Table of Contents

Chapter 1: Friction Stir Welding Technologies

Innovative Method for Overlap Friction Stir Welding (FSW) of 1 mm Thick Sheets of 5754 Aluminium Alloy, on Tilted Jig	
V. Verbiţchi, M. Vlascici, R. Cojocaru, L.N. Boilă, I. Duma and I.A. Perianu	3
Testing of an Innovative Method for Overlap Friction Stir Welding (FSW) of 1 mm Thick Sheets of 5754 Aluminium Alloy, on Tilted Jig V. Verbitchi, I. Duma and I.A. Perianu	11
Friction Stir Welding in Inert Gas Environment (FSW-IG) of AZ31B Magnesium Alloy R. Cojocaru, L.N. Boilă and H.F. Daşcău	21
Considerations Regarding Friction Stir Welding of Stainless Steels R. Cojocaru, L.N. Boilă, H.F. Dașcău and V. Verbiţchi	31
Studies Regarding FCAW Welding of Dissimilar Joints between Duplex Stainless Steel and Naval Carbon Steel	42
M. Puchianu, H.F. Daşcău and G. Solomon Everture Characteristics of A 721B and Cu 90 Tangila Test Specimens Joined by ESW and	43
Fracture Characteristics of AZ31B and Cu 99 Tensile Test Specimens Joined by FSW and FSW-IG Processes	
E.F. Binchiciu, C. Codrean, L.N. Boilă, M. Nicolaescu and R.I. Iacobici	55
Comparison of Two Numerical Models for Friction Stir Welding I. Draganov and N. Ferdinandov	67
Chapter 2: Welding, Soldering and Adhesive Joints	
Some Helpful Features of the Tig Welding Process Using High Frequency Pulsed Arc V.I. Safta, G.V. Mnerie, V. Nagy and D. Mnerie	79
Effect of Pre-Heating and Post-Weld Local Heat Treatment on the Microstructure and Mechanical Properties of Low-Cost β-Titanium Alloy Welding Joints, Obtained by EBW S.V. Akhonin, V.Y. Belous and R.V. Selin	87
Structure and Mechanical Properties of High Strength Steel 960QL Weldments N. Ferdinandov, D. Gospodinov, M. Ilieva and R. Radev	93
Development of Self-Shielded Flux-Cored Wires for Arc Welding of Low-Alloy Steels V. Golovko, O. Kotelchuk, S. Naumeiko and A.A. Golyakevich	103
On some Possibilities for Optimizing the Wire Electrical Discharge Machining (WEDM) Processing of Welded Joints Applied to Stainless Steel W. Nori, M. A. St. C. V. Macrie, A. Nori and D. Macrie	115
V. Nani, M.A. îu, G.V. Mnerie, A. Nani and D. Mnerie Study on Soldering Alloy Structure Influence on Whiskers Germination and Grow Process	115
in Joints Executed Using Tin Base Soldering Alloys C. Codrean, D. Buzdugan, B. Radu and G. Melcioiu	123
Properties of Hybrid Aluminium-Steel Joints Made by Resistance Spot Welding S. Alden Abd Al Al, M. Gáspár and Á. Meilinger	131
The Influence of Drying Time on a Glass - Adhesive - Steel Bonding D. Mădroane, I. Duma and S. Galaanu	139
Critical Analysis of some Practices of Joining Stainless Steel Pipes Used in the Food Industry from the Perspective of Hygienic Welding Principles V. Nagy, G.V. Mnerie, V.I. Safta and D. Mnerie	145
Chapter 3: Electrochemical Engineering	
Synthesis and Characterization of Chitosan/κ-Carrageenan/Mesoporous Phosphotungstic Acid (mPTA) Electrolyte Membranes for Direct Methanol Fuel Cell (DMFC) Applications L. Atmaia, D.R. Rachmawati and E.A. Hartanti	153

Synthesis and Characterization of BiOI Films for Photo-Electrochemical Cell via Simple	
Heating Process of BiI ₃ A.A. Putri, M.M. Rahman, A.A. Abuelwafa, S. Kato, N. Kishi and T. Soga	159
Synthesis and Characterization of Chitosan/Alginate/Mesoporous Phosphotungstic Acid Electrolyte Membranes for Direct Methanol Fuel Cell Applications L. Atmaja, E.A. Hartanti and D.R. Rachmawati	167
Physicochemical Studies of Chitosan Blended Sulfonated Poly Ether-Ether Ketone and Graphene Oxide as Filler for Direct Methanol Fuel Cell N. Nurakhirawati, A. Priyangga, M. Santoso, L. Atmaja, N. Widiastuti and J. Jaafar	173
Thermodynamic and Adsorption Properties of Flavonoid Rutin from Cassava (Manihot esculenta) Leaves as a Corrosion Inhibitor on the Mild Steel in Sulfuric Acid Solution D.R. Gusti, E. Emriadi and M. Efdi	183