

# INTEGRITET I VEK KONSTRUKCIJA STRUCTURAL INTEGRITY AND LIFE

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. 18 | No. 2 | 87 – 156 | BEOGRAD | Srbija / Serbia | 2018

## 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

Aleksandar Sedmak

## UREDNIŠTVO / EDITORIAL BOARD

Miodrag Arsić, Zijah Burzić, Katarina Čolić, Katarina Gerić, Radomir Jovičić, Snežana Kirin, Taško Maneski, Ljubica Milović, Dejan Momčilović, Milosav Ognjanović, Miodrag Pavišić, Blagoj Petrovski, Zoran Radaković, Marko Rakin, Dragoslav Šumarac, Milica Tošić, Nataša Trišović, Milorad Zrilić, Vera Šijački-Žeravčić

## MEDUNARODNO UREDNIŠTVO / INTERNATIONAL EDITORIAL BOARD

Moussa Naït Abdelaziz (France), Todor Adžiev (Macedonia), Petar Agatonović (Germany), Donka Angelova (Bulgaria), Claudia Barile (Italy), Željko Božić (Croatia), Julien Capelle (France), Katia Casavola (Italy), José António Correia (Portugal), Dorin Dehelean (Romania), Nenad Gubelj (Slovenia), Francesco Iacoviello (Italy), Abilio De Jesus (Portugal), Philippe Jodin (France), Dražan Kozak (Croatia), Mersida Manjgo (Bosnia and Herzegovina), Liviu Marshavina (Romania), Pankaj Thakur (India), Giovanni Pappaletta (Italy), Carmin Pappaletta (Italy), Guy Pluvinage (France), Ivan Samardžić (Croatia), László Tóth (Hungary), Rosina Yordanova (Bulgaria)

## Tehnički urednik / Technical editing

Zoran Radaković

## Anotirana bibliografija i stručna klasifikacija / Bibliography and library classification

Ilinka Smiljanić

**Priprema i štampanje ovog broja potpomognuto je od strane Ministarstva prosvete, nauke i tehnološki razvoj Republike Srbije**

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

## CENE I NARUČIVANJE / PRICES AND ORDERING

Godišnja pretplata / Annual subscription (only Serbia)  
– preduzeća / corporate order .....2400 RSD  
– pojedinačno / personal order .....1200 RSD  
– pojedinačni broj / single issue .....1000 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: CS7324500708000056231  
No. of party: 00-708-0000056.2 544300/978

Tiraž / Circulation: 400

Štampa / Print: RIC grafičkog inženjerstva Tehnološko-metalurškog fakulteta Univerziteta u Beogradu, Karnegejeva 4

## 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](mailto:kancelarija@divk.org.rs)

[www.divk.org.rs/ivk](http://www.divk.org.rs/ivk)

## SADRŽAJ / CONTENTS

*S. Sharma, S. Yadava, R. Sharma:*

Creep Torsion in Thick-Walled Circular Cylinder Under Internal and External Pressure.....89

*L. Jeremić, B. Đorđević, S.A. Sedmak, A. Sedmak, M. Rakin, M. Aranđelović:*

Effect of Plasma Hardfacing and Carbides Presence on the Occurrence of Cracks and Microcracks .....99

*Lj. Janjušević:*

Mihailo Petrović's Work on Development of Military Structures and Equipment .....105

*S. Sharma, R. Panchal:*

Creep Stresses in Functionally Graded Rotating Orthotropic Cylinder with Varying Thickness and Density Under Internal and External Pressure.....111

*A. Kumar, D.S. Pathania, S. Singh:*

Thermo-Mechanical Behaviour of Microstretch Thermoelastic Medium with Microtemperatures Subjected to Input Heat Source .....121

*P. Thakur, M. Sethi, S.D. Shahi, S.B. Singh, F.S. Emmanuel:*

Exact Solution of Rotating Disc with Shaft Problem in the Elastoplastic State of Stress Having Variable Density and Thickness .126

*P. Thakur, M. Sethi, S.D. Shahi, S.B. Singh, F.S. Emmanuel, J. Lozanović Šajić:*

Modelling of Creep Behaviour of a Rotating Disc in the Presence of Load and Variable Thickness by Using Seth Transition Theory 133

*A. Ghouaoula, A. Hocine, D. Chapelle, M.L. Boubakar, M. Hadj Meliani:*

Analytical Prediction of Behaviour of Damaged Composite Tubular Structures Under Quasi-Static Pressure .....141

*M. Amara, O. Bouledroua, M. Hadj Meliani, B.G.N. Muthanna, M. Tahar Abbes, G. Pluvinage:*

Assessment of Pipe for CO<sub>2</sub> Transportation Using a Constraint Modified CTOD Failure Assessment Diagram .....147

News / Vesti .....152

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