

## CONTENTS

### Mechanical and Aeronautical Engineering, Thermodynamics

#### Mesh suitability for CFD simulations performed on axial compressor airfoil cascades

Adam Tater, Pavel Macák, Patrik Kovář

#### Attitude Control System for an Earth observation satellite

Janusz Narkiewicz, Szabolcs Grünvald, Mateusz Sochacki

#### Some applications of the generalized Laplace transform and the representation of a solution to Sobolev-type evolution equations with the generalized Caputo derivative

Mustafa Aydin, Nazim I. Mahmudov

#### A global path-planning algorithm based on critical point diffusion binary tree for a planar mobile robot

Zhiyong Yang, Lipeng Wang, Zejun Cao, Zhi Zhang, Zhuang Xu

#### Optimization sealing and cooling to control gas intrusion in a floating-wall combustion chamber

Hong Shi, Rui Wang, Mingmin Chen, Jiao Wang, Jie Yuan, Qianwei Zhang, Kaijie Yang

#### Development and implementation of robotized wire arc additive repair of a gas turbine diaphragm

Piotr Steckowicz, Paweł Pyrzanowski, Efe Bulut

#### Advanced fuel system with gaseous hydrogen additives

Denys Shalapko, Mykola Radchenko, Anatolii Pavlenko, Roman Radchenko, Andrii Radchenko, Maxim Pyrysunko

#### Non-bifurcation behavior of laminated composite plates under in-plane compression

Mehdi Bohlooly Fotovat, Tomasz Kubiak

#### Innovative thrust vectoring system with moveable jet vanes integrated with a moveable diffuser – Measurement and analysis of selected nozzle performance parameters

Łukasz K. Nocoń, Marta Grzyb, Piotr Szmidt, Łukasz M. Nowakowski

#### The clamping selection method to reduce the vibration of large-size workpieces during the face milling process

Krzysztof J. Kaliński, Marek A. Galewski, Natalia Stawicka-Morawska, Krzysztof Jemielniak, Michał R. Mazur

#### Analysis of thermal characteristics with multi-physics coupling for the feed system of a precision CNC machine tool

Junjian Zheng, Xiaolei Deng, Junshou Yang, Wanjun Zhang, Xiaoliang Lin, Shaofei Jiang, Xinhua Yao, Hongyao Shen

### Civil Engineering

#### A pre-protection method for a pipe-jacking channel over shield tunnels

Yunliang Cui, Xukun Yang, Xinquan Wang, Hongguo Diao, Xiao Li, Yuanyuan Gao

#### Contribution to the a priori assessment of the value of the caving zone expansion coefficient in the forecast of ground surface uplift caused by the flooding of closed coal mines in the Ruhr region/Germany

Rafał Misa, Mateusz Dudek, Anton Sroka, Krzysztof Tajduś, Dawid Mrocheń

#### The effectiveness of impregnation of building materials of cellulose origin and its impact on selected properties

Paweł Niewiadomski, Anna Karolak, Marta Olesiak, Agnieszka Chowaniec-Michalak

### Electronics, Telecommunication and Optoelectronics

#### Military suitability of COTS UAV due to the level of radiated emissions

Rafał Przesmycki, Jarosław Michalak

### Material Science and Nanotechnology

#### Analysis of mechanical properties and structure of samples filled with continuous glass fiber produced in composite filament fabrication technology

Dawid Marciniak, Dariusz Sykutera, Piotr Czyżewski

### Artificial and Computational Intelligence

#### An improved facial image retrieval using hybrid cheetah optimization algorithm

Balasubramanian C, Raja Sekar J

### Power Systems and Power Electronics

#### Diagnosis of inter-turn short circuit fault in IPMSMs based on the combined use of greedy tracking and random forest

Jianping Wang, Jian Ma, Dean Meng, Xuan Zhao, Kai Zhang, Qiuan Liu, Kejie Xu