

Table of Contents

Preface, Committees, Sponsors

The Influence of Hybrid Material Parameters in Socked-pin Connection on the Value of Opening Force

T. Sadowski, P. Golewski and V. Radoiu 1

Ti-Al Membranes for Microfiltration

S. Şuta, G. Thalmaier, N. Sechel, I. Vida-Simiti and V. Petrescu 8

Thermal Analysis to Optimize and Control the Cast Iron Solidification Process

I. Riposan, I. Stefan, C. Firican and S. Stan 14

Study and Optimization of Metal Based Sintered Materials for Automotive Brake Friction Production

I. Peter and M. Rosso 20

Influence of the Graphitisation Degree of Carbon Nano Fibres Serving as Support Material for Noble Metal Electro Catalysts on the Performance of PEM Fuel Cells

U. Rost, R. Muntean, P. Podleschny, G. Marginean, M. Brodmann and V.A. Şerban 27

Characterization of Fusion Lines Obtained with Laser Welding on Ductile Iron Plates

I.C. Mon, M.H. Tielean, E. Cicala, M. Pilloz, I. Tomashchuk and P. Sallamand 33

Validation of Novel Wobbe Index Sensor for Biogas Cogeneration

C. Slater, G. Farine, T. Maeder and P. Ryser 43

Development of Parametric Kelvin Structures will Closed Cells

D.A. Şerban, E. Linul, S. Sărăndan and L. Marşavina 49

Peridynamical Modelling of Nanoindentation in Ceramic Composites

T. Sadowski and B. Pankowski 55

Effect of Cu and Gd on Structural and Magnetic Properties of Fe-Co-B-Si-Nb Metallic Glasses

P. Ramasamy, M. Stoica, M. Calin and J. Eckert 60

Microstructural Transformation during Dissimilar Friction Stir Welding (FSW) of Aluminum-Cooper Alloys

B. Radu, I. Hulkă, R. Cojocaru and C. Ciucă 65

A Comparison between Hardness, Corrosion and Wear Performance of APS Sprayed WC-CoMo and WC-Co Coatings

N. Kazamer, D.T. Pascal, G. Marginean, V.A. Şerban, C. Codrean and I.D. Utu 71

A Comparison of Flame Coating and Laser Cladding Using Ni Based Powders

A. Pascu, I. Hulkă, M.H. Tielean, C. Croitoru, E.M. Stanciu and I.C. Roată 77

A Model of Optimization and Control the Thermite Kit for Aluminothermic Welding

M. Branzei, M.O. Cojocaru, T.A. Coman and O. Vascan 83

Advanced Materials with Natural Fibred Reinforced Aluminiu Composite for Automotive Brake Disc

A.L. Crăciun and C. Pinca-Bretorean 91

A Study of Ti-Ta Library and Microstructure Manufactured by Magnetron Sputtering

S. Barbos, A. Novac, R. Sprincenatu, M. Condel, I. Mitelea and C. Craciunescu 97

Analytical Calculation of Resistance to Burst of Single Jersey Underlying Two Synthetic Materials Used in Furniture Industry

B. Lengyel, A. Cernescu and C.S. Nes 102

Alumide Sinterization Aspects According to Layer Orientation, in Rapid Prototyping Process

D.I. Stoia, M. Nicoară, A. Răduă and C. Locovei 106

Consolidation Features of Aluminum-Alumina Compositions by Powder Metallurgy Methods

M.O. Cojocaru, M.R. Condruz and F. Tudose 110

Analytic Study Regarding Yarn Geometry of Two Synthetic Materials Used in Furniture and Automotive Industry

B. Lengyel, N. Faur, C.S. Nes and A. Cernescu 116

A Study of Mode III Fracture Toughness in Young and Mature Concrete with Fly Ash Additive

G.L. Golewski and T. Sadowski 120

Cranioplasty Based on Modern Methods for Personalized Design and Manufacturing M. Tarcolea, C. Doicin, A. Semenescu, M.E. Ulmeanu, M.C. Cotrut and I.M. Mates	126
Current Technologies and Materials for Dental Fixed Prosthetic Restorations L. Ardelean, L. Reclaru, C. Bortun and L.C. Rusu	132
Calibration of a Shear Specimen D.I. Maxim, L. Marşavina and M.C. Dudescu	138
Influence of the Addition of a Reducing Mixture Slag and Duration of Treatment on the Desulphurisation and Deoxidation Efficiency V. Putan, A. Putan and E. Ardelean	144
Calorimetric Studies of the Martensitic Transformation in Ni-Mn-Ga Ferromagnetic Shape Memory Alloys A. Novac, S. Barbos, R. Sprincenatu, M. Condel, I. Mitelea and C. Craciunescu	149
Optimisation of the Electrodeposition Parameters for Platinum Nanoparticles on Carbon Nanofibers Support R. Muntean, U. Rost, G. Marginean and N. Vaszilcsin	153
Comparative Study of Mechanical Properties of Aluminium Wires from New and Used ACSR Conductors D. Achiriloaiei, L. Kun, C.S. Nes and I. Dumitru	159
Optimization of Process Parameters for the Manufacturing of High Temperature Vacuum Brazed WC-NiCrBSi Coatings D.T. Pascal, V.A. Şerban and G. Marginean	164
Heat Transfer Process in Jet Turbine Blade with Functionally Graded Thermal Barrier Coating T. Sadowski and D. Pietras	170
Optimization of Synthetic Slag Additions Used in Continuous Casting of Steel M. Ardelean, A. Lăscuoni, E. Ardelean and A. Socalici	176
Preliminary Tests for Precious Metals Recovery from Sideritic Waste L. Cândă, E. Ardelean, M. Ardelean and L. Strugariu	182
Macroscopic Evaluation of Fracture Processes in Fly Ash Concrete G.L. Golewski and T. Sadowski	188
Mechanical Characteristics Alteration of a Steel Used in Water Turbine Blades R. Coman, R. Ciocoiu, A. Dinita and I. Ciucă	194
Synthesis of SnO₂ by Sol-Gel Method C. Nuescu Duduman, M.I. Barrena Pérez, J.M. Gómez de Salazar, I. Carcea, D.L. Chicet and I. Palamarciuc	200
Research on Composite Materials Used for Brake Shoes Manufacture E. Popa, L. Pascu, A. Socalici and M. Ardelean	207
Modelling of Resistance Braze Process Using Factorial Design D. Buzdugan, C. Codrean and V.A. Şerban	212
Researches Regarding the Influence of Vacuum Parameters on the Efficiency of Gas Removal from the Liquid Steel E. Ardelean, T. Hepu, M. Vătăescu and E. Crian	218
Numerical and Experimental Analysis of Foreign Objects Impact into the Surface with TBC Coating T. Sadowski and P. Golewski	224
Sliding Wear Behavior of Remelted Al₂O₃-TiO₂ Plasma Sprayed Coatings on Titanium I.D. Utu, G. Marginean, I. Hulka and V.A. Şerban	231
Numerical and Experimental Studies of Fluid Flow and Heat Transfer in a Model Experiment for Hydrothermal Growth D. Ursu, R. Negrila, A. Popescu, I. Grozescu and D. Vizman	237
Studies Regarding the Use of Molding Mixtures Based on Chromite-Sand to the Casting of the Steel Parts A. Josan	243
Numerical Model of Thermal Field Developed in Fe₆₇Cr₄Mo₄Ga₄P₁₂B₅C₄ Bulk Amorphous Alloy Processing B. Radu, D. Buzdugan, C. Codrean, V.A. Şerban and G. Vian	249
The Influence of Cooling Rate and Equivalent Carbon on the Chill Tendency and Cooling Curves Parameters in Uninoculated and Inoculated Grey Cast Iron E. Panciu, D.E. Anca and M. Chisamera	255

Numerical Modeling of Thermal Field Distribution during Friction Stir Welding (FSW) of Dissimilar Materials	
B. Radu, C. Codrean, R. Cojocaru and C. Ciucă	261
Designing an Injection Mould Using Advance CAD-CAM Programs	
A. Adam, C. Cosma, D. Sosdean and A. Filip	267
Numerical Simulation of Friction Stir Welding (FSW) Process Based on ABAQUS Environment	
M. Iordache, C. Bădulescu, E. Nițu and D. Iacomi	272
Superelastic Behavior in NiTi Shape Memory Alloy Wires and Ribbons	
R. Sprincenatu, M. Condel, S. Barbos, A. Novac, I. Mitelea and C. Craciunescu	278
The Deformation Process of Thin-Walled Box Beams Joined by Rivets under Three-Point Bending	
T. Sadowski, M. Nowicki, D. Pietras and P. Golewski	283
Wear Resistance of Laser Cladded NiCrFeSiB Self-Fluxing Composite Coatings	
I. Hulkă, I.D. Uțu, V.A. Șerban, A. Pascu and I.C. Roată	290