

INTEGRITET I VEK KONSTRUKCIJA – Specijalno izdanje A STRUCTURAL INTEGRITY AND LIFE – Special Issue A

ZAJEDNIČKO IZDANJE DRUŠTVA ZA INTEGRITET I
VEK KONSTRUKCIJA „PROF. DR STOJAN SEDMAK“
I INSTITUTA ZA ISPITIVANJE MATERIJALA (IMS)
PERIODIČNOST IZLAŽENJA - TRIPUT GODIŠNJE
PUBLISHED IN THREE ISSUES ANNUALLY
JOINT EDITION OF THE SOCIETY FOR STRUCTURAL
INTEGRITY AND LIFE “PROF. DR STOJAN SEDMAK”
AND THE INSTITUTE FOR MATERIALS TESTING

Vol. 25 | Special Issue A | S1 – S100 | BEOGRAD | Srbija / Serbia | 2025

IZDAVAČI / PUBLISHERS

Društvo za integritet i vek konstrukcija „Prof. dr Stojan Sedmak“
Institut za ispitivanje materijala (IMS), Beograd
Society for structural integrity and life “Prof. Dr Stojan Sedmak”
Institute for materials testing (IMS), Belgrade

GLAVNI I ODGOVORNI UREDNIK / EDITOR-IN-CHIEF

Zoran Radaković

POČASNI GL. ODG. UREDNIK / EDITOR-IN-CHIEF EMERITUS

Aleksandar Sedmak

ASISTENT UREDNIKA / ASSISTANT EDITOR

Branislav Đorđević, Simon Sedmak

UREDNIŠTVO / EDITORIAL BOARD

Miodrag Arsić, Zijah Burzić, Katarina Čolić, Miloš Đukić, Radomir Jovičić, Snežana Kirin, Taško Maneski, Bojan Međo, Ljubica Milović, Dejan Momčilović, Nikola Momčilović, Miodrag Pavišić, Ana Petrović, Blagoj Petrovski, Dragoslav Šumarac, Milica Tošić, Nataša Trišović, Milorad Zrilić, Vera Šijački-Žeravčić

MEĐUNARODNO UREDNIŠTVO / INTERNATIONAL EDITORIAL BOARD

Moussa Naït Abdelaziz (France), Claudia Barile (Italy), Željko Božić (Croatia), Julien Capelle (France), Katia Casavola (Italy), José António Correia (Portugal), Dorin Dehelean (Romania), Parsa Ghannadi (Iran), Nenad Gubelj (Slovenia), Jianying He (Norway), Francesco Iacoviello (Italy), Dmitry P. Il'yaschenko (Russian Federation), Abílio De Jesus (Portugal), Philippe Jodin (France), Dražan Kozak (Croatia), Hong Luo (China), Mersida Manjgo (Bosnia and Herzegovina), Liviu Marshavina (Romania), Mohammed Hadj Meliani (Algeria), Peter Monla (Slovakia), Katarina Monkova (Slovakia), Giovanni Pappalettera (Italy), Carmin Pappalettera (Italy), Guy Pluvinage (France), Dorin Radu (Romania), G.C. Rana (India), Manoj Sahni (India), Ivan Samardžić (Croatia), Pankaj Thakur (India), László Tóth (Hungary), Rosina Yordanova (Bulgaria)

Direktor časopisa / Journal director – Ljubica Milović

Tehnički urednik / Technical editing – Simon Sedmak

Anotirana bibliografija i stručna klasifikacija / Bibliography and library classification – Ilinka Smiljanić

Priprema i štampanje ovog broja potpomognuto je od strane Ministarstva nauke, tehnološkog razvoja i inovacija Republike Srbije

Published with financial support of the Ministry of Science, Technological Development and Innovation of the Republic of Serbia

CENE I NARUČIVANJE / PRICES AND ORDERING

Godišnja pretplata / Annual subscription (only Serbia)
– preduzeća / corporate order2400 RSD
– pojedinačno / personal order1200 RSD
– pojedinačni broj / single issue1000 RSD
Inostranstvo / Annual subscription (all other countries).....50 EUR
Uplata na dinarski tekući račun DIVK broj 200-2410200101872-30 Banka Poštanska štedionica, Beograd
Foreign Euro payments through bank account:
IBAN: CS73245007080000056231
No. of party: 00-708-0000056.2 544300/978
Tiraž / Circulation: 400
Štampanje / Print: RIC grafičkog inženjerstva Tehnološko-metalurškog fakulteta Univerziteta u Beogradu, Karnegijeva 4

SADRŽAJ / CONTENTS

Guest Editors of Structural Integrity and Life-Special Issue A 2025 / Introduction to the Special Issue	S2
<i>S. Poonam</i> : Plane wave propagation in exponentially graded non-local couple stress solid media under initial stress	S3
<i>S. Gonsalves, S. Gabbur</i> : Enhancing convective heat transfer in engine oil: a comparative study of various nanoparticles	S9
<i>A. Whan, H. Singh, N. Malik, A. Balayan, S. Dwivedi, A. Sharma, M. Sahni, R. Mallick</i> : Optimising the design of auxetic core airfoil for wing morphing applications	S17
<i>S.K. Paul, P.D. Mehta, M. Sahni, S. Deep</i> : Stress analysis of exponentially graded NA-B ₄ C and HCS-MgO pressurised cylinder using Adomian Decomposition Method	S25
<i>S. Deep, S.K. Paul</i> : An analytical approach for Love wave dispersion in a viscoelastic layer lying on an elastic layer with imperfect interface: under stress-free and clamped boundary conditions	S35
<i>R. Kumar, R. Mehta, D. Kumar, M.M. Gaur</i> : Numerical analysis of nanofluid flow through mixed convective nonlinear stretching sheet induced in porous media along with thermal radiation	S45
<i>A.P. Singh, V. Shende, P.K. Chaurasiya, V. Pandey, M. Sahni, E. Leon-Castro</i> : Analysis of the impact of SiO ₂ nanoparticles in conventional lube oil on AISI 52100 steel	S53
<i>S. Ishwarya, R. Bhatia, P. Mishra, P.S. Stanimirović</i> : Numerical solution of fourth order generalised Kuramoto-Sivashinsky equation using modified quintic B-spline differential quadrature method S57	
<i>R. Panchal, M. Sahni</i> : Thermal safety measures for creep deformation of pressurized spherical shell fabricated from isotropic material	S67
<i>R. Panchal, R. Sharma</i> : Thermal elastic-plastic transition of functionally graded thick-walled pressurized rotating cylinder fabricated from transversely isotropic material	S75
<i>A. Nagar, R. Sharma</i> : Fracture analysis of hemispherical dental implant crowns composed of functionally graded transversely isotropic material under external pressure.....	S85
<i>T. Fayaz, O. Otegbeye, M.S. Ansari, M. Trivedi</i> : Jeffrey nanofluid flow induced due to the impulsive movement of Riga plate	S93

CIP – Katalogizacija u publikaciji

Narodna biblioteka Srbije, Beograd

621

INTEGRITET i vek konstrukcija: časopis Društva za integritet i vek konstrukcija (DIVK) = Structural Integrity and Life: Journal of the Society for Structural Integrity and Life / glavni i odgovorni urednik Aleksandar Sedmak – God. 1, br. 1 (2001) – Beograd (Bulevar vojvode Mišića 43); Društvo za integritet i vek konstrukcija (DIVK): Institut za ispitivanje materijala (IMS), 2001 – (Beograd: RIC grafičkog inženjerstva Tehnološko-metalurškog fakulteta Univerziteta u Beogradu). -29cm
Triput godišnje. – Članci i rezimeji uporedo na engleskom jeziku. - Nastavak publikacije:

Stručni bilten GOŠA = ISSN 0352-017X

ISSN 1451-3749 = Integritet i vek konstrukcija

COBISS.SR-ID 181616135

REDAKCIJA ČASOPISA / OFFICE

Adresa / Address:

Kraljice Marije 16 (soba 503), 11000 Beograd

Tel: +381-11- 3302497 Fax: +381-11-3370364

E-mail: kancelarija@divk.org.rs

www.divk.org.rs/ivk