

# Table of Contents

## Preface

<b>Applicability of Wiedemann-Franz Law to Thermal Conductivity of Molten Field's Metal</b>	1
N. Mizuno, S. Kosai and E. Yamasue	
<b>Time Dependence of Muon Spin Relaxation Rate in Aluminum and Al-1.6%Mg<sub>2</sub>Si Alloy</b>	10
K. Nishimura, K. Matsuda, S.W. Lee, I. Watanabe, M.A. Jawad and T. Matsuzaki	
<b>Effect of Electroless Ni-P Plating on the Bonding Strength of PbTe Thermoelectric Module Using Silver Alloy-Based Brazing</b>	16
S.H. Bae, J.Y. Choi and I. Son	
<b>Micromechanical Analysis of Dislocation and Precipitate Interactions in Aluminum Alloys</b>	23
S. Muraishi and J. Liu	
<b>Robustness in Coupling between Iron and Rare Earth Spins in Rare Earth Orthoferrites</b>	29
M.H. Mohammed, J. Horvat, Z.X. Cheng and S.X. Cao	
<b>Dislocation Dynamics Simulations of Dislocation-Particle Bypass Mechanisms</b>	35
J. Liu and S. Muraishi	
<b>In Situ EBSD Observation of Pearlite-Austenite Reverse Transformation in Eutectoid Steel</b>	42
A.H. Pham, S. Morito, T. Ohba and T. Hayashi	
<b>First-Principles Study of the Adsorption of Carboxylic Acid on Cu(111)</b>	48
N. Nunomura, J. Yamashita, M. Hatakeyama and S. Sunada	
<b>Corrosion Resistance of the Sintered Fe-Cu-C, Fe-Cu-Ni-Mo-C and Fe-Cr-Mo-C Alloys Coated with a Rust Preventive Oil</b>	54
S. Sunada, M. Hatakeyama, K. Hibino, K. Tagishi, Y. Mizukoshi, S. Takeuchi, Y. Maekawa and N. Nagase	
<b>Effects of Titanium Surface Wettability on Osteoblast Behavior <i>In Vitro</i></b>	64
K. Nisogi, S. Okano, S. Kobayashi, K. Kuroda and T. Okamoto	
<b>Nanotube Formation on Ti-15Zr-4Nb-4Ta by Anodic Oxidation</b>	69
S. Okano, M. Mori, S. Kobayashi and T. Okamoto	
<b>Removal of Tramp Elements from Molten Iron for Recycling Ferrous Scraps</b>	74
H. Ono	
<b>Effects of Oxygen and Nitrogen Addition on Phase Transformation in Ti-10at%V</b>	80
S. Kobayashi, R. Fukushima, S. Wu and S. Okano	
<b>Effect of Heat Treatments on Wettability of Nacre</b>	86
A.M. Anshar, S. Kobayashi and S. Okano	
<b>Process Design for Superalloys Sheet Rotary Forming</b>	91
K. Zaba, S. Puchlerska, T. Pieja and J. Pyzik	
<b>Effect of Thermomechanical Processing on Grain Size, Texture and Mechanical Properties of Pure Magnesium</b>	97
M.M. Sarr, M. Yuasa and H. Miyamoto	
<b>Microstructure and Catalytic Activity of Melt Spun Al-Cu-Fe Ribbons</b>	109
L. Litynska-Dobrzańska, K. Stan-Glowinska, A. Wójcik, D. Duraczyńska and E.M. Serwicka	
<b>The Upgrading of Ha Tinh Ilmenite to Synthetic Rutile by Becher Process</b>	115
B.N. Duong, T.N. Truong and T.T. Nguyen	
<b>Synthesis of Ordered Mesoporous Carbon from Vietnam Natural Kaolin Clay for Supercapacitor Application</b>	124
N.T.H. Chu, Q.L.D. Ngo and H.T.T. Le	
<b>Microstructures in HAZ after Heat Treatment of Carbon Steel and Austenitic Stainless Steel Welds</b>	137
L.T. Nhungh, P.M. Khanh, N.D. Thang and B.S. Hoang	
<b>Influence of Ag Doping on the Electrochemical Supercapacitor Characteristics of Manganese Dioxide Prepared by Pulsed Potentiostatic Electrodeposition</b>	147
T.T.B. Huyen, A.N. Nguyen, D.T. Nguyen and T.T.B. Hoang	
<b>Effect of pH of Coating Solution on Adhesion Strength of Hydroxyapatite and Octacalcium Phosphate Coatings on AZ31 Magnesium Alloy</b>	156
T.A.N. Tuyet, S. Hiromoto, P.N. Nguyen and T.P. San	

<b>Fabrication of Silicon Carbide from Vietnamese Rice Husk Charcoal and Diatomite by Electric Arc Furnaces</b>	165
V.T. Trinh and M.N. Nguyen	
<b>The Effect of Oxidation Temperature on Activating Commercial Viscose Rayon-Based Carbon Fibers to Make the Activated Carbon Fibers (ACFs)</b>	171
L.H. Vu, H.S. Nguyen, Q.K. Dang, V.C. Pham and T.H. Le	
<b>Synthesis and Luminescent Properties of Europium Doped Zirconia Nanoparticles</b>	177
H.V. Nguyen, V.H. Pham and V.H. Pham	
<b>Change in the Strength of Steel Grade 11 Loaded at Room Temperature</b>	185
A.H. Bui, T.H. Nguyen, V.H. Kieu, X.H. Dinh, C.S. Nguyen and T.T.H. Phung	
<b>Formation of Heterostructure with Appearance of <math>\alpha</math>-Al Phase in Hyper- and Eutectic Al-Si Alloys by Solidification at High Rate</b>	193
H.H. Nguyen, Q.T. Nguyen and M.D. Le	
<b>Simultaneous Synthesis and Densification of Carbon Nano-Materials Dispersed Boron Carbide Composites Using Pulsed Electric-Current Pressure Sintering (PECPS)</b>	202
K. Hirota, H. Hirahara, K. Masaki and T. Nishimura	
<b>Microstructure and Mechanical Properties of <i>In Situ</i> Cast Aluminum Based Composites Reinforced with TiC Nano-Particles</b>	211
W. Maziarz, P. Bobrowski, A. Wójcik, A. Bigos, Ł. Szymański, P. Kurtyka, N. Rylko and E. Olejnik	
<b>Reciprocal Space Map Measurement of Ceramics Thin Films for Unequal Lattice Change at High Temperature</b>	218
A. Saiki, S. Miwa and T. Hashizume	
<b>Evaluation of the Material Properties of the Ti and CoCr Alloys Prepared by Laser Powder Bed Fusion</b>	223
J. Bidulská, R. Bidulský, P. Petrousek, T. Kvačkaj, M.A. Grande and R. Hudák	
<b>Wear-Resistant Surfacing Layer Prepared by High Efficiency Twin-Wire Indirect Arc Welding</b>	229
D.T. Wu, Y. Zou, G.L. Zhao and C.W. Shi	