

Content

118–123
Experimental Solution of the Influence of Tire Pressure on Vehicle Consumption and their Service Life

Patrik Balcar, Martin Svoboda, Milan Chalupa, Milan Sapieta, Pavel Houška, Alexandr Fales, Martin Novák

124–132
Evaluation of C45 Steel Hardening Process Using High-Speed Videography and ISO 9950 Test

Petr Beneš, Vojtěch Taubr

133–147
Hybrid ANN–GA Modeling and Experimental Optimization of GMAW-Based Additive Manufacturing of Aluminum 5083 for Enhanced Mechanical Properties

Teephet Chaiyason, Suriya Prasomthong, Panuwat Thosa, Sittichai Charonerat, Phattharapong Keidlaphi

148–163
3D Printing – Dimensional Accuracy and Stability of PLA and PETG Prints Using the FDM Technology

Alexandr Fales, Vít Černoblávek, Marcin Suszynski, Jan Štěrba, Patrik Balcar, Pavel Houška

164–175
Process Parameter Effects on Cutting Efficiency and Specific Energy in Abrasive Water Jet Machining

Lianhuan Guo, Teng Ma, Jin Lan

176–184
The Effect of Drill Bit Features on Surface Quality, Drill Wear and Drilling Cost – Sustainable Drilling

Murat Kiyak

185–198
Influence of the Manufacturing Route on the High-Temperature Oxidation Behavior of IN718 Alloy in Simulated Modern Energy Environments

Patricia Lovašiová, Jan Hruška, Tomáš Lovaši, Miroslav Zetek, Yusuf Bakir, Ivana Zetková

199–219
Spinning Bath Evaporator Availability and Reliability Enhancement Proposal

Jan Palátka, Karel Mayer, Martin Pexa, Eva Olmrová

220–232
Machine Learning-Based Predictive Modelling of EDM and EAM-V Processes for Performance Analysis

Shrihar Pandey, Rajesh Kumar, Abhay Kumar Singh, Robert Cep, Priyanka Singh, Mibir Kumar Pandey, B. Swarna

233–238
Microstructure and Mechanical Properties of Biomedical Co-Cr-Mo Alloy Produced by Precision Casting and 3D Printing Technologies

Hana Thürllová, Dalibor Vojtěch

239–248
Finite Element Secondary Development of Constitutive Model for Titanium Alloy Vibration-Assisted Cold Upsetting Forming

Xu Yani, Wang Ying, Wei Chuban, Lin Kai, Shu Xuedao

249–256
Thermoplastic Resin Flow Behaviour in Foam Core Sandwich Composites for Aerospace Applications During Vacuum Infusion Process

Jana Zemanova, Bohuslav Cabrnock, Michal Kral

Advisory Board

Prof. hab. Dr. Stanislav Adamczak, MSc.

Politechnika Kielce, Poland

Prof. Dana Bolibruchová, MSc. Ph.D.

UZ in Zilina, Slovakia

Prof. Robert Čep, MSc., Ph.D.

VSB TU of Ostrava, Czech

Prof. Dr. M. Numan Durakbasa

Vienna University of Technology, Austria

Prof. Berenika Hausnerova, MSc., Ph.D.

TBU in Zlin, Czech

Prof. Dr. František Holešovský, MSc.

University of West Bohemia, Czech

Prof. Jozef Janovec, Sc.D., MSc.

SUT in Bratislava, Slovakia

Prof. h. c. Stanislav Legutko, MSc., Sc.D.

Politechnika Poznańska, Poland

Prof. Antonin Kriz, MSc., Ph.D.

UJEP in Usti n. Labem, Czech

Prof. Pavel Kovac, MSc., Ph.D.

University of Novi Sad, Serbia

Prof. Dr. János Kundrák, MSc., Sc.D.

University of Miskolc, Hungary

Prof. dr hab. inż. Tomasz Lipiński

UWMazurski in Olsztyn, Poland

Prof. Jan Mádl, MSc., Ph.D.

CTU in Prague, Czech

Prof. Ioan D. Marinescu, Ph.D.

University of Toledo, USA

Prof. Štefan Michna, MSc., Ph.D.

UJEP in Usti n. Labem, Czech

Prof. Dr. Ivan Mrkvica, MSc.

VSB TU of Ostrava, Czech

Prof. Iva Nová, MSc., Ph.D.

TU in Liberec, Czech

Prof. Pavel Novák, MSc., Ph.D.

ICTH in Prague, Czech

Prof. Dr. Hitoshi Ohmori, MSc.

RIKEN, Japan

Prof. Lubomír Šooš, MSc., Ph.D.

SUT in Bratislava, Slovakia

Prof. Karol Vasilko, MSc., Sc.D., Dr. h. c.

FPT in Presov, TU in Kosice, Slovakia

Prof. Dr. Dalibor Vojtěch, MSc.

ICTH in Prague, Czech

Col. Assoc. Prof. Milan Chalupa, Ph.D.

UJEP in Usti n. Labem, Czech

Assoc. Prof. Jan Řehoř, MSc., Ph.D.

University of West Bohemia, Czech

Assoc. Prof. Dana Stancekova, MSc., Ph.D.

University of Zilina, Slovakia

Assoc. Prof. Jaroslava Svobodova, MSc., Ph.D.

CZU in Prague, Czech

Assoc. Prof. Miroslava Tavodova, MSc., Ph.D.

TU of Zvolen, Slovakia

Assoc. Prof. Jarmila Trpcevska, MSc., Ph.D.

TU of Kosice, Slovakia

Dr. Michael N. Morgan

John Moores University, Great Britain

Dr. Thomas Pearce

UWE Bristol, Great Britain

Editor-in-Chief

Assoc. Prof. Martin Novak, Eng. MSc., Ph.D.

Editor

Matyáš Grunt, BSc.

Editorial Office and Publisher Address

J. E. Purkyne University in Usti n. Labem

Pasteurova 3334/7, 400 01 Usti n. Labem

Czech Republic | VAT: CZ44555601

e-mail: editors@journalmt.com

Print

PrintPoint Ltd, Prague

Published 6 p. a., 300 pcs., in April 2026

140 pages

Permission: MK CR E 20470

ISSN 1213–2489 (print)

ISSN 2787–9402 (on-line)

<http://www.scopus.com>

<https://www.webofscience.com>