

Table of Contents

Preface

Analytical Modeling and Analysis of the Matter Flow during Friction Stir Welding Z. Harchouche, M. Zemri and A. Lousdad	1
Microstructural Aspects of the Zircaloy-4/SS-304L Interface Obtained by Diffusion Bonding Technique A. Lebaili, M. Taouinet and S. Lebaili	17
Constitutive Modelling of an Industrial Rolled Sheet for a DIN 1623 St14 (DC04) Steel B. Regaiguia, O. Chahaoui, S. Boulahrouz, N. Brinis and M.L. Fares	31
Optimization of TIG Welding Process Parameters for X70-304L Dissimilar Joint Using Taguchi Method M.F. Benlamnour, M. Hadji, R. Badji, N. Bensaid, T. Saadi, Y.L. dit Laksir and S. Senouci	51
Influence of Cellulosic Fluxes on the Chemical Composition, Microstructure, Inclusions and Micro-Hardness of SMAW Multi-Pass Welds of X42 Steel F. Khamouli, M. Zidani, K. Digheche, A. Saoudi and L. Atoui	62
Prediction of the Ultimate Tensile Strength in API X70 Line Pipe Steel Using an Artificial Neural Network Model A. Saoudi, D. Lerari, F. Khamouli, L. Atoui and K. Bachari	71
Electronic and Elastic Properties of TIX (X = N, P, As and Sb) in Zinc-Blende Structure A. El Hassasna and A. Bechiri	82
Anisotropic Behavior of Different Three-Dimensional Structures Materials under Thermal Stress Effect S. Bouzid, N. HEBBIR and Y. Harnane	95
Modelisation and Simulation of Cgs.op and Cgd.op Capacities of GaAs MESFETs OPFET I. Hamma, H. Farh, T. Ziar, Y. Said and A. Cherifa	105
Structural and Anisotropic Elastic Properties of Hexagonal YMnO₃ in Low Symmetry Determined by First-Principles Calculations A. Chadli, M. Halit, B. Lagoun, F. Mohamedi, S. Maabed, A. Cheriet, E. Hlil and H. Farh	120
Beryllium Effect on the Energy Band Gaps and the Electronic Charge Density of the Alloy (Be, Cd) Se H. Saheb and A. Bechiri	131
Applying of Heat Treatments to Improve the Properties of Welded Pipeline Steel K. Digheche, Z. Boumerzoug, F. Khamouli, A. Saoudi and K. Saadi	143
Chemical Characterization of the Crystalline Phases in Agglomerated Fluxes and Slags for Shielded Metal Arc Welding (SMAW) F. Khamouli, M. Zidani, K. Digheche, A. Saoudi, H. Moussi and L. Atoui	151
TB-mBJ Calculations of Structural and Optoelectronic Properties of the Rhombohedral Phase of Bismuth Sodium Titanate (Bi_{0.5}Na_{0.5})TiO₃ W. Chatta, B. Lagoun, H. Lidjici, A. Chadli, A. Cheriet, H. Farh, H. Khemakhem and K. Salah	165
First-Principles Study of Structural, Electronic, Optical and Elastic Properties of Cadmium Based Fluoro-Perovskite MCdF₃ (M= Rb, Tl) A. Cheriet, B. Lagoun, M. Halit, M. Zaabat, C. Abdelhakim and L. Hamza	173
Modeling and Simulation of Phase Change Materials: Application to Building with Low Energy Consumption A. SAOUANE, A. Chaker, T. Messai and H. Farh	187
Microstructure and Mechanical Behavior of AISI 430 FSS Welds Produced with Different Elemental Metal Powder Addition N. Bensaid, M. Hadji, R. Badji, M.F. Benlamnour, T. Saadi, Y.L. dit Laksir and S. Senouci	195
Possible Bose-Einstein Condensation of Polygonal Clusters in 2D-Materials A. Boudiar	204