzej Kurek</p> <ol style="list-style-type: none">1. Hubert WOLNY, Cezary BOROWIECKI, Paweł KRYSIŃSKI, Tomasz CIEŚLAK - RFWW "Rawag" Sp. z o.o.: Application of the FDM 3D printing technology in the production process of the prototype functional parts for time and cost reduction within implementation of a new products on the example of bus door system2. Aneta ZIĘBA - Nanores Sp. z o. o. Sp. k.3. Marcin MATA CZ, Marcin KNEĆ, Andrzej KUREK - Lenso Sp. z o.o.: Application of ARAMIS system for determination of fatigue load capacity in complex stress state
<p style="text-align:center">17:15-18:15 Paper session B4: Hall B Chairman: Leszek Ambroziak and Mirosław Kondratiuk</p> <ol style="list-style-type: none">1. Aleksey MIRONOV, Deniss MIRONOV: Advance technique for vibration diagnostics of planetary gears: experimental verification2. Deniss MIRONOV, Aleksey MIRONOV: Vibration based signal processing algorithm for modal characteristics change assessment3. Sara DUDZIŃSKA, Daniel GROCHAŁA, Emilia BACHTIAK-RADKA, Rafał GUBAŁA: Micro-hydraulic burnishing tools for integrated machining on CNC milling center4. Amit AILON, Shai AROGETI: Simple altitude & attitude controllers for quadrotors with model uncertainties	
<p style="text-align:center">19:00 Gala dinner in SABAŁA restaurant Closing ceremony (18:45 We are leaving together to the Sabała restaurant)</p>	

CONFERENCE PROGRAMME
14th INTERNATIONAL CONFERENCE
MECHATRONIC SYSTEMS AND MATERIALS

6.06.2018 (Wednesday)	
7:30-9:00	Breakfast
12:00-13:00	Lunch
Until 13:30	Leaving the hotel