



University of Belgrade Faculty of Mechanical Engineering

TRANSACTIONS

FME TRANSACTIONS

Editor: Boško Rašuo University of Belgrade **Associate Editor:** Stevanović Vladimir University of Belgrade **Editorial Board:** Avellan François Swiss Federal Institute of Technology, Zurich, Switzerland **Cizmas Paul** Texas A&M University, College Station, USA **Dulikravich S. George** Florida International University, Miami, USA **Đorđević Vladan** University of Belgrade Ehmann F. Kornel Northwestern University, Evanston IL, USA **Felix Hong** Wayne State University, Detroit, USA Fragassa Cristiano Alma Mater Studiorum - University of Bologna, Italy Gabi Martin Karlsruher Institut für Technologie (KIT), Germany Gaiić Zoran Rutgers University, USA Jakirlic Suad Technische Universität Darmstadt, Germany Jovanović Jasmina University of Belgrade **Kartnig Georg** Technische Universität Wien, Austria Klimenko A. Sergei National Academy of Sciences, Kiev, Ukraine **Komatina Mirko** University of Belgrade Meerkamm Harald Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany Mester Gyula University of Szeged, Szeged, Hungary Minak Giangiacomo Alma Mater Studiorum - University of Bologna, Italy **Nedić Novak** University of Kragujevac Plančak Miroslav University of Novi Sad **Putnik Goran** University of Minho, Portugal Radovanović Miroslav University of Nis Sedmak Aleksandar University of Belgrade **Soutis Constantinos** The Unversity of Manchester, Manchester, UK Stamenović Dimitrije Boston University, Boston, USA **Technical Editor: Sedmak Simon** University of Belgrade Published by:

University of Belgrade, Faculty of Mechanical Engineering

The journal is covered in the Emerging Sources

Citation Index (ESCI) Clarivate Analytics services.

Coatings

ISSN 1451-2092 UDC: 621 Volume 45, No 3, 2017, pp. 315 – 458 CONTENTS PAGE 315 Giangiacomo Minak, Cristiano Fragassa, Ana **Pavlovic** Determination of Stress Distribution in Women's Shoes During High-Heeled Gait Dario Vangi, Antonio Virga, Michelangelo Gulino 323 Study on the Most Influential Parameters in Low-Power Laser Generation Ultrasound Marco Silvestri, Matteo Confalonieri, Andrea 331 **Ferrario** Piezoelectric Actuators for Micro Positioning Stages in Automated Machines: Experimental Characterization of Open Loop Implementations Giorgio Zattini, Ana Pavlovic, Cristiano 339 Fragassa, Loris Giorgini Characterization of Solid Residues Emerging During Ultrasonic Cleaning Treatments of Tyre Moulds Milan Sljivic, Ana Palovic, Jovica Ilic, Mico 348 Stanojevic, Slavisa Todorovic Comparing the Accuracy of Professional and Consumer Grade 3D Printers in Complex Models Production 354 Ana Pavlovic, Milan Sljivic, Milija Kraisnik, Jovica Ilic, Anita Anic Polymers in Additive Manufacturing: the Case of a Water Pump Impeller 360 M. Ragni, D. Castagnetti, A. Spaggiari, F. Muccini, E. Dragoni, M. Milelli, S. Girlando, P. Borghi Shear Strength Characterization of Metal-Elastomer **Bonded Joints** Ante Skoblar, Roberto Žigulić, Sanjin Braut, 367 Sebastijan Blažević Dynamic Response to Harmonic Transverse Excitation of Cantilever Euler-Bernoulli Beam Carrying a Point Sebastijan Blažević, Sanjin Braut, Roberto 374 Žigulić, Ante Skoblar Electromechanical Vibrations of the Vertical Lathe Machining Centre Caused by the Fault of the Working Table Rolling Bearing 382 Cristiano Fragassa, Ivan Macaluso, Massimiliano Vaccari, Giuseppe Lucisano Measuring the Mechanical and Climatic Conditions Encountered by Palletized Products in Handling and **Transport** Felipe Vannucchi de Camargo, Cristiano 394 Fragassa, Ana Pavlovic, Matteo Martignani Analysis of the Suspension Design Evolution in Solar Cars A. Franco Bulian, Flaviano Collavini, Alessia 405 Matellon Investigating the Effects of Weathering on Wood

(Contents continued on inside back cover)

The publication of the Vol. 45, No 3 of this Journal was fully financially supported by the Ministry of Education and Science of the Republic of Serbia. This support is gratefully acknowledged.

Printed by:

"PLANETA print", Ruzveltova 10, 11000 Belgrade

Aims and Scope:

The journal FME Transactions publishes original papers (reviewing and contributed papers, and communications) from all fields of Mechanical Engineering, which is, as a branch of Engineering, considered in the journal in its broadest possible sense. Thus, the articles are welcome from: Applied Mechanics, Fluids Engineering, Thermodynamics, Heat and Mass Transfer, Robotics, Material Science, Tribology, Combustion, Mechanical Design and Machine Dynamics, Productional, Industrial, Agricultural, Aerospace, Processing, Railway, Biomedical and Control Engineering, Mechanization, Hydro- and Thermo-power Systems, Internal Combustion Engines and Vehicle Dynamics, Energy Resources Technology, Military Technology, Naval Architecture, and Applied and Industrial Mathematics.

Theoretical, experimental and computational analyses of various problems of Mechanical Engineering are equally welcome and acceptable for publication. In addition, there will be published book reviews, announcements of symposia, and in special issues, proceedings of selected papers from symposia organized by the Faculty of Mechanical Engineering in Belgrade.

Reviewing papers will be published by invitation only. One volume consists of four numbers.

Instructions for Authors:

A FME Transaction manuscript should by written clearly and concisely in correct English, with assumptions clearly identified, with precise logic, with relevance to practice described, and with actual accomplishments of the work plainly stated and honestly appraised.

Normally, the length of a reviewing paper is up to 12 pages, the length of a contributed paper is up to 8 pages, while the length of a short communication should not exceed 4 pages. All papers are subject to a reviewing process. During the process the names of referees will be kept confidential to authors, and also the names of authors will remain anonymous to referees. As a rule the reviewing process should be accomplished in 2-3 months. Final acceptance of a paper for publication in the Journal is based on the decision of the Editorial Board.

Template for Manuscript:

http:/www.mas.bg.ac.rs/transactions

Submission of Papers:

Papers intended for publication in FME Transactions should be submitted to the Editor, in the electronic form, to the following address:

fme-transactions@mas.bg.ac.rs

or:

Prof. Bosko Rasuo, Editor brasuo@mas.bg.ac.rs Faculty of Mechanical Engineering Kraljice Marije 16, 11120 Belgrade 35 Serbia

On line service:

http:/www.mas.bg.ac.rs/transactions

ISSN 1451-2092 UDC: 621

Volume 4	45. N	No 3.	2017.	pp.	315 - 6	458

PAGE
412
421
428
435
441

Compression

Diagnostics

Dejan V. Matijević, Vladimir M. Popović

Overview of Modern Contributions in Vehicle Noise and Vibration Refinement with Special Emphasis on

448