

Table of Contents

Preface

Chapter 1: Steel and Alloys

Improvement of the Technology of Melting of Low Alloy Steel Alloy in an Electric Arc Furnace

N. Kholmiraev, N. Turakhodjaev, N. Saidmakhamadov, N. Tadjiev, J. Khasanov, B. Yusupov, S. Khojibekova, N. Sadikova, I.S. Nosirkhujaev and J. Juraev 3

Mathematical Modeling of the Effect of TiC Nanopowder Particles on the Wear Resistance Properties of Low-Alloy Steel

N. Kholmiraev, N. Saidmakhamadov, J. Khasanov, N. Tadjiev, B. Yusupov, N. Sadikova, O. Yuldashev, F. Makhmudov, I.S. Nosirkhujaev and Z. Nurdinov 11

Study of Variability Phenomena in Direct Energy Deposition of Nickel-Based Superalloy on Geometric Accuracy and Residual Stress Formation

A.I. Khaimovich, E. Nosova, A. Baliakin, E. Zlobin, M. Oleinik and A. Kuzina 21

Chapter 2: Metal Corrosion

Detection of Stress Corrosion Cracking in SS304 under Calcium Silicate Thermal Insulation Using Acoustic Emission Technique

S. Nuthalapati, K.E. Kee, M.C. Ismail and S. Ieamsupapong 33

Effect of Annealing Time on Pitting, Intergranular Corrosion, and Hardness of Stainless Steels

S. Ieamsupapong, S. Boonpia, K. Wattanakhum, S. Daopiset and K.E. Kee 41

Electrochemical Analysis on Corrosion of Stainless Steels in Molten Nitrate Salt

N. Kanjanaprayut, P. Promdirek and T. Siripongsakul 49

Comparative Study of Corrosion Resistance in Heat-Treated Bainitic and Pearlitic Steels in Sodium Chloride Solution under Room and Elevated Temperatures

P. Thongsan and T. Thublaor 57

Bottom of Line Corrosion Mechanism in Marginal Sour Environment Wet Gas Pipelines

L.Y. Azhar, M.H. Hasnan, H.H. Jarni, N.K. Othman and N. Yaakob 65

Chapter 3: Polymer Materials

Exploring Peculiar Properties of Graded Rubber

Q.V. Do and M. Yamaguchi 79

The Synergistic Effects of Expandable Graphite and Ammonium Polyphosphate on the Properties of Flame-Retardant Nitrile Butadiene Rubber

N.T. Liem, N.D. Long and D.V. Diep 87

Edible Plastics/Films or Biopolymers from Food Materials

N.T.H. Thao, D.V. Hung, N.T.M. Tu and L.H. Nga 97

Stable Fabrication of Chitosan/Polycaprolactone (CS/PCL) Core-Shell Nanofibers by Electrospinning

H.N. Phuong, D.N. Thu, N.T. Liem and V.A. Doan 107