

Table of Contents

Preface

Influence of Gama Prime Changes on the Heat Transport Phenomena of a Nickel Super Alloy	
P. Košťál, P. Jonšta, I. Kopal, Z. Košťálová Jančíková, I. Špička, T. Kulová and I. Vlčková	1
Considerations on Heat Transfer in Parallel-Plate Channels with Staggered Fins	
L.H. Perão, M. Vaz Jr. and P.S.B. Zdanski	12
Development Issues of Alternative Energy in Algeria	
L. Azouaou, N. Slimani and A. Chadlia	24
Performance Analysis on Variable Injectors to Improve the Internal Velocities and Flow Rates in a Fuel System for Natural Gas Vehicles	
K.S. Kim and D.S. Choi	31
Numerical Solution of the Bio-Heat Transfer Equation with Uncertain Parameters Using the Sensitivity Analysis Methods	
B. Mochnacki, M. Ciesielski and A. Piasecka-Belkhat	39
Flow Characteristics around Circular Cylinders with a Normal Slit	
C.H. Kuo, H.W. Lin, C.T. Chai and F. Cheng	48
LAD2D: A Computer Code for Detonation Fluid Dynamics Problems with Large Distortion and Internal Slip	
R.L. Wang, X. Liang and Z. Lin	58
A Design-Variable-Based Computational Study on the Unsteady Internal-Flow Characteristics of the Urea-SCR Injector for Commercial Vehicles	
C.S. Kim and S.Y. Park	64
A Mathematical Formulation for Calculating Temperature Dependent Friction Coefficient Values: Application in Friction Stir Welding (FSW)	
B. Meyghani, M. Awang and S. Emamian	73
A Deep Insight to Secondary Flows	
G. Ilieva Ilieva	83
Modeling of Laser-Soft Tissue Interactions Using the Dual-Phase Lag Equation: Sensitivity Analysis with Respect to Selected Tissue Parameters	
E. Majchrzak, M. Jasiński and Ł. Turchan	108
Moisture Diffusion in Natural Rubber/Bentonite Nanocomposites: Effect of Clay Filler Treatments	
B. Pajarito, W.F.F. Mangacat, M.R.M. Tigue and M.T. Tipton	124
Examination of Thermal Parameters, Primary Dendritic Spacings and Microhardness of a Horizontally Solidified Al-Cu-Mg Ternary Alloy	
A.S. Barros, M.N. Collyer, A.P. Silva, A.L. Moreira and O.L. Rocha	133
Effect of Entrainment Ratio and Subcooling Degree on Dual System of Cooling-Thermal Energy Conversion Applying Ejector	
J.I. Yoon, H.S. Lee, C.H. Son, S.H. Seol, K.S. Lee, H.J. Kim and J.H. Moon	140
Modelling a Multi-Stage Diffuser for Sucrose Extraction in Sugarcane Biorefineries	
L.d.S. Noel Simas Barbosa, P.A. Santiago and P. Selegim Jr.	149
Correlation between the Energy Input and the Microstructure of Additively Manufactured Cobalt-Chromium	
L. Hitzler, P. Williams, M. Merkel, W. Hall and A. Öchsner	157
Pressure Model for Capillary Tree-Shaped Fractal Networks	
A.F. Miguel	166
Experimental Study of the Rate of Evaporation from Porous Media of Different Matrices	
Y.L. Yeu, H.H.J. Tan, A. Gorin and A. Vakhguelt	171
Nonlinear Behaviour of Mass Transfer Mechanisms in Solvent Oil Recovery	
S. Lorimer and C. Smithaniuk	181
Renewable Energy Potential of Kazakhstan	
A. Vakhguelt	189