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Programme

12th Annual Conference of Society for Structural Integrity and Life (DIVK12)

November 17-19, 2024
Belgrade, Serbia



Venue:
Faculty of Mechanical Engineering
University of Belgrade
Kraljice Marije 16
Google map: [link](#)



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DIVK12 programme timeline

Time			Sunday 17 th November	Room
Start	-	End	Welcome cocktail (Faculty of Mechanical Engineering)	210/211
17:00	-	21:00		

Time			Monday 18 th November	Room	Chairperson
Start	-	End			
8:45	-	9:00	<i>Opening ceremony</i>	211 (2 nd floor)	Aleksandar Sedmak Vladimir Popović Nenad Zrnić Dragan Bojović
09:00	-	10:30	Keynote lectures		Aleksandar Sedmak Grzegorz Lesiuk
10:30	-	11:00	<i>Coffee break</i>	210 (2 nd floor)	
11:00	-	13:00	Parallel session 1 - 211	211 (2 nd floor)	Dorin Radu
			Parallel session 1 - Library	Library (1 st floor)	Szabolcs Szávai
			Parallel session 1 - 518 (online)	518 (5 th floor)	Aleksa Milovanović
13:00	-	14:00	Lunch	Restaurant (5 th floor)	
14:00	-	15:30	Keynote lectures	211 (2 nd floor)	Aleksandar Sedmak Shengwen Tu
15:30	-	16:00	<i>Coffee break</i>	210 (2 nd floor)	
16:00	-	17:00	POSTER SESSION*	Library (1 st floor)	Simon Sedmak Branislav Đorđević
16:00	-	18:05	Parallel session 2 - 211	211 (2 nd floor)	Dražan Kozak
			Parallel session 2 - 518 (online)	518 (5 th floor)	Isaak Trajković
17:00	-	18:00	Parallel session 2 - Library	Library (1 st floor)	Nenad Gubeljak
19:30	-	23:00	Conference dinner	Restaurant (5 th floor)	

Time			Tuesday 19 th November	Room	Chairperson
Start	-	End			
09:00	-	10:30	Parallel session 3 - Library	Library (1 st floor)	Aleksandar Sedmak
			Parallel session 3 - 514	514 (5 th floor)	Bojan Međo
			Parallel session 3 - 518 (online)	518 (5 th floor)	Isaak Trajković
10:30	-	11:00	<i>Coffee break</i>	Library (1 st floor)	
11:00	-	13:00	Parallel session 4 - Library	Library (1 st floor)	Mohammed Hadj Meliani
			Parallel session 4 - 514	514 (5 th floor)	Zorana Golubović
			Parallel session 4 - 518 (online)	518 (5 th floor)	Ana Petrović Branislav Đorđević
13:00	-	14:00	Lunch	Restaurant (5 th floor)	
14:00	-	15:30	Session 5 - 518 (online)	518 (5 th floor)	Aleksa Milovanović

* Posters will be displayed both days of the conference

Monday: November 18th: Keynote lectures (09:00 – 10:30) – Room 211 (2nd floor)

Room: 211 Time			Monday, November 18 th Chairperson: Aleksandar Sedmak and Grzegorz Lesiuk Keynote lectures
Start	-	End	
09:00	-	09:20	Filippo Berto , <i>Sapienza University of Rome, Italy</i> Fatigue assessment of large structures: open issues and possible solutions
09:20	-	09:40	José A. F. O. Correia , <i>Faculty of Engineering of the University of Porto, Portugal</i> Probabilistic stress-life prediction at variable amplitude loading based on the non-linear accumulation
09:40	-	10:00	Francesco Iacoviello , <i>University of Cassino and Southern Lazio, Department of Civil and Mechanical Engineering, Italy</i> Ductile Cast Irons: porous steels or natural composites?
10:00	-	10:20	Milos Djukic , <i>Faculty of Mechanical Engineering, University of Belgrade, Serbia</i> Hydrogen embrittlement mechanisms synergy in metallic materials: HELP + HEDE model
10 min for discussion			
10:30	-	11:00	<i>Coffee break</i>

Monday: November 18th: Parallel session 1 (11:00 – 13:00) – Room 211 (2nd floor)

Room: 211 Time			Monday, November 18 th Chairperson: Dorin Radu Parallel session 1
Start	-	End	
11:00	-	11:15	Increasing the service life of titanium Ti64 structures with stress concentrators using laser shock peening (<i>Oleg Plekhov, Maria Bartolomei, Alexei Vshivkov, Elena Gachegova, Michail Verejak</i>)
11:15	-	11:30	Review of in-cefa-scale project advances in environmentally assisted fatigue in pressurized water reactor (<i>S. Arrieta, S. Cicero, A. McLennan, R. Cicero, J. Beswick, S. Courtin, Z. Que</i>)
11:30	-	11:45	Low cyclic fatigue curves of steel (<i>Vujadin Aleksić, Srđan Bulatović, Bojana Zečević, Ana Maksimović, Ljubica Milović</i>)
11:45	-	12:00	Numerical analysis of the thick-walled pipe stone diverter fatigue strength (<i>Dražan Kozak, Janko Morosavljević, Ivan Morosavljević, Nenad Gubeljak</i>)
12:00	-	12:15	Experimental study on mechanical and fracture behaviour of a pervious concrete (<i>Daniela Scorza, Camilla Ronchei, Andrea Zanichelli, Sabrina Vantadori</i>)
12:15	-	12:30	Comparing approaches for predicting critical loads in 3D printed graphene-reinforced PLA plates containing notches (<i>S. Arrieta, S. Cicero, M. Sánchez, J. Gil Calderón</i>)
12:30	-	12:45	Ductile fracture response for steels with Lüders plateau (<i>Shengwen Tu, Guangxu Cheng</i>)
12:45	-	13:00	Al/Cu joints with Al _x Cu _y interlayers produced under static and dynamic conditions (<i>Veljko Milašinović, Stefan Dikić, Bojan Gligorijević</i>)
13:00 - 14:00			Lunch (Restaurant of Faculty of Mechanical Engineering, 5th floor)

Monday: November 18th: Parallel session 1 (11:00 – 13:00) – Library (1st floor)

Room: Library Time			Monday, November 18 th Chairperson: Szabolcs Szávai <i>Parallel session 1</i>
Start	-	End	
11:00	-	11:15	Finite element analysis of product tanker deckhouses under severe sea state conditions (<i>Nemanja Ilić, Nikola Momčilović, Milan Kalajdžić</i>)
11:15	-	11:30	Numerical inspection of elliptical corrosion cracks in internal and external surfaces of API 5L X70 steel pipe (<i>Fatima Zahra Khedim, Mohammed Hadj Meliani, Mouna Amara</i>)
11:30	-	11:45	Mathematical modeling of output parameters for a synthetic jet actuator (<i>Emre Kara</i>)
11:45	-	12:00	AI in metallurgy and quantitative image analysis (<i>Gábor Balogh</i>)
12:00	-	12:15	New trends on the use of green corrosion inhibitor to protect oil and gas pipelines (<i>Mohammed Hadj Melliani, Amara, Mouna, Hadjer Didouh, Omar Bouledroua, Fatima Zohra Khedim</i>)
12:15	-	12:30	Smoke wire flow visualization of a fluidic thrust vectoring system based on coanda effect (<i>Emre Kara, Milad Deniz Enderya, Dilek Funda Kurtuluş</i>)
12:30	-	12:45	Ultimate pressure capacity evaluation of a small modular reactor steel containment vessel (<i>Min Jeong Park, Han-Sang Woo and Yoon-Suk Chang</i>)
12:45	-	13:00	Application of AI of agricultural machinery (<i>István Domokos, Sándor Pálinkás</i>)
13:00 - 14:00			Lunch (Restaurant of Faculty of Mechanical Engineering, 5th floor)

Monday: November 18th: Parallel session 1 (11:00 – 13:05) – Room 518 (5th floor)

Online

Room: 518 Time			Monday, November 18 th (Online) Chairperson: Aleksa Milovanović <i>Parallel session 1</i>
Start	-	End	
11:00	-	11:15	Mechanical and metallographic characterization of ggV30 vermicular cast iron material (<i>Ágnes Pálfiné Böröcz, Szabolcs Fischer, Szabolcs Szalai, László Pálfi</i>)
11:15	-	11:30	Identifying Damaged part of Concrete specimen Using Actual Arrival Time Errors of using Weighted Potential Time in Acoustic Emission Tomography (<i>Mikika Furukawa, Katsuya Nakamura, Kenichi Oda, Satoshi Shigemura, Yoshikazu Kobayashi</i>)
11:30	-	11:45	Finite element analysis of ballistic impact on the designed trapezoidal-core sandwich panels (<i>Kevin Fabian Arsaputera, Aditya Rio Prabowo, Seung Jun Baek, Ristiyanto Adiputra, Haris Nubli</i>)
11:45	-	12:00	Toward ultimate bending moment of marine-based structures: Mesh convergence study using the MST-3 box girder (<i>Adika Maja Alif Utama, Ristiyanto Adiputra, Aditya Rio Prabowo, Martin Jurkovič</i>)
12:00	-	12:15	Stress analysis of mooring systems on the OC3-hywind floating platform with variation anchor placement (<i>Alfido Marchandi Faizatama, Ristiyanto Adiputra, Nurman Firdaus, Martin Jurkovič, Aditya Rio Prabowo</i>)
12:15	-	12:25	Results of research of wooden beams with cracks located along the neutral axis: an experimental study (<i>Andrii Ivaniuk, Valentin Aleksievets, Oleksandr Matviuk, Ivan Aleksievets, Sviatoslav Homon, Serhii Litnitskyi, Nataliia Ilchuk, Dmytro Y. Kysliuk</i>)
12:25	-	12:40	Structural behaviors of idealized ship side hull against ballistic loading: Mesh convergence study in FE simulation (<i>Toeri Fathuddin Yusuf, Aditya Rio Prabowo, Seung Jun Baek, Ristiyanto Adiputra</i>)
12:40	-	12:50	Experimental and theoretical studies of the rigidity of gluminum beams under direct and oblique bending (<i>Andrii Pavluk, Svyatoslav Gomon, Petro Gomon, Sviatoslav Homon, Serhii Drobyshynets, Pavlo Sunak, Serhii Uzhehov, Vitalii Protsiuk</i>)
12:50	-	13:05	Modelling of shape memory alloys hysteretic behaviour considering the loading cycle frequency (<i>Oleh Yasniy, Dmytro Tymoshchuk, Iryna Didych, Volodymyr Iasnii, Vitaliy Tymoshchuk</i>)
13:00 - 14:00			Lunch (Restaurant of Faculty of Mechanical Engineering, 5th floor)

Monday: November 18th: Keynote lectures (14:00 – 15:30) – Room 211 (2nd floor)

Room: 211 Time			Monday, November 18 th Chairperson: <i>Keynote lectures</i>
Start	-	End	
14:00	-	14:20	Grzegorz Lesiuk , <i>Faculty of Mechanical Engineering, Wroclaw University of Science and Technology, Poland</i> Strain energy density parameters as a crack driving force in fatigue crack growth rate analysis
14:20	-	14:40	Bojan Međo , <i>University of Belgrade, Faculty of Technology and metallurgy, Serbia</i> Non-standard tensile and bending ring specimens for fracture examination of pipeline materials
14:40	-	15:00	Dorin Radu , <i>Faculty of Civil Engineering, Braşov, Romania</i> Structural integrity assessment – part of a sustainable development
15:00	-	15:20	Dragan Bojović , <i>IMS institute, Serbia</i>
10 min for discussion			
15:30	-	16:00	<i>Coffee break</i>

Monday: November 18th: Parallel session 2 (16:00 – 18:00) – Room 211 (2nd floor)

Room: 211 Time			Monday, November 18 th Chairperson: Dražan Kozak <i>Parallel session 2</i>
Start	-	End	
16:00	-	16:15	Investigation of biofilm adhesion mechanisms on materials used in crude oil processing (<i>Hadjer Didouh, Mohamed Hadj Meliani, Izzeddine Sameut Bouhaik</i>)
16:15	-	16:30	Optimal parameters for strain measurement using distributed fiber-optic sensors (<i>Valerii Matveenko, Grigorii Serovae, Elizaveta Galkina, Vladislav Koniukhov</i>)
16:30	-	16:45	Experimental investigations of tensile properties of Ultra-High Strength Steel S1100QL at room and elevated temperature (<i>Djordje Ivković, Dušan Arsić, Srbslav Aleksandrović, Vukić Lazić, Anđela Ivković</i>)
16:45	-	17:00	Exploring attachment mechanisms of SRB biofilm to X52 carbon steel and effective mitigation through Moringa Oleifera extract (<i>Hadjer Didouh, Mohammed Hadj Melliani, Izzeddine Sameut Bouhaik</i>)
17:00	-	17:15	Numerical analysis of deformation of underground pipelines as a result of ground surface deflection (<i>Andrey Fedorov, Valerii Matveenko</i>)
17:15	-	17:30	Volumetric analysis of creep cavitation using small angle neutron scattering (SANS) (<i>Hedieh Jazaeri, John Bouchard, Michael Hutchings, Yadunandan Das, Ashutosh Bhagurkar, Johannes Nicol</i>)
17:30	-	17:45	Identification of elastic soil constants based on experimental information from a submerged steel pile (<i>Georgii Gusev, Tsvetkov Roman, Epin Valerii</i>)
17:45	-	18:00	Research of the draw gear and screw coupling failures of rail vehicles (<i>Jagoš Stojanović, Jovan Tanasković, Marija Vukšić Popović</i>)

Monday: November 18th: POSTER SESSION* (16:00 – 17:00) – Library (1st floor)

Asymmetrical environmental conditions influence on hygrothermal aging of polymer matrix composite laminates

(Billel Boukert, Mohamed Khodjet Kesba, Amina Benkhedda, El-Abbes Adda Bedia)

Experiences in welding Turkish stream gas pipeline and serbia-bulgaria interconnector

(Dragan Mitic, Mladen Mitic, Davor Gruber, Mladen Mladenovic, Goran Sofronic, Lazar Jeremic)

Comparison and evaluation of structural integrity for type-III composite pressure vessel by numerical simulation and hydrostatic test

(Yeong-Hwan Jeon, Chang-Ho Kim, Dae-Han Cheon, Kwang-Bok Shin)

Influence of temperature and specimen orientation on the impact toughness of microalloyed steel

(Ana Maksimović, Bojana Zečević, Ljubica Milović, Vujadin Aleksić)

Development of methods of testing the resistance of materials in hydrodynamic conditions

(Marko Pavlović, Marina Dojčinović)

Numerical analysis of tensile behavior of Ti-13Nb-13Zr alloy after anodic oxidation

(Dragana Mihajlović, Bojan Medjo, Nenad Gubelj, Ivana Cvijović-Alagić, Veljko Djokić, Marko Rakin)

Structural integrity assessment of the exit convective steam collector superheater

(Aleksandar Jovanović, Zoran Radosavljenić, Branislav Đorđević, Lazar Jeremić, Stefan Dikić, Ana Petrović, Aleksandar Sedmak)

A comparative study on the tensile properties of 3D printed abs filament and resin: effects of aging

(Zorana Golubović, Božica Bojović, Snežana Kirin, Aleksa Milovanović, Ivan Danilov, Aleksandar Sedmak)

Innovative air quality management in asphalt production: implications for material durability and structural integrity

(Ivana Čeković, Snežana Aksentijević, Ljiljana Trumbulović)

The influence of welding parameters on the geometric characteristics of surface weld metal obtained by handheld laser welding

(A. Maslarevic, N. Milosevic, O. Popovic, B. Marincic, D. Milenkovic, R. Prokic Cvetkovic, G. Bakic)

Fracture toughness of A516 steel welded joints

(Nikola Kostić, Ivica Čamagić, Živče Šarkočević, Aleksandar Sedmak, Milivoje Jovanović, Zijah Burzić, Simon Sedmak)

Charpy impact toughness testing of A516 Gr. 60 steel welded joints

(Nikola Kostić, Ivica Čamagić, Aleksandar Sedmak, Živče Šarkočević, Zijah Burzić)

Charpy impact toughness testing of Hadfield cast steel

(Aleksandar Vukosavljević, Nenad Radović, Aleksandar Sedmak)

Predicting tensile mechanical behaviour of NiTi shape memory alloy: a structural-mechanical model approach

(Vittorio Di Cocco)

Metallurgical failure analysis of reformer tubes following an overheating treatment

(Milica Timotijević, Olivera Erić Cekić, Petar Janjatović, Dragan Rajnović)

Impact of biodeterioration on the durability of the historical stone bridge of Mehmed Pasha Sokolović in Višegrad

(Vera Vujović)

Possibility of applying hydrogen energy in the railway sector

(Vera Vujović)

The basic principle of ultrasonic welding of conductors in automotive industry

(Milica Ivić Nikolić, Snežana Jovanović, Aleksandar Nikolić)

Mass optimization of PLA cantilever beams

(Miloš Pjević, Aleksandar Tomović, Mihailo Popović, Aleksandar Obradović)

Numerical and metallographic analysis of a welded joint with microcrack in the root

(Stefan Dikić, Simon Sedmak, Mihajlo Arandjelović, Lazar Jeremić, Branislav Đorđević),

3D scanning of steel pipe ring specimen for structural analysis

(Milan Travica, Aleksandra Mitrovic, Nenad Mitrovic, Aleksandar Petrovic)

* Posters will be displayed both days of the conference

Monday: November 18th: Parallel session 2 (17:00 – 18:00) – Library (1th floor)

Room: Library Time			Monday, November 18 th Chairperson: Nenad Gubeljak Parallel session 2
Start	-	End	
17:00	-	17:15	AI-driven X-ray image analysis for enhanced NDT performance (Szabolcs Szávai, Judit Dudra, Zsombor Zsíros, Péter Margitai, Márton Pataki)
17:15	-	17:30	Application of Machine Learning in the Stability Analysis of Orthotropic Plates (Mirko Dinulović, Aleksandar Bengin, Marta Trninić, Vuk Adžić, Dragi Satmenković)
17:30	-	17:45	Fracture toughness determination by the simulation of ct specimens using VCCT and CZM method (Benedek Kulcsár, Szabolcs Szávai, Zoltán Bézi, Réka Erdei)
17:45	-	18:00	Beremin parameter determination for 15KH2MFAA steel for standard and subsized specimens (Péter Ungár, Zoltán Bézi, Szabolcs Szávai)

Monday: November 18th: Parallel session 2 (16:00 – 18:05) – Room 518 (5th floor)

Online

Room: 518 online Time			Monday, November 18 th (Online) Chairperson: Isaak Trajković Parallel session 2
Start	-	End	
16:00	-	16:15	Study on estimating the settlement force of snow cover load on net fences (Kenichi Oda, Mikika Furukawa, Katsuya Nakamura, Richard Wan, Yoshikazu Kobayashi)
16:15	-	16:25	Design of reinforced plywood panels using deformation methods (Petro Gomon, Serhii Drobyshynets, Mariia Smal, Oksana Dziubynska, Olga Uzhegova, Yolana Golyk, Diana Kaynts, Iryna Kutsyn)
16:25	-	16:40	Horizontal shear force in RC internal beam-column connection at initiation and crack growth from linearly distributed load on a cantilever beam (Albena Doicheva)
16:40	-	16:55	Machine learning-enhanced acoustic emission technique for impact source identification and classification in steel pipes (Oluseyi S. Fatukasi, Chika J. Abolle-Okoyeagu, Anil Prathuru, Oludare Solademi)
16:55	-	17:05	Determination of the main strength and deformation parameters of the complete diagrams of the deformation of glue-laminated wood (Sviatoslav Homon, Petro Gomon, Svyatoslav Gomon, Andrii Pavluk, Bohdan Karavan, Oleksiy Petrenko, Olha Homon, Oleksandr Chapiuk)
17:05	-	17:20	Comparison of the properties of the welded joint of structural steel S235 and S460 before and after incremental sheet forming (Nedeljko Vukojević, Zlatan Ištvanić, Fuad Hadžikadunić, Amna Bajtarević-Jeleč)
17:20	-	17:35	Identifying Defect Location and Analysing the Dynamic Response in Fiber-Reinforced Polymer (FRP) Pipelines Using Acoustic Emission and Machine Learning Techniques (Oludare Amos Solademi, C J Abolle-Okoyeagu, Oluseyi Fatukasi, James Njuguna)
17:35	-	17:50	Variation of shear force in RC internal beam-column connection from concentrated moments on a frame beam (Albena Doicheva)
17:50	-	18:05	Defects – damage in the RC wall of the fermentor (Boris Folić)

19:30	-	23:00	Conference dinner	Restaurant (5 th floor)
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Tuesday: November 19th: Parallel session 3 (09:00 – 10:30) – Library (1st floor)

Room: Library Time			Tuesday, November 19 th Chairperson: Aleksandar Sedmak <i>Parallel session 3</i>
Start	-	End	
09:00	-	09:15	Mechanical integrity and friction stir spot welding performance of aluminum and magnesium sheets for next-generation aerospace and automotive applications (KEYNOTE LECTURE) (<i>Hassanein I. Khalaf, Ahmet Atak, Raheem Al-Sabur, Andrzej Kubit</i>)
09:15	-	09:30	Studies on laser shock peening with different absorbing coatings (<i>Elena Gachegova, Oleg Plekhov</i>)
09:30	-	09:45	Anisotropic ice adhesion on fish scale (<i>Feng Wang, Senbo Xiao, Zhiliang Zhang, Jianying He</i>)
09:45	-	10:00	An extended sandwich model for structural integrity analysis of adhesive bondings (<i>Thomas Steffen Methfessel, Wilfried Becker</i>)
10:00	-	10:15	New concept for the structural integrity calculations of large-scale pressure systems (<i>Tamás Fekete</i>)
10:15	-	10:30	Sensitivity analysis using digital twins for tensile tests (<i>Levente Tatár, Dániel Antók, Tamás Fekete, Péter Bereczki</i>)
10:30	-	11:00	<i>Coffee break</i>

Tuesday: November 19th: Parallel session 3 (09:00 – 10:30) – 514 (5th floor)

Room: 514 Time			Tuesday, November 19 th Chairperson: Bojan Međo <i>Parallel session 3</i>
Start	-	End	
09:00	-	09:15	Measurement of technological and residual strains using fiber-optic sensors in 3D-printed samples (<i>Elizaveta Galkina, Grigorii Serovaev, Vladislav Koniukhov</i>)
09:15	-	09:30	Impact properties of FDM-grade PLA material relative to infill density (<i>Aleksa Milovanović, Milovan Paunić, Ivana Filipović, Sergiu-Valentin Galațanu, Liviu Marșavina, Miloš Milošević, Aleksandar Sedmak</i>)
09:30	-	09:45	Influence of variation of raster angle and number of wall layers on elongation of 3D printed parts (<i>Strahinja Djurović, Dragan Lazarević, Živče Šarkoćević, Milan Mišić, Bojan Stojčetić</i>)
09:45	-	10:00	Numerical modeling of laser shock impact based on pdv data (<i>Mariia. Bartolomei, Denis Lozhkin, Aleksey Vshivkov, Elena Gachegova, Oleg Plekhov</i>)
10:00	-	10:15	Implementation of Lagrange interpolation for optimization of computational resource used in AE tomography (<i>Katsuya Nakamura, Mikika Furukawa, Kenichi Oda, Satoshi Shigemura, Yoshikazu Kobayashi</i>)
10:15	-	10:30	Thermo-mechanical resistance of additively manufactured carbon fiber-reinforced PLA (<i>Miloš Vorkapić, Marija Baltić, Bojana Fidanovski, Danica Bajić</i>)
10:30	-	11:00	<i>Coffee break</i>

Tuesday: November 19th: Parallel session 3 (09:00 – 10:30) – room 518 (5th floor)

Online

Room: 518 online Time			Tuesday, November 19 th Chairperson: Isaak Trajković <i>Parallel session 3</i>
Start	-	End	
09:00	-	09:15	Pseudo three-dimensional acoustic emission tomography considering change of ray-path in thickness direction (<i>Yoshikazu Kobayashi, Katsuya Nakamura, Mikika Furukawa, Kenichi Oda</i>)
09:15	-	09:30	Toward residual velocity of ballistic impact on plate of ship's containment bunker: mesh convergence in FE simulation (<i>Gusti Kid Faiq Syah, Aditya Rio Prabowo, Jung Min Sohn, Hermes Carvalho</i>)

09:30	-	09:45	Experimental study on the influence of natural fiber fabrics in concrete <i>(Ivelina Ivanova, Cheikhna Diagana, Jules Assih, Isabelle Titeux-Peth)</i>
09:45	-	10:00	Increasing the reliability of welded joints in trucks by modelling <i>(Irina Makarova, Eduard Mukhametdinov, Larisa Gabsalikhova, Alexey Boyko)</i>
10:00	-	10:15	Forecasting Behaviors of Tubular Designs in Marine Transportation Structures: Effect of Mesh Variations in Nonlinear Finite Element Approach <i>(Muhammad Daffa Alifianto, Aditya Rio Prabowo, Hermes Carvalho, Bo Cao, Ristyanto Adiputra)</i>
10:15	-	10:30	Managing the operational reliability of intelligent trucks <i>(Irina Makarova, Eduard Mukhametdinov, Larisa Gabsalikhova, Vadim Mavrin)</i>
10:30	-	11:00	Coffee break

Tuesday: November 19th: Parallel session 4 (11:00 – 12:45) – Library (1st floor)

Room: Library Time			Tuesday, November 19 th Chairperson: Mohammed Hadj Meliani Parallel session 4
Start	-	End	
11:00	-	11:15	Numerical analysis of natural frequencies of shallow shells under temperature load <i>(Alexander Kamenskikh, Sergey Lekomtsev, Valerii Matveenko)</i>
11:15	-	11:30	Dynamic analysis in geotechnics. Influence of loading level and boundary conditions on obtained results <i>(Zeljko Zugic, Boris Folic)</i>
11:30	-	11:45	A new approach to fire resistance design of boiler room building structure <i>(Ivan Aranđelović, Radenko Rajić, Nikola Tanasić)</i>
11:45	-	12:00	Remaining life assessment of 1Cr-0.5Mo boiler steel by replica method <i>(Srđan Bulatović, Milica Tasić, Zorica Kovačević)</i>
12:00	-	12:15	Reliability methods in earthquake engineering <i>(Zeljko Zugic, Boris Folic)</i>
12:15	-	12:30	Structural integrity and electrochemical properties of graphene/PVB functional coating <i>(Milica Košević, Marija Baltić, Bojana Fidanovski, Miloš Vorkapić, Danica Bajić)</i>
12:30	-	12:45	Additional tool for pull out test: polymer samples with brass nuts <i>(Miloš Vorkapić, Toni Ivanov, Miloš Vasić, Marija Baltić, Aleksandar Simonović)</i>
13:00 - 14:00			Lunch (Restaurant of Faculty of Mechanical Engineering, 5th floor)

Tuesday: November 19th: Parallel session 4 (11:00 – 13:00) – 514 (5th floor)

Room: 514 Time			Tuesday, November 19 th Chairperson: Zorana Golubović Parallel session 4
Start	-	End	
11:00	-	11:15	Determination of the optimal welding sequence of AA6060-T4 and AA5083-h116 for butt joint <i>(Marko Mumović, Nikola Šibalić)</i>
11:15	-	11:30	Windage losses of the high-speed cylindrical gear drives <i>(Aleksandar Dimić, Nenad Kolarević, Miloš Stanković, Dimitrije Mihajlović)</i>
11:30	-	11:45	The effect of build orientations and raster angles on impact toughness of PET-G FDM material <i>(Milovan Paunić, Aleksandar Sedmak, Aleksa Milovanovic, Milan Janković, Sergiu-Valentin Galațanu, Horia Dascau, Igor Balać)</i>
11:45	-	12:00	Ball bearing life assessment depending on lubricant contamination level <i>(Tatjana Lazović, Pavle Ljubojević, Milan Stojanović)</i>
12:00	-	12:15	Accidental load on železj bridge and analysis of soil caisson bridge interaction <i>(Boris Folić, Miloš Čokić)</i>
12:15	-	12:30	Residual fatigue life estimation of the high-pressure pipeline in the thermal power plant <i>(Mirko Maksimović, Ivana Vasović Maksimović, Dragi Stamenković)</i>
12:30	-	12:45	Železj's bridge and critical load due to building the long arch <i>(Boris Folić, Željko Žugić, Miloš Čokić)</i>
12:45	-	13:00	Brazing of granulated golden balls <i>(Zoran Karastojković, Radiša Perić)</i>
13:00 - 14:00			Lunch (Restaurant of Faculty of Mechanical Engineering, 5th floor)

Tuesday: November 19th: Parallel session 4 (11:00 – 13:00) – 518 (5th floor)

Online

Room: 518 online Time			Tuesday, November 19 th Chairperson: Ana Petrović and Branislav Đorđević Parallel session 4
Start	-	End	
11:00	-	11:15	Single-leg bending (SLB) analysis of a structural adhesive as a function of the adhesive thickness (<i>Armando F.L. Macedo, Raul D.S.G. Campilho, André L. Faria</i>)
11:15	-	11:30	Interaction of a functionally gradient ceramic coating with fixed and unfixed abrasive (<i>Liubomyr Ropyak, Ivan Shatskyi, Mykola Makoviichuk, Igor Lazariev</i>)
11:30	-	11:45	Random vibration driven prediction of residual fatigue life and strength of themoplastic coupons: an experimental and numerical approach (<i>Niki Tsivouraki, Konstantinos Tserpes, Spilios Fassois</i>)
11:45	-	12:00	Cohesive zone of tubular adhesive joints subjected to impact stresses (<i>Pedro D.A. da Silva, Raul D.S.G. Campilho, André L. Faria, Miguel J.R. Queirós, João P.A. Valente</i>)
12:00	-	12:15	Equilibrium of an elastic plate with parallel contact cracks under antisymmetric bending (<i>Taras Dalyak, Ivan Shatskyi, Igor Shopa</i>)
12:15	-	12:30	Review of current welding technology and literature review of weld repair without post-weld heat treatment for X10CrMoVNb9-1 steel in dissimilar metal welds (<i>Aleksandra Krtevska, Filip Zdraveski, Marjan Gavriloski, Elisaveta Doncheva, Martin Petreski</i>)
12:30	-	12:45	Integrity increasing of HSLA welded joints applying post weld treatment (<i>Illés Sas, János Lukács</i>)
12:45	-	13:00	Prediction of structural elements lifetime of titanium alloy by neural network (<i>Oleh Yasniy, Iryna Didych, Dmytro Tymoshchuk, Roman Zoloty, Pavlo Maruschak</i>)
13:00 - 14:00			Lunch (Restaurant of Faculty of Mechanical Engineering, 5 th floor)

Tuesday: November 19th: Session 5 (14:00 – 15:30) – 518 (5th floor)

Online

Room: 518 online Time			Tuesday, November 19 th Chairperson: Aleksa Milovanović Session 5
Start	-	End	
14:00	-	14:15	Influence of supporting conditions on longitudinal fracture in functionally graded frame under periodic dynamic loading (<i>Victor Rizov</i>)
14:15	-	14:30	Study of low-cycle fatigue of specimens from fine-grained and coarse-grained concrete (<i>Yuriy Panchuk, Volodymyr Dovbenko, Ivan Dobryanskyi, Lyubov Dobryanska, Nataliia Ilchuk, Igor Melnyk, Andriy Pelekh, Oleksandr Kononchuk</i>)
14:30	-	14:40	Stress-deformed state of compressed-bent and stretched-bent wooden elements (<i>Denys Mykhailovskiy, Petro Gomon, Ihor Mudryy, Olena Pakholiuk, Viktor Karbovskiy, Pavlo Shevchuk, Oleh Hlushenko, Andrii Oksentiuk</i>)
14:40	-	14:55	Analysis of symmetrically delaminated beam-like structural component subjected to harmonic load (<i>Victor Rizov</i>)
14:55	-	15:05	Method of determining the minimum anchorage length of a reinforcement in concrete: an experimental study (<i>Oleksandr Chapiuk, Oleh Kratiuk, Iryna Zadorozhnikova, Inna Boyarska, Vadym Rud, Maksym Boyarskyi, Ihor Mudryy, Andriy Pelekh</i>)
15:05	-	15:15	Work of steel fiber concrete beams under the action of repeated loads: an experimental study (<i>Serhii Drobyshtynets, Pavlo Sunak, Igor Melnyk, Andriy Pelekh, Vasyl Rizak, Oksana Mykaylo, Mykhailo Nesukh, Oleh Kukhniuk</i>)
15:15	-	15:30	Sensitivity to hydrogenation of steel used in the bend of a TPP steam pipeline and after its restorative heat treatment (<i>Halyna Krechkovska, Ivan Tsybailo, Oleksandra Student</i>)

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A word of chairman of DIVK12 conference

The twelfth edition of DIVK event, organized between 17th and 19th of November, 2024 at the Faculty of Mechanical Engineering of the University of Belgrade, Serbia, gathered more than 100 participants from all over the worlds, with more than 25 nationalities demonstrating the vitality of this new event, both in person and on-line.

The chairman of DIVK12 conference sincerely thanks all contributing authors for playing a significant role in the overall success of this event, with their exciting presentations. The members of the *International Scientific Committee* are also fully acknowledged for their support of the DIVK12 event. Special thanks to the Keynote Speakers for their dedication and knowledge and energy brought to this event. The chairman of DIVK12 would also like to express his gratitude to the sponsors for their time and support without which the conference would be impossible to organize.

Finally, chairman sincerely thanks the tireless efforts of Organizing Committee members, as well as Faculty of Mechanical Engineering, Innovation Center of Faculty of Mechanical Engineering and IMS institute staff.

Aleksandar Sedmak
Professor emeritus