

Bulletin of the Polish Academy of Sciences Technical Sciences (BPASTS)

Volume 69, No. 2

April 2021

CONTENTS**Special Section**

- e136716 Machine modelling and simulations**
Marek Macko, Izabela Rojek, Milan Sága, Tadeusz Burczyński, Dariusz Mikołajewski
- e136717 Modern methods in the field of machine modelling and simulation as a research and practical issue related to Industry 4.0**
Izabela Rojek, Marek Macko, Dariusz Mikołajewski, Milan Sága, Tadeusz Burczyński
- e136721 Targeted modification of the composition of polymer systems for industrial applications**
Darina Ondrušová, Ivan Labaj, Mariana Pajtášová, Juliana Vršková, Slavomíra Božeková, Andrea Feriancová, Petra Skalková
- e136719 Automated test bench for research on electrostatic separation in plastic recycling application**
Roman Regulski, Dorota Czarnecka-Komorowska, Cezary Jedryczka, Dariusz Sędziak, Dominik Rybarczyk, Krzysztof Netter, Mariusz Barański, Mateusz Barczewski
- e136723 Frequency of free vibration in systems with a power-law restoring force**
Ivan Grega, Robert Grega, Jaroslav Homisin
- e136718 Theoretical study of heat conduction in the multi-disc brake integrated into the drive wheel AGV during braking**
Daniel Varecha, Róbert Kohár, Michal Lukáč
- e136720 The composting of PLA/HNT biodegradable composites as an eco-approach to the sustainability**
Dorota Czarnecka-Komorowska, Katarzyna Bryll, Ewelina Kostecka, Katarzyna Gawdzińska, Elżbieta Piesowicz, Małgorzata Tomasiak
- e136722 Intelligent system supporting technological process planning for machining and 3D printing**
Izabela Rojek, Dariusz Mikołajewski, Piotr Kotlarz, Marek Macko, Jakub Koprowski
- e136724 PVA hydrogel deformation in response to change in temperature or pH**
Katarzyna Kazimierska-Drobny
- e136725 Axial stiffness for large-scale ball slewing rings with four-point contact**
Slavomir Hrcek, Robert Kohar, Jan Steininger
- e136740 Application of non-contact ultrasonic method in air to study fiber-cement corrugated boards**
Radosław Drelich, Michał Rosiak, Michał Pakuła

Power Systems and Power Electronics

- e136730 Influence of lightning current surge shape and peak value on grounding parameters**
Artur Łukaszewski, Łukasz Nogal
- e136732 Comparative analyses of residential building efficiency for AC and DC distribution networks**
Faraz Ahmad, Faizan Dastgeer, Hasan Erteza Gelani, Sidra Khan, Mashhood Nasir
- e136733 Traction power supply with three paralleled single phase voltage source inverters**
Tomasz Osypinski, Tadeusz Płatek, Zdzisław Chłodnicki
- e136746 A novel source side power quality improved soft starting of three-phase induction motor using a symmetrical angle controller through pic microcontroller**
S. Selvaperumal, N. Krishnamoorthy, G. Prabhakar
- e136738 An analytical-numerical method for calculating the stationary thermal field in electrical systems with elliptical cross-sections**
Jerzy Gołębiowski, Marek Zaręba
- e136739 High quality repetitive control system for a grid-tied converter under distorted grid voltage conditions – design and implementation**
Bartłomiej Ufnalski, Andrzej Straś, Lech M. Grzesiak
- e136747 A reliability-operational analysis of a track-side CCTV cabinet taking into account interference**
Jacek Paś, Adam Rosiński, Kamil Biały
- e136742 Evaluation of gate drive circuit effect in cascode GaN-based applications**
Q.Y. Tan, E.M.S. Narayanan
- e136743 Ultra-fast hybrid systems for protecting direct current circuits with high magnetic energy**
Marek Bartosik, Piotr Borkowski, Franciszek Wójcik

Material Science and Nanotechnology

- e136726 Multivoltaic GaSe<SmCl₃> clathrate as new hybrid functional nanostructure**
Fedir Ivashchyshyn, Anna Pidluzhna, Dariusz Calus, Orest Hryhorchak, Piotr Chabecki, Oleksandr Makarchuk
- e136810 Corrosion protection of 316L stainless steel by (PVDF/HA) composite coating using a spinning coating technique**
Asra Ali Hussein, Nawal Mohammed Dawood, Ammar Emad Al-kawaz
- e136745 Influence of mechanical alloying process on structural, mechanical and tribological behaviours of CNT reinforced aluminium composites – a statistical analysis**
P. Manikandan, A. Elayaperumal, R. Franklin Issac
- e136735 Effect of TiO₂ on the microstructure and phase composition of Al₂O₃ and Al₂O₃-TiO₂ APS sprayed coatings**
Monika Michałak, Leszek Łatka, Paweł Sokołowski, Rolando Candidato Jr., Andrzej Ambroziak

Thermodynamics, Mechanical, Aeronautical Engineering and Robotics

- e136744 Analysis of mass transfer in marine engine with prechamber combustion spark ignition system**
Ireneusz Pielecha
- e136727 Mechanics of infinitesimal gyroscopes on helicoid-catenoid deformation family of minimal surfaces**
Vasyl Kovalchuk, Barbara Gołubowska, Ivailo Mladenov
- e136736 Double enveloping worm gear modelling using CAD environment**
Piotr Połowniak, Mariusz Sobolak, Adam Marciniec

Control and Informatics

- e136729 Application of the Lagrange-Sylvester formula to the computation of the solutions of state equations of fractional linear systems**
Tadeusz Kaczorek
- e136728 Improving LUT count of FPGA-based sequential blocks**
Alexander Barkalov, Larysa Titarenko, Małgorzata Mazurkiewicz, Kazimierz Krzywicki

Civil Engineering

- e136731 Effects of zeolites and hydrated lime on volumetrics and moisture resistance of foamed warm mix asphalt concrete**
Anna Chomicz-Kowalska, Krzysztof Maciejewski, Mateusz Marek Iwański, Karolina Janus
- e136734 Probability distribution functions for service loads of frame scaffolding**
Ewa Błazik-Borowa, Michał Pieńko, Iwona Szer, Bożena Hoła, Krzysztof Czarnocki

Artificial and Computational Intelligence

- e136737 Deep adversarial neural network for specific emitter identification under varying frequency**
Keju Huang, Junan Yang, Hui Liu, Pengjiang Hu
- e136741 Accurate identification on individual similar communication emitters by using HVG-NTE feature**
Ke Li, Wei Ge, Xiaoya Yang, Zhengrong Xu