

IJME

International Journal of
APPLIED MECHANICS



AND

ENGINEERING

2025

Volume 30

Number 3

ISSN 1734-4492
e-ISSN 2353-9003

University of Zielona Góra, POLAND

Honorary Editor-in-Chief and Founder

Edward Walicki

Editor-in-Chief

Paweł Jurczak

Regional Editor

K.R. Rajagopal

Siu-Lai Chan

Editorial Board

P.Ailawalia	O.Manca
H.I.Andersson	J.Mikielewicz
G.Bergeles	A.S.Mujumdar
R. Będziński	H.Münstedt
A.Biń	H.Ouakad
Y.C.Chen	M.Pakdemirli
B.S.Dandapat	J.-M.Piau
D.Durban	I.Pop
N.El-Kissi	M.M.Rashidi
I.Emri	T.G.Rozgonyi
J.Falicki	J.T.Sawicki
M.Fillon	A.Sobczyk
P.Frankovský	A.R.Srinivasa
M.Z.Galicki	G.Stachowiak
R.S.R.Gorla	D.Steigmann
A.Gronowicz	T.A.Stolarski
R.Halama	Hyung Jin Sung
M.A.Hossain	A.Z.Szeri
D.B.Ingham	H.S.Takhar
Z.Kabza	P.Trebuña
M.Królak	M.Wagner
K.Leksycki	A.Walicka
K.M.Liew	E.Wittbrodt
K.Magnucki	A.K.Yadav

Publikacja jest finansowana przez Ministra Edukacji i Nauki

Printed in Poland

University of Zielona Góra, Poland

Contents

P. Ailawalia, J. Falicki, S. Salhotra	
Anti-plane deformation in Green-Naghdi (Type III) thermoelastic medium.....	1
M. Bouzaffour, F. Yassine, M. Nassraoui	
Effect of the choice of drawbead type on the spring back: comparative study between two types of drawbead.....	11
D.K. Chauhan, J.R. Patel, G.M. Deheri	
Influence of couple stress and magnetic fluid on the performance of step slider bearing	26
Y. Fartouh, M. Bouzaffour, M. Nassraoui	
Springback prediction of sheet metal hydroforming using finite element analysis and artificial neural networks	42
T. Fayaz, M.S. Ansari, O. Otegbeye, M. Trivedi	
Flow and heat transfer of hybrid Jeffrey nanofluid near a Riga plate with non-linear convection	57
M. Garavaglia, M. Rottoli, M. Mantegazza, F. Grisoni	
Design of expanded metal meshes for generation of turbulence in shell-and-tube heat exchangers for industrial applications	75
O.A. Mustafa, A.S. Abedalh, Z.H. Alkhaffaf	
Experimental investigation of the thermal behavior of semi-solid materials.....	87
F.U. Pathan, M.M. Patil, P.R. Baviskar, V.S. Aher	
An exploration of vibration based damage detection techniques for composite materials	97
B. Pira, L. Topilla	
The use of Burmester curves in combination with the least square method in the design of the Stephenson-I type mechanism.....	114
Y. Ri, S. Ryang, G. Ryong	
Study on the influence of sliding bearing stiffness on the dynamic response of hydro-generator shaft	128

This work is subject to copyright. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the publisher, except as stated below. Single photocopies of single articles may be made for private study or research. Illustrations and short extracts from the text of individual contributions may be copied provided that the source is acknowledged, the permission of the authors is obtained and Editorial Office of IJAME is notified. Authorization to photocopy items for internal or personal use, is granted by Editorial Office of IJAME to libraries and other users, provided that the base fee of US\$ 20.00 per copy is paid directly to Editorial Office of IJAME.