## **Table of Contents**

Preface, Organizing Committee, Reviewers and Sponsors	
3D Simulation of Stress-Strain State of Plasma Arc Surfacing by CAD/CAE Software	
Sysweld R. Dimitrova, A. Nedelchev and A. Nikolov	1
Methodology for Reparation of Damaged Sleeves and Welded Shield Sections of Guide Vanes at Hydropower Plant DJERDAP 1 M. Arsić, B. Vistać, S.M. Bošnjak, V. Grabulov and Z. Savić	8
Analysis of Current State and Integrity Evaluation for the Supply Tank of Generation Unit 6 of Thermal Power Plant Nikola Tesla "A", Obrenovac	
M. Arsić, S.M. Bošnjak, V. Grabulov, A. Veljović and Z. Savić  Research on Argon Protection when Using WIG Welding	14
D. Tunea and M. Burcă	20
Ways of Numerical Prediction of Austenitic Grain Size in Heat-Affected Zone of Welds J. Moravec, J. Bradáč and I. Nováková	25
Application of Numerical Simulations at Welding Multilayer Welds from the Material X22CrMoV12-2	2.1
J. Moravec and M. Slováček  Full and Lind Proposition for Magnetic Poles Coincide and Eiller Metaniel	31
Enhanced Joint Properties by Magnetic Pulse Crimping with Filler Material H. Cramer, M. Mueller and L. Appel	37
Alternate Design Solutions for Reduced Stress Concentration Factor (SCF) T Joints of Circular Hollow Structures	4.4
G. Dima, T. Machedon-Pisu and I. Balcu	44
Characterization of Plasma Cut Surfaces with Water Bed Welding Metallic Materials T. Machedon-Pisu, M.A. Luca and E. Machedon Pisu	50
Weldability of Magnesium and Aluminum Alloys Using Nd-Yag Laser V. Geamăn, I. Radomir and M.A. Pop	56
Reconditioning by Welding of Rims Manufactured from Nonferrous Alloys N. Bularda and T. Heput	61
Tenacity Evaluation of the Deposited Metals by Welding, Using 3Si-2 Wire of ø1.2 mm on S355J4 Steel	
R. Pascu, I. Duma and H. Dascău	67
Composite Rods for Brazing	
E.F. Binchiciu, T. Fleer and I. Voiculescu	72
Nanostructured Materials for Cladding by Welding T.D. Tihanov, C. Florea, E.F. Binchiciu and V. Geantă	78
Development of a New Generation of Welding Simulators for Education and Training	0.2
E. Engh Estimating the Reliability for Asphalt Milling Machines Teeth Manufactured by Claddings	83
Processes	0.0
R.F. Iovanas, D.M. Iovanas and A.E. Dumitrascu	88
The Influence of Vibration on the Microstructure of the Wear-Resistant Layer Made with the Welding Wire MSG-6-GZ-C-60G M.A. Luca and T. Machedon-Pisu	94
Research Regarding the Manufacture of Pipelines through Automatic Tandem MAG	
Welding on Generators C. Toma, R. Iovanas and D.M. Iovanas	100
The Effect of Silicon Content into the Aluminum Matrix on the Microstructure and	
Mechanical Properties of TIG/FSW Welds D.A. Gheorghiu, S.L. Toma, C. Bejinariu and M. Bernevig	106
Analyzing Properties of New Hard Coating Technologies for Increasing the Wear	
Resistance Z. Milutinovic, M. Ristic, I. Vasovic, M. Prokolab and B. Gligorijevic	112
Corrective Solutions for the Shaft with Flange Used for Fixing the Blade on a 5 kW Wind	
Turbine to Withstand Extreme Weather Conditions R. Bădărău, T. Miloş, I. Bordeaşu and A. Bej	118

Numerical Modeling and Initial Fatigue Life Estimations of Welded Structural Components I. Vasovic, M. Ristic, S. Ristic, M. Maksimovic and D. Stamenkovic	124
<b>Reconditioning by Metal Deposition Technology - Temperature Finite Element Modeling</b> D.F. Nitoi, G.M. Dumitru, B. Dumitru, A. Mihailescu and S.C. Cismas	130
Lap Joint Laser Welding of Austenitic Stainless Steel Thin Sheets E.M. Stanciu, A. Pascu and I.C. Roată	134
Cold Metal Transfer Welding of Aluminum 5456 Thin Sheets I.C. Roată, A. Pascu, E.M. Stanciu and M.A. Pop	140
Study Regarding the Cavitation Erosion Behaviour and Residual Stresses of Impact Resistant Hardfacing Materials E.R. Secosan, R.C. Ciubotariu, V. Cojocaru, D. Frunzaverde and C.V. Câmpian	146
Refining the Welding Technique for Nuclear Fuel Elements at INR Pitesti C. Truţă, V. Deaconu and C. Gondac	152
The Increasing of Corrosion Resistance of Low Alloy Carbon Steels Used in Petroleum Industry through Coating with Alloys Based on Fe-Ni-Cr by Thermal Spray S.L. Toma, M. Peneoasu, C. Bejinariu, D.A. Gheorghiu, L. Eva and B. Toma	158
Influence of Slag-Flux Mixture on the Properties of Welded Joints J. Dobránszky, L. Németh and C. Biczó	164
Analysis of the Quality of the Weld Metal Obtained with Alloyed Flux-Cored Wire N. Bajic, M. Rakin, D. Veljić, M. Mrdak, S. Stojadinovic and J. Pekez	170
The Effect of Water Pressure Variation on Cut Surfaces Quality during Abrasive Waterjet Cutting of Austenitic Steels I.A. Perianu, I. Mitelea and V.A. Şerban	176
Pulsed LASER-(Micro) TIG Welding of Automotive Zn Coated Advanced High Strength Steels Thin Sheets in Overlap Configuration A.V. Bîrdeanu	182
Evaluation of Abrasive Wear Resistance of Fe-Cr-C Hardfacing Alloys Deposited on Active Components of the Agricultural Components R.M. Dobra, N. Farbas and R. Pascu	188
Repair Weld Simulation of Austenitic Steel Pipe Z. Bézi and S. Szávai	194
Joining of C/SiC Materials by Spark Plasma Sintering V. Tsakiris, W. Kappel, D. Talpeanu, F. Albu, D. Patroi and V. Marinescu	200
Determination of Some Mechanical Properties of Welded Reinforcing Steel with Self-Shielded Wires by Vibration Tests	206
L. Bereteu, M. Burcă, R. Moisa, D. Simoiu, G. Drăgănescu, Ş. Pavel and C.S. Nes <b>Defects Detection on the Welded Thin Steel Plates Using Vibroacustic Method</b> L. Bereteu, M. Vodă, T. Medgyesi, G. Drăgănescu and D. Simoiu	206 212
New Ecological Technique for Soldering of Metallic Materials R. Cojocaru, L.N. Boilă, V. Verbițchi and C. Ciucă	218
Research on the Influence of Artificial Ageing on the Tensile Properties of Plastic Coated Composites with Fabric Inserts, in the Presence of Simulated Welding Imperfections L. Kun and A.C. Murariu	224