

Table of Contents

Preface, Sponsors and Organizers

Chapter 1: Advanced Engineering Materials

Microstructures and Thermostability of Spray Formed Nb-Containing High Speed Steel Y.P. Yu, J.F. Huang, H. Cui, Y.H. Cai and J.S. Zhang	3
SERS Study of Malachite Green on Silver Nanocaps Arrays Y. Fan and S.Q. Man	8
Study on the Reaction of TDI and PPG with Organo-Tin Mixed Catalyst S.R. Liao, Y. Wei, Y.Q. Zhang, M. Zhang and G.F. Feng	13
Photocatalytic Degradation of Various Dyes by Strontium Titanate Nanoparticles T. Xian and H. Yang	18
Study on the Heat-Press Bonding Optimum Technics of Stitchless Apparel J.F. Tang, L.J. Wang, F.Y. Zou and H.Y. Sou	22
Technology Study of Polypropylene Hollow Fiber Membranes-Like Artificial Lung Made by the Melt-Spinning and Cold-Stretching Method X.D. Liu, L. Ni, Y.F. Zhang, Z. Liu, X.S. Feng and L. Ji	26
Novel Blend Films Prepared from Solution of Collagen and Cellulose in 1-Allyl-3-methylimidazolium Chloride Ionic Liquid H.F. Wang, H.N. Lv, J. Feng and Z.K. Wang	30
A Study of Clay Material Properties in Stop-Motion Animation X.D. Tian, B.X. Wei and W.P. Hu	34
Direct Synthesis of Dimethyl Carbonate Form Methanol and Carbon Dioxide Using $\text{H}_3\text{PW}_{12}\text{O}_{40}/\text{Ce}_{0.1}\text{Ti}_{0.9}\text{O}_2$ with Ionic Liquid Catalysts R.C. Wu, T. Xie and M. Li	38
A Comparative Study on the Effects of FSS with Different Elements on the Characteristics of Radar Absorbing Materials X.Y. Chen, J.B. Wang, J. Lu, G.C. Sun and G.B. Chen	42
Characterization of Cobalt-Based Catalyst Supported on TiO_2 Nanofibers for Fischer-Tropsch Synthesis S.Y. Yu, Y. Ma, Z. Cao and H.Q. Su	46
Stress Analysis of Laminated Glass under Uniform Lateral Pressure S.H. Pang, J.R. Ma, Z.Z. Ma and L.C. Wang	50
Hydrochloric Acid Corrosion Behavior of $\text{Nb}_2\text{O}_5\text{-Al}_2\text{O}_3$ Ceramics Prepared by Microwave Sintering Y.L. Ai, F. He, B.L. Liang, W. He and L. Liu	55
Synthesis and Crystal Structure of the Cobalt (II) Complex with Mixed-Ligand Y. Yang, L.T. Yan, X. Li, R.H. Qin and W.G. Duan	59
A New Method for Processing Ceramics with Cracked Glaze J.W. Fan, X.P. Li, Z.J. Zhang, W.X. Zhang, Z.Q. Jiao, R.J. Zhang, Y. Liu and Z.G. Zhang	63
Growth of $\text{Cu}_2\text{ZnSnS}_4$ Thin Films by Sulfurization of Co-Sputtered Metallic Precursors X.Y. Li, D.C. Wang, Q.Y. Du, W.F. Liu, G.S. Jiang and C.F. Zhu	67
Investigation of the Bird Shape Effects on the Simulation Results of Bird Striking Laminated Aircraft Windshields L.Z. Liu, Z.Z. Ma, S.H. Pang, S.G. Zang, Y.C. Ou and Y. Zuo	72
Surface Morphology and Infrared Absorption of Silicon Irradiated by Picosecond Laser Pulses in SF_6 D.W. Liu, Y.G. Huang, X.N. Zhu, X.Y. Wang, H.J. Yu, X.C. Lin, M.H. Chen and H.L. Zhu	77
Stimulation Mechanism of SDS Nanoemulsion in Tight Gas Reservoirs M.L. Luo, J.L. Liu, L.J. Liao, Z.L. Jia and H.T. Sun	82
Preparation and Characterization of Biodegradable Polylactic Acid/Gelatinized Cornstarch Foams P.P. Xie, M.J. Niu, K. Guo, J.Z. Chen and X.F. Li	86

Study on the Treatment of High Salinity Oil Waste Water by Reverse Osmosis Technology L. Ji, Y. Liu, Y.F. Zhang and X.D. Liu	90
Study on the Kinetics and Optimization of Technological Process of Microwave - Vacuum Drying of Bleached Shellac H. Zhang, L.S. Yu, H. Zheng, Y. Feng, X.M. Chen, J. Chen, W.W. Zhang and S.P. Liu	94
Modal Analysis of Montmorillonite in Bentonites Using Phase Mixing Equation G. Li, H.W. Ma, M.T. Liu, J.P. Zhang and H.L. Wang	102
Synthesis of a Novel Fluorene Derivative for Polyfluorenes: 7,7'-di(5-bromothiophen-2-yl)-9,9,9',9'-tetraoctyl-2,2'-bifluorene L. Li, X.X. Sun, Q.H. Wu and Y. Hu	108
Study on <i>In Situ</i> Ti(CN) Particle Reinforce Composites Coating Processed by Nitrogen Shielded Arc Welding Technique J.S. Li, J.J. Hao, Y.J. Ma and S.L. Li	112
The Study on BFRP Binding Force of Secondary Compression Tests of Concrete Short Columns W.H. Ma	116
Influence of Asymmetry on Extraordinary Optical Transmission through Periodic Arrays of Triangular Holes W.J. Yin, L. Yu and K. Zhang	121
Effect of Normalizing on Texture and Deep-Drawing Property of 10Cr17 Ferrite Stainless Steel Y.L. Feng, S. Li, J.Z. Yin and M.S. Du	125
Viscosity and Optical Properties of Sodium Alginate Aqueous Solutions of High Concentrations H.N. Li, Y.Z. Xia, F.Y. Quan, B.B. Wang, L.H. Zhu, Z. Sun and W. Xu	129
Study on Performance of Diesel Engine Supplied with Methanol-Diesel Blended Fuel D.M. Han and S.Q. Sun	133
Preliminary Study on Nanometer Grouting Materials L. Guo, B. Xie and H.F. Li	139
Investigation of Simple Beam Stiffness Amended Model Based on Finite Element Analysis Results Y.C. Li and S.M. Wan	143
Research on Pavement Performance with Warm Mix Asphalt Concrete Y.P. Lin and B. Li	147
Synthesis of Phenothiazine Derivatives Containing Hetero Atom and Analysis of Conductive Polymer D.H. Yun, H.S. Yoo, Y.S. Park and J.W. Woo	153
A Composite Structure Multi-Parameter Sensor Based on an Embedded Fiber Grating Y.G. Zhan, J. Luo and H. Wu	159
Influence of Reinforcing Materials on the Properties of Woven Spacer Fabric Composite Sandwich Panels L.X. Jia, Y.J. Sun, X.Y. Yang and R. Wang	165
Preparation and Characterizations of Polysulfone Flat Ultrafiltration Membranes S. Zhang and Z. Liu	169
The Effect of Percentage of Primary α on Mechanical Properties of Bimodal Microstructure of TC4 J.M. Yang, Y.W. Wang, J.B. Gao and P. Xiong	173
Effect of Polyurethane with Different Elastic Modulus on the Response of Aircraft Windshield against Bird Strike L.Z. Liu, Z.Z. Ma, S.H. Pang, S.G. Zang, Y.C. Ou and Y. Zuo	179
Noise Suppression of Optical Voltage Transducer by a Robust Control L.J. Li, B.J. Li, L. Bi, X. Zhang and C.X. Zhang	185
Study on the Calamine/Sodium Alginate Modified Viscose Fiber D.Q. Liu, Y. Liu, S.F. Han, Y.F. Zhang and C.Y. Yin	192
Study on Refining Technology of Low-Sulfur Steel M. Zhang and J.H. Zeng	196
Explosive Characteristic of Pulverized Coal Explosion J.H. Li, L.B. Yin and W. Wu	201

Potential of Energy Saving and Technical Measures in Sintering in China X.F. Yin, S.J. Hao, W.F. Jiang and Y.Z. Zhang	207
Optimization of the Components of Medium Producing Dextran from Immobilized Cells of <i>Leuconostoc mesenteroides</i> Q. Wang, X. Wang, Q.S. Zou, Y.Y. Pu and S. Chen	212
Picosecond Laser Microstructuring for Black Silicon Solar Cells X.N. Zhu, H.L. Zhu, D.W. Liu, Y.G. Huang, X.Y. Wang, H.J. Yu, S. Wang, X.C. Lin and P.D. Han	217
Study on Superelasticity and Microstructure of TiNiV Shape Memory Alloy by Medium-Temperature Treatment Z.J. Zhang, N.C. Si, G.L. Liu and S.H. Si	222
The Utility Classification and Heating Process Analysis in Silicon Steel J.X. Gao and Y. Shi	228
Study on the Performance of Hydrophobic Association Water-Soluble Polymer with Strong Association Ability L.T. Shi, Z.N. Shen, W. Zhou, Z.B. Ye and J.F. Wang	232
Fabrication and Characterization of Regenerated Cellulose/TiO₂ Nanocomposite Hybrid Fibers S.X. Shu and C.R. Li	237
Fabrication of NiTi Alloy Coating on 2Cr13 Stainless Steel by Laser Cladding C.H. Zhang, S. Li, L. Qi, Y.H. Ren, S. Zhang and M.C. Wang	242
Enhanced Corrosion Resistance and Damping Capacity of As-Cast AZ91 Magnesium Alloys with Ce Addition D.Q. Wan	246
Influence Study of Reinforced Fiber on the Impact Resistance Performance of Recycled Aggregate Concrete L. Gao, Y. Shi and Y.C. Liu	250
Fuel Properties of a Two-Phase Biodiesel Emulsion N.N. Chu, Y. Xu, Y.J. Ma, J.X. Wang, X.B. Li and L.S. Wang	254
Coal Hybrid Heavy Aromatics Vehicle by Fuel of Experimental Research D.M. Han, S.Q. Sun and S.Q. Li	260
The Influence of Thermal Exposure on the Microstructure Evolution of a Nickel-Base Single Crystal Superalloy Y.X. Jia, T. Jin and J.L. Liu	265
Effect of the Fibre Morphology and Aging Conditions on the Mechanical Properties of Hemp Fibers A. Cherouat, X.L. Gong, F. Ilczyszyn, S. Jin and G. Montay	270
Influence of Preparing Conditions on the Property of a New White-Light Long Afterglow Phosphor Sr₂SiO₄: Pr³⁺ L. Chen and H.H. Zeng	274
Study on the Structure and Phase Transition of Sm Substituted BiFeO₃ Nanoparticles Y.X. Sun, X.W. Zhang and H.R. Liu	278
Thermal Performance and Dehydration Kinetics of KAl(SO₄)₂•12H₂O as Phase Change Material J.F. Dai, R.Q. Ling and K.Z. Wang	282
Preparation of Hexagonal Fe₃O₄ Nanometer Particles via Weakly Magnetic Field Assisted Oxidation Co-Precipitation D.W. Hu and Y.M. Wang	286
Properties of Nano-ZnO Films Deposited by RF Magnetron Sputtering for SAW Biosensors Q.Y. Fu, P.C. Yi, D.X. Zhou, W. Luo and J.F. Deng	293
Convenient Hydrothermal Synthesis of Zeolite a from Potassium-Extracted Residue of Potassium Feldspar S.Q. Su and H.W. Ma	297
Preparation of Nano-Fibrous Poly(L-lactic acid) Scaffold with Hierarchical Pores X.J. Wang, T. Lou and G.J. Song	303
Behavior of Continuous FRP Rectangular Spirals as Shear Reinforcement for Concrete Beams S.Y. Jiang, B.H. Li, Q.H. Shi and X.Q. Hu	307

Study on the Nanoconfinement-Induced Breaking of Helical Symmetry in Metal Nanowires Y. Wei, L. Jiang, G.K. Yang, T. Wang and Y. Zhang	313
Preparation of Three-Dimensional Ordered Macroporous Perovskite-Type LaFeO₃ Oxides K. Zhao, F. He, X.A. Li, Z. Huang and H.B. Li	317
Preparation and Dielectric Properties of Dy-B-Si-O Glass-Doped Ba_{0.6}Sr_{0.4}TiO₃ Ceramics G.S. Liu, L.H. Yang, T.C. Ma, K.Z. Wu, Z.J. Zhang and X.Y. Shen	323
Electrochromic Properties and Raman Spectroscopy Analysis of Tungsten Oxide Thin Film by RF Sputter C.P. Cheng and S.H. Lin	328
Probing Swelling and Shrinking Process of Polystyrene Film by <i>In Situ</i> Ellipsometry X.Y. Yang, J.P. Li, Y. Liu and X.X. Gao	333
Effect of Welding Residual Stress on Fatigue Performance of the Welded Joints Treated by Ultrasonic Peening L.C. Wu and D.P. Wang	337
Synthesis of AlN Powders by Carbothermal Reduction-Nitridation Reaction of Nonhydrolytic Al₂O₃ Gels with CaF₂ Addition H.Y. Wei, D.S. Pei, Z.Y. Du, J.H. Zhao, Y.N. Wei, Y.B. Geng, R.S. Wang and J.L. Bu	342
Reduction Kinetics of Bayan Obo Coexisted Iron and Niobium Ore by Carbon-Bearing Pellet F.S. Zhang, Z.W. Zhao, Y. Li and N.X. Feng	346
Study on Microstructures and Mechanical Properties of AlSi9Cu3 Aluminum Alloy Fabricated by Liquid Forging S.L. Li, W.L. Sun, H.Q. Wang and B. Sun	353
A Modified Coupling Method to Solve the Integrated Equations of Velocity and Temperature Fields in 3D FEM S.N. Song, J.Y. Liu, X. Liu and C.S. Li	357
Preparation and Ferroelectric Properties of Sol-Gel Derived (Ba_{0.95}Ca_{0.05})TiO₃ Ceramics X.L. Yang, X.Y. Deng, L.R. Han, R.B. Yang, Y.J. Zhang, C.F. Wang, X.L. Zhang, J. Liu and Y.S. Wang	362
Friction and Wear Behaviors of PTFE Composites Reinforced with Different Fillers L.Q. Wang, J.W. Sun and L. Gu	368
Unascertained Measurement Model for Water Safety Assessment J.Y. Wang, W.S. Wang, Z.Y. Li and B. Zhang	373
Adaptive Control Design for Hydrogen Production via Autothermal Reforming of Methanol J.F. Zheng, Q.M. Yang, J.G. Lu and Y.X. Sun	377
Study on Interfacial Tension and Flammability of Mg-Ca-Ce Alloy Melt X.K. Meng, W.M. Zhao and J. Ding	383
Removing of Si in the NaOH Molten Salt Reaction of Titanium Slag to Produce TiO₂ Y.F. Han, T.C. Sun, J. Li, L.N. Wang, T.Y. Xue and T. Qi	387
Coating of Ti64 Bearings in Air by Using a Q-Sw Laser J. Rozwadowska, K. Kida, E.C. Santos, T. Honda, H. Koike, Y. Kashima and R. Matsumoto	393
Morphologies and Crystal Phase Control of Calcium Carbonate Using “Crew-Cut” Micelles of Poly (styrene)-<i>b</i>-Poly (acrylic acid) as a Crystal Growth Modifier at Room Temperature Q.K. Li, Y.P. Wang and Y.M. Wang	398
The Comparison of the Adsorption Performances of Phenol onto H103 Resin and XAD-4 Resin G.Q. Xiao and Y.X. Wu	402
Study on the Mechanical Properties and Frost Resistance of Recycled Concrete Prepared by Village Construction Wastes J. Liu, Y. Li, D.D. Hong and Y. Liu	406
A PMA-Based Collaborative Strategy for Reliability Design and Optimization of Multidisciplinary Systems R.G. Yu, J. Zhang and B. Zhang	411
Synthesis of a Novel Donor Unit for D-A Type Polymers: 2,7-di(5-Bromothiophen-2-yl)-10-Hexadecyl-Phenoxazine L. Li, X.X. Sun, Q.H. Wu and Y. Hu	415
Study on Refining Technology for Reducing the Content of T[O] in Steel X.D. Yang	419

Generation Characteristics of Polycyclic Aromatic Hydrocarbons during Blending Coal Coking	
Y. Shi, C.Y. Song and L. Gao	424
Preparation and Characterization of Multiwalled Carbon Nanotubes Deposited by Europium Hydroxide	
S.M. Fang, J.Y. Tang, L.J. Gao and L.M. Zhou	428
Inhibited and Enhanced Spontaneous Emission Using Silicon-Based on Finite Thickness Photonic Crystal Waveguides	
W. Amorntep and P. Wanchai	436
Evaluation of Relations among Basic Mechanical Properties of Concrete with Machine-Made Sand	
F.L. Li, Y. Zeng and C.Y. Li	441
Design for Optimal One-Dimensional Surface Profile of EVA on Solar Cell Modules	
Y. Li, X.D. Zheng and L.F. Shen	445
Corrosion Behavior and Mechanical Properties of Reinforcing Bar HRB400 in NaCl Solution	
L. Ping and W. Ying	451
Influence of Nano-Serpentine on Tribological Behaviors and Wear Process of Hybrid PTFE/Kevlar Fabric Composites	
L. Lu, Y.L. Yang, X.W. Qi and Z.X. Hou	455
Electrochemical Study on the Effect of Xanthine on Electrodeposition of Nanostructured Pt Thin Films and Pt(IV)-Xanthine Interaction	
H.C. Pan, J.T. Liu, W.H. Liu, X.P. Li and G.X. Liang	460
Fabrication of Unfired Porous Quartz Brick Used the River Sands from the Yangtze River in China	
J.G. Song, F. Wang, D.M. Du, Y.L. Li and G.C. Ji	465
Study on the Properties of PVDF/LCP Blending Membranes	
Y. Liu, Y.F. Zhang, C.C. Wu, D.Q. Liu and S.F. Han	469
Review of Mix Proportion Design Methods for Fly Ash Concrete with Machine-Made Sand	
F.L. Li, Y. Zeng and C.Y. Li	473
Effect of Amorphous and Nanocrystalline Inoculant on Microstructure and Mechanical Properties of High Chromium Cast Iron	
C. He, C.X. Cui, W.D. Shi, Q.X. Liu and L. Fang	477
Study on the Stability of Insect Wax during Storage Period	
K. Li, R.G. Zhang, H. Zhang, H. Zheng, K. Li and W.W. Zhang	481
Preparation and Properties of Thermo-Sensitive Molecularly Imprinted Hydrogels	
W.L. Zhang, Y.P. Zhao, X.H. Liu, L. Chen, Q.S. Zhang, K.Y. Zhao and J.J. Chen	490
Study on Rotary Object Recognition Technique from the Complex Background	
B.Z. Li, M.Y. Sha and Y.P. Cui	494
Research on the Hydrothermal Processing of Mica-Titanium Pearlescent Pigment Precursor	
W.J. Ji, D.G. Li, X.Z. He, Y.Y. Zheng and C. Yu	501
Effect of Compression Ratio and Lay Angle of Metal Net on the Mechanical Properties of Metal Net-LVL Composite	
J. Li and Y.C. Hu	505
Finite Element Simulation of Perfect Bonding for Single Fiber Pull-Out Test	
G.F. Wei, G.Y. Liu, C.H. Xu and X.Q. Sun	509
Surface Topography of Vinyltriethoxysilane Films Deposited on the Silicon Dioxide Substrate (0001) Investigated by Atomic Force Microscopy	
Y. Wu, C.J. Cai, Z.G. Shen, S.L. Ma and Y.S. Xing	513
Continuous Cooling Transformation Behavior of Vercooling Austenite of Low Carbon-Manganese Steel	
L.W. Duan, Y.L. Feng and X.J. Qi	523
Study on Foam Properties of Alkylbenzene Sulfonate Gemini Surfactants	
X.G. Du, C.W. Wang, R.Q. Niu, J. Zhang and Z.Y. Yang	528
Research on the Confidence Interval of Indirect Detection	
H.B. Chen, N. Ge and X.J. Tong	532
Effects of the Particle Size Variety of Metal Oxide on the Absorption Property of Long-Wavelength Infrared Laser	
W.F. Wang, Y.G. Zheng, J.H. Yao and M. Zhang	536

Preparation and Properties of Halogen-Free Flame Retardant Polyurethane Foams D.M. Chen, Y.P. Zhao, J.J. Yan, L. Chen, Z.Z. Dong and W.G. Fu	540
Study on Dehydration Process of Wet Natural Rubber by Single Screw Dehydrator and Properties of Dry Natural Rubber M. Chen, F.Q. Zhang, Y.Z. Wang, M.F. Huang and W.Y. Deng	544
The Assembly Success Rate and the Estimation of Assembly Time for a Flexible Assembly System J. Wang, Z.J. Yao and Z. Guo	548
Photocatalytic Activity of Bi₂O₃ Prepared by Different pH Value Y. Lu, X.Y. He, J.B. Zhong, J.Z. Li and W. Hu	554
Study on Influence of Modified SiC Nano-Powders on the Microstructures and Work-Hardening Properties of ZGMn13 J. Yang, M.L. Chen, L. Yang, H. Jin and H. Gao	558
Data-Conversion and Displaying for Numerical Simulation of EMCC with FEM-FVM-Joint Method H.J. Gong, X.Z. Li, X.Y. Fan, D.M. Xu and J.J. Guo	563
A Comparative Study of Monomers on the Preparation of Permselective Functional Packaging Materials Y.B. Fu, D.L. Li, W.C. Xu and X.Q. Tian	567
The Development and Performance Evaluation of Hydrophobic Association Polymer Pre-Cross Linked Particulate C. Qin, G.H. Wen, L. Zhou, J.B. Jin and X. Shi	571
The Impact of Reflux Ratio on Rectification Column Theoretical Plate Number J.Y. Wang, Z.Y. Li, B. Zhang and W. Liu	577
Reliability Study of CNC Machining Centers Y. Ma, W. Li and D.P. Li	581
Dyeing of Degummed Silk Fibers with Anthocyanins in Red Cabbage C.K. Yen, L.Y. Peng, C.X. Wang and Y.Y. Chen	585
Influence of Adding Different Poly (ethylene glycol) in the Biosynthesis of Bacterial Cellulose H.F. Liu, Y.H. Feng, J.K. Yan, D.L. Zhang and J.C. Li	589
An Experiment Study on Woven Fiber Reinforced Rubber Composite Armor against Shaped Charge Jet X. Jia, Z.X. Huang, X.D. Zu and M. Xia	593
The Preparation of Cu₂ZnSnSe₄ Films by Selenization of the Oxide Precursors G.L. Chen, L. Jin, W.F. Liu, G.S. Jiang and C.F. Zhu	597
A Study on Microstructures and Creep Behaviors in the Mg-3Sr-xY Alloys M. Hu, H. Fei, J. Gao and F.F. Zhao	602
Finite Element Analysis of 5MW Fiberglass and Carbon Fiber Wind Turbine Blade T. De, G.H. Chen and J.M. Zhang	606
The Development and Performance Evaluation of Green Cross-Linked Movable Gel C.X. Li, G.H. Wen, J.J. Yang, J.G. Li and Y.F. Zhou	610
Preparation and Characterization of Ni-Containing Aluminophosphate Molecular Sieves Y. Sun and L.Y. Ge	617
The Effect of Reinforcement-Length of Carbon Fiber Reinforced Bonding Composites on Circular Tubes under Flexural Condition E.M. Di, G.L. Zhang, M. Ma, G.W. Chen and L. Chen	621
The Effect of Uniaxial Stretching on the Crystallization Behaviors of Polylactic Acid Film H.L. Xie, K. Guo, J.Z. Chen, W.J. Wang, M.J. Niu and X.F. Li	625
The Preparation and Characterization of Carbon Nanostructures Catalyst and its Catalytic Activity H.Y. Li, S.L. Bai, W.P. Jia and F. Li	629
The Pressure Gas Line Characteristic Curve Shape Based on Origin H.F. Ning, M.J. Du, J. Gong and H. Li	633
Fabrication and Properties of the PVDF/PVDF-g-PMMA Blend Hydrophilic Membrane T. Yuan, J.Q. Meng, G.R. Cai and Y.F. Zhang	639
Characterization of Five Natural Resins and Waxes by Differential Scanning Calorimetry (DSC) R.G. Zhang, H. Zhang, Z. Zhang, H. Zheng, Y. Feng and W.W. Zhang	643

A New Approach for Colloidal Crystal Fabrication with the Template of Reversible Stress Wrinkle	
Q. Xu, Z.T. Yang, C.R. Li, B.Y. Chen and W.J. Dong	651
The Optimization Design of Laser Welded Sandwich Plate Structure	
Y.P. Sun, J. Li and Z.L. Teng	656
Effect of Si-SiC Additives on Properties of Tap Hole Clay	
F. Han, W.D. Xue and X.X. Huang	660
Theoretical Investigation of Energy Levels Splitting of CsCdBr₃:Pr³⁺ Crystal	
M.L. Duan, X.F. Yang and J.H. Li	665
Preparation of Highly Exfoliated Epoxy/Clay Nanocomposites by the Method of Ultrasonication Dispersion-Microwave Cure	
K.Y. Wang, S.Y. Zhou, Z. Jiang and X.Q. Zhu	670
Spatial Location of Zerovalent Iron Nanoparticles in Montmorillonite	
M.D. Fan, J. Hao, Y. Zhang and G.D. Jing	674
Effect of Metal Intercalating on Transmission Characteristics of One-Dimensional Photonic Crystal	
B.J. He, X.Y. Chen, J.B. Wang, J. Lu, J. Chang and D. Liu	679
Synthesis, Electrical and Humidity Sensing Properties of BaTiO₃ Nanofibers via Electrospinning	
H.D. Zhang, Y.Z. Long, Z.J. Li, B. Sun and C.H. Sheng	684
Effect of <i>In Situ</i> Formed Mullite on Properties of High Alumina ULC Castables	
Z.Y. Bi, N.S. Zhou, J.L. Sun, J. Zhao, J.W. Li and D.T. Xu	688
Synthesis of Tung Oil Anhydride-Ester Polyol	
X.J. Du, H.Z. Sun, Y.X. Wu, J.H. Zhou, X.F. Tan, D.Q. Zhang and H.Y. Zhang	693
Photolithography and Photochemical Reaction of Copolymer Containing Anthracene in Langmuir-Blodgett Films	
W.J. Xu, T.S. Li, G. Zhao, Y.J. Wu and T. Miyashita	698
Synthesis and Adsorption Properties of Crosslinked Starch Microspheres (CSM)	
C.J. Li, Q.T. Lin, Q.J. Liu, H.P. Pan and R.T. Zheng	702
Indonesia Coal Explosive Characteristic of Pulverized Coal in Experiment	
J.H. Li and L.B. Yin	706
Preparation and Characterization of Aluminium-Doped SnS Thin Films	
S. Zhang, S.Y. Cheng, H.J. Jia and H.F. Zhou	712
Condition Analysis of Nitrogen Remove from the Mixture of Municipal Wastewater and Fecal Sewage	
M.Y. Shi, D.H. Mo, K.S. He and J.P. Li	717
Ferroelectric and Dielectric Properties of La₂O₃-Doped BaTiO₃ Ceramics	
Y.S. Wang, X.Y. Deng, Y.J. Zhang, R.B. Yang, L.R. Han, C.F. Wang, X.L. Yang, X.L. Zhang, J. Liu and D.J. Li	721
Comparative Study on Microstructure and Texture of Ti-IF Steel Sheets Produced by Different Hot Rolling Processing	
Y.L. Feng, M. Cai and L.B. Chen	726
Progress towards the Automatic Assembly of Carbon Nanotubes by Dielectrophoresis	
L.J. Feng, L.B. An, C.G. Lu and C.W. Lu	731
Enhanced Optical Absorption in Modified One-Dimensional Metallic Photonic Bandgap Structures	
C.M. Zhang, T. Meng, Y.P. Hao and F.P. Liu	735
Application of the Soil Nailing Wall on Foundation Engineering	
Z.Q. Xu, Y.G. Ding, L. Yao and Q.J. Li	739
Dislocation Generated by Electron Irradiation	
Suryanto	744

Chapter 2: Surface Engineering/Coatings

The Characteristic of the Coating Prepared on Magnesium Alloy AZ91D by Micro-Arc Oxidization	
W. Shang, Y.Q. Wen, Y.Y. Qin, F. He and J.Y. Fang	751

Fast Electroless Ni-P Coating on AM60 Magnesium Alloy at Low Bath Temperature G.B. Mao	756
Diagnosis of White Spot Defects Drived from Gear Wheel Carbonization and its Corresponding Measures H.L. Liu and M.X. Liu	760
Simulation and Experimental Measurement of Ultrasonic Waves Propagation Velocity in Trabecular Bone A. Bennamane and T. Boutkedjirt	765
Primary Study on Electron Beam Surfi-Sculpt of Ti-6Al-4V X.C. Wang, S.L. Gong, E.M. Guo, H.Y. Zhao and H.D. Xu	772
Reliability Laboratory Analysis of PCB Surface Coating Based on ENEPIG J.W. Yu	777
Self-Protection of Flux-Cored Wire Surfacing is Applied to the Enhancement of Chute Lining Board L.J. Zheng, H.Y. Liu and Y.M. Fu	781
Fe-Based Amorphous/Nanocrystalline Coating on AZ91 Magnesium Alloy Substrate Deposited by Automatic High Velocity Arc Spraying L.L. Wang, X.B. Liang, S.C. Wei, Y.X. Chen, W. Guo and H.D. Ding	786
A Study on Brazing Process and Mechanical Properties of AZ31 Magnesium Alloy X. Xie, G.F. Quan, X. Gu, X.M. Liu and J.L. Sun	792
Preparation and Characterization of Sm³⁺ Doped CBS Transparent Glass-Ceramics Y.M. Wang, H.B. Zhang, C.H. Su and D.D. Fan	796
Effect of Refractorys Thermal Conductivity on the Thermal Stress Field of the COREX Gasifier Top W.D. Xue, X.X. Huang, J. Xie and X.D. Cui	800
Characterization of Ceramic Coatings on ZL114 Aluminum Alloy Prepared in Alkaline Electrolyte Adding Nano-Al₂O₃ by Micro-Arc Oxidation J. Zhao and J.J. Xi	804
Optimization of Process Parameters for Electroless Ni-P Plating on AZ91D Magnesium Alloy by Phosphate Pretreatment S.Q. Jia, J.X. Guan, Z.K. Zhao, H. Chen and S.Y. Jia	808
Applications on Nanocomposite Coating Technology in Plastic Injection Mould Cavity Surface Treatment B. Wang, J. Li, C. Wang and X.X. Hu	812
A Surface Melting Infiltration Study on Cast Magnesium Alloy Z.M. Liu, G.F. Quan and Y.B. Zhang	818
Mechanical Properties of ADC12-6061 Aluminium Alloy Joints Produced by Friction Stir Welding J.F. Li, X.G. Chen and Y.G. Xu	822
Technical and Structure Study of Coprecipitation Method for Nano-Titanium Dioxide F. Wen, Y.Q. Chen, Y. Cao and S.W. Lin	827
Effect of Ce on Wear Behavior of Plasma Spray Welded Novel Aluminum Bronze Coatings W.S. Li and Y. Liu	831
Study on Preparation and Performance of γ-Ray Protection Coating Y.L. Zhou, X.N. Zhu, Y.J. Li, S.T. Zheng and L. Li	835
An Improved Tool Path Model Including Gyroscopic Effect for Instantaneous Cutting Force Prediction in High-Speed Milling Q.H. Song and X. Ai	840
Influence of Organic Sealed on the Corrosion Behaviors of Micro Arc Oxidation Coated ZM5 Magnesium Alloy J.J. Xi and J. Zhao	844
Numerical Study on Uniaxial Compression Test of Rock Specimen with Random Holes B. Xie, L. Guo and X. Xia	848
Research on Surface Coating Technology of PCB Based on ENEPIG J.W. Yu	851
Influences of Pulse Current Density on the Characteristics of Ni-W-P-CeO₂-SiO₂ Composite Coatings R.D. Xu, D.C. Zhai and S.L. Hu	856

Non-Abrasive Cryogenic Polishing Device on Cylindrical Surface Based on Recurdyn Dynamic Simulation T.Z. Liang and S.P. Qu	861
Optimization of Diamond-Coated Drawing Dies for Stainless Steel Tubes Based on the FEM Simulation Z.C. Lin, B. Shen, F.H. Sun, Z.M. Zhang and S.S. Guo	865
Molecular Dynamics Simulation of Au-TiO₂ Catalysts: Deposition of Gold Nanoclusters on Rutile (110) Surface Q.H. Zeng, K. Wong and A.B. Yu	870
Self-Assembly of Large Scale and High-Quality Colloidal Particle Films by Spin-Coating Z.T. Yang, Q. Xu and C.R. Li	876
The Influence of D-SRRs' Geometry Dimension on the Resonant Frequency in the LHMs J.F. Wu	880
Effect of Slit Structure of Purging Plug on Stress Field X.X. Huang, W.D. Xue, J. Liu and F. Han	884
Investigation and Evaluation of the Safety Properties of Hardwood Athletic Floor System in China Y.P. Zhang, L.M. Peng, F. Fu and B. Lv	888
Fracture Analysis of the Tearing NBR Aged at Different Temperature L. Zhao, S. Wang, Y. Chen and W.F. Zhang	893
Study on Surface Roughness Transformation during Metal Rolling S. Almotaury, D.B. Wei and Z.Y. Jiang	897
Hygrothermal Characterization of Porous Building Materials-New Research Method on Water Vapor Transmission S. Yu and X. Zhang	903
Study on the Preparation and Properties of Low Permeability Coating Y.J. Li, Y.L. Zhou, S.K. Luo, L. Li and S.T. Zheng	908
Enhancing the Sinterability of Chemically-Derived Ti1212 Superconducting Powders Using Nano-Sized MgO as Sintering Aid F.M. Salleh, A.K. Yahya and M.H. Haji Jumali	914
Study on Oil-Ash Corrosion and Coal-Ash Corrosion Occurred in the Flue-Gas Side of Fossil Power Plant Y.Y. Zhou, Y. Zhou, G.H. Lu and T.S. Chen	918
Comparison of Lu₃Al₅O₁₂:Ce and LaBr₃:Ce Scintillators in Gamma-Ray Spectrometry W. Chewpraditkul, C. Wanarak, M. Moszynski and L. Swiderski	922
Research on Bonding Technology Match of ENEPIG PCB of Digital Microphone J.W. Yu	928
SHS-TiC Particle Reinforced Hardface Coating Prepared by Vacuum Cladding Process T. Lin, F. Wen, X.Q. Liu and Z.M. Guo	932
Effect of Process Parameters on Deposition Rate of Electroless Ni-P Plating on AZ91D Magnesium Alloy H.L. Wang, L.Y. Liu and W.F. Jiang	936
Failure Analysis on the Exhaust Steel Tube Explosion of Natural Gas Compressor Y.R. Jiang and M.B. Chen	940
Hygrothermal Characterization of Porous Building Materials-Experiment Research on Isothermal Sorption and Capillary Problem S. Yu and X. Zhang	944
Study on Surface Modification of Pure Magnesium and Magnesium Alloy with High Current Pulsed Electron Beam H. Ye, R. Chen and Z.L. Yan	950
Study on the Heat-Oil Resistance Capacity of Surface Chemically Modified Nitrile Rubber H. Han, S.J. Wang and X.R. Lv	954
Surface Topology Optimization of Air Bearing Slider for Wear Durability in Magnetic Hard Disk Drives D.W. Zhao, Y.Y. Zi and Z.J. He	959
Mixture Experiments Design Including Interactions with Process Variables for Applications in Paint Preparation J. Hu	965

The Influence of Argon Flow on Inclusion Characteristic and Fatigue Life of Continuous Casting Bearing Steels C.C. Hsu and H.H. Chung	972
Inhibition Effect of Compound Boricacidester on the Tungsten Carbide Leaching of the Cemented Carbide Tool X.M. Jia, Y.X. Song and S.X. Hou	977
Research and Evaluation on the Planning and Sanding Properties of <i>Mytilaria laosensis</i> C.W. Su, Q.P. Yuan, N.C. Su and J.D. Huang	982
Analysis of Flue-Gas Side Abrasion in Thermal Power Plant Boiler Y.Y. Zhou, Y.F. Zhao, T.S. Chen and G.H. Lu	987
Fatigue Analysis of the Drill String According to Multiaxial Stress J.B. Zhang and X.H. Lv	993
Effect of Refractories Thermal Expansion Coefficient on the Stress Field of the Top of Gasifier W.D. Xue, X.X. Huang, J. Xie and G. Liu	997
The Analysis of Nitrogen Removal Performance for Eco-Ceramic Concrete Biofilm Reactors M.Y. Shi, H.L. Zheng, J.Y. Liu and C.Q. Xiao	1002
Mechanism Analysis and Experiment Study on RC Composite Core Walls W.D. Chang, Y. Chang and L. Lu	1008
The Morphology Evolution of Vapour Phase Aluminide Coating on a CMSX4 Single Crystal Superalloy X.H. Han, E. Gariboldi, G. Longo and G.P. Zanon	1012
Idealisation and Formulation in Structural Dynamics Using Modal Analysis M. Danish, V.K. Pingali, S. Chattopadhyaya, N.K. Singh and A.K. Ray	1022
Impact of Shaft Coaxiality on the Local Stiffness of Angular Contact Ball Bearing Z.H. Ye, L.Q. Wang, C.W. Zhang and L. Gu	1026
Thickness Distribution Model of Condensate on Rotary Substrate by EB-PVD J. Shi, G.P. Song, C.X. Zhang, Y. Sun, X. Lin, M.W. Li and X.D. He	1031
Deformation and Heat Transfer Analysis for High Speed Dieless Drawing of AZ31 Magnesium Alloy Tubes T. Furushima, T. Ikeda and K. Manabe	1036
Inhomogeneous 3D Finite Element Model for Prediction of Free Surface Roughening T. Furushima, T. Masuda, K. Manabe and S. Alexandrov	1040
Electrical and Flexural Properties of Copper and Graphite Filled Phenolic Resin Composites M.D. Li, H. Niu, S.B. Wei and H. Yang	1044
Research on the Counterweight in the Process of Diamond Wire Saw Cutting Polysilicon L.Y. Zhang, J.G. Wang, Y. Yang and C. Wang	1048
Study on the Dielectric Properties of $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ Ceramics by the Brickwork Layer Model Y.Q. Zhang, L.Q. Su, X.F. Wang, H.X. Wang and L.B. Li	1056
A Dynamic Dispatching Method of Resource in Cloud Computing Environment H.W. Zhao, Y.N. Zhu and Y.C. Shao	1060
The Simulation Study on the Rules of Spatial and Temporal Changes of Total Nitrogen in Semi-Aerobic Landfill Leachate in the Laboratory X.R. Pang, Q.F. Huang, X.D. Pang, G.D. Zhang, J. Wang, W.J. Zhou, H.Y. Tang and Q. Liu	1064
The Effect of Bonding Length on the Flexural Performance of Carbon Fiber Epoxy Matrix Composite Tubes E.M. Di, G.L. Zhang, M. Ma, G.W. Chen and L. Chen	1068
Microwave Devulcanization of Waste Rubber with Inorganic Salts and Nitric Acid G.D. Paulo, D. Hirayama and C. Saron	1072
Effect of Hydrogen Charging on Microstructure Morphology of Warm Rolled Low Carbon Steel R. Riastuti, P. Riyanti, D. Priadi and E.S. Siradj	1076

Chapter 3: Materials Forming, Machining and Joining

Numerical Analysis for the Bending Process of Profile with Stiffener C.G. Liu, Y. Yao, Y.S. Deng and X.Z. Li	1083
Study on the Static Recrystallization of E36 Ship Plate with Continuous Hot Rolling Process X. Hong, Z.B. Dong and Z.Z. Yang	1087
Study on Mechanical Behaviors in Friction Stir Welding of 6061-T4 T-Joints G. Zhou, X.Q. Yang and X.D. Xu	1092
Electrochemical Behavior of Corrosion Resistance Alloys T. Zhang, H.Y. Jing, Y.D. Han and L.Y. Xu	1097
A Welding Gun Height Detection Method in Compulsively Short Circuiting Transfer Mode of Rotational Arc GMAW Y.F. Gao and J.H. Xiao	1102
Experimental Analysis of Residual Stresses in Cold Formed Truck Frame Side Rail Structures K. Chinnaraj, M. Sathya Prasad and C. Lakshmana Rao	1107
The Effect of Modification and Heat Treatment on Low Chromium White Cast Iron E. Liu, F.L. Wei and L.C. Qiu	1114
Development of a Combined Shape and Gauge Control Scheme Based on Function Φ X.P. Zhang, C.J. Zhi, R. Ren and X.Z. Du	1118
Characterization of Bolt Hole Residual Stresses for Assessing Structural Behavior of Truck Frame Rails K. Chinnaraj, M. Sathya Prasad and C.L. Rao	1124
High Efficiency Precision Surface Grinding of Fused Silica P. Yao, Y.D. Gong, S.X. Yuan, N. Yoshihara, J.W. Yan and T. Kuriyagawa	1132
Measurement of Dynamic Resistance in Resistance Microwelding of Insulated Copper Wire B.H. Mo, J. Qi, B.Q. He, P. Chen and Z.N. Guo	1137
Experimental Investigation on High-Speed Milling of Aluminum Alloys Y. Liu, L.T. Zhang and Z.H. Xu	1141
Chip Prediction in Finite Element Modeling of the Chip Formation Process during Cutting Ti-6Al-4V Alloy Y.G. Ye	1148
Investigation of Temperature Distribution in High-Speed End Mill Assisted by Heat Pipe Cooling Q.H. Song, H.W. Ju and W.X. Tang	1154
Mechanics of Design and Model Development of CVC-Plus Roll Curve J.Z. Xu, D.Y. Gong, Z.Y. Jiang, X. Liu and G.D. Wang	1158
Study on Combined Process of Micro-EDM and Electrorheological Fluid-Assisted Polishing Y.W. Zhao, D.X. Geng and X.M. Liu	1167
Effect of Ni-Coated Carbon Nanotubes on the Corrosion Behavior of Sn-Ag-Cu Solders S.Y. Tang, H.Y. Jing, L.Y. Xu, Y.D. Han and G.Q. Lu	1171
Impact of Heat-Treated Microstructure on Milling Performance of Ti-6Al-4V Alloy L.J. Pang and M. Tang	1175
Droplet Tracking in Double-Electrode GMAW Z.Z. Wang, Y. Yu, S.J. Chen and Y.M. Zhang	1180
Effect of Heat Input on Structure and Mechanical Properties of Low Matched Welded Joint in a 1000MPa Grade Steel Z.J. Liu, C.A. Wang, Y.H. Su, F.D. Zhao and L.C. Li	1184
The Research on the Algorithm of Rubber Parts Forming Die Dimension Based on Mid-Difference Value Method Z.R. Han, X. Geng, Z.B. Yuan and G.L. Wang	1188
Numerical Simulation of Fiber Orientation of Short Fiber Reinforced Polypropylene in Injection Molding H.S. Liu, A.H. Xiong, X.Y. Huang and J.M. Lai	1194
Characteristic Analysis of Grinding Point Movement in Grinding Aspheric with Arc Envelope Grinding Method X.G. Zhou, Q.S. Yan, J. Dai and L.Y. Kong	1202
Evaluation of Welding Residual Stress Based on Temper Bead Welding Technique X. Shi, Y.L. Zhang, J.P. Zhao and R.B. Gou	1208

The Effect of Preheating Temperature on the Microstructure and Properties of Copper by the Liquid Die Forging Technology G.R. Yang, W.M. Song, Y. Ma and Y. Hao	1213
Parametric Design of the Fish-Tail Die Channel Based on SolidWorks Z.L. Chen, H. Gao and F. Wang	1218
Microstructure Evolution and Numerical Simulation of DP Steel TWBs During Warm Tensile Deformation L.Y. Yue, Z.F. Huang, Z.L. He, M.G. Jiang and W. Chen	1222
Experimental Investigation of Surface Roughness in High Speed Turning of Hardened AISI P20 Steel B.D. Cui	1228
Research on Roll Force for Variable Gauge Rolling G.J. Zhang and X. Liu	1232
Prediction and Investigation of Surface Quality in High Speed End-Milling of Silicon to Eliminate Conventional Finishing Operations A.K.M.N. Amin, M.D.M. Ismail, M.I. Musa and A.U. Patwari	1237
Effect of Brazing Temperature and Clearance on Microstructure and Mechanical Properties of 316L Stainless Steel Brazed Joints Z.J. Chen, C.J. Yang, X.L. Gu, C.D. Wu and L.L. Feng	1242
Exploration on Continuous Extrusion Process Originate from Friction for Polymer Z.X. Fan, B.S. Mu and D.C. Barton	1246
The Dimension Accuracy Analysis of Multi-Wire Flat Rolling Process W.S. Lin, B.Y. Lee, Y.C. Hsu and J.C. Lin	1251
Strain Hardening Analysis Coupled to Remeshing Procedure Application to Sheet Hydroforming Processes S. Faouzi, A. Cherouat, A. Ayadi and M.A. Rezgui	1255
Effect of Temperature on Shear Strength of Adhesively Bonded Joints for Automobile Industry P. Hu, X. Han, L. Li, Q. Shao and W.D. Li	1259
The Research of Characteristic Agent Used in Cold Bending Centre Sill D.Z. Li, G.C. Li and L. Wang	1266
Research of Die Cavity Warm Extrusion on 3Cr2W8V Steel One-Off Forming Technology W. Du, G.S. Yuan and C.B. Li	1270
Constitutive Equation of ZL201 Alloy during the Semi-Solid Thixotropic Compression S.Z. Shang, X.L. Tang, G.M. Lu, W.N. Zhang and J.J. Wang	1274
Mechanical Properties of Aluminium-Alumina Welding by Friction Welding T. Mingmuang, S. Lee and C. Thinvongpituk	1279
Multi-Cutting Passes for a Fine-Cut Wire Electro Discharge Machining of Stainless Steel S. Sabudin, I.C. Lie and E.E. Mohamad	1288
Experimental Investigation and Analytical Calculation of the Bending Force for Air Bending of Structured Sheet Metals V. Malikov, R. Ossenbrink, B. Viehweger and V. Michailov	1294
The Production of Poly(L-lactic acid) from 2-Steps Direct Polycondensation in 100 Kg Scale S. Pivsa Art, S. Niamlang, W. Pivsa-Art, S. Pavasupree, K. Ishimoto and H. Ohara	1301
Experimental Investigations of the Machinability of Titanium Alloy TC4 with Different Hydrogen Contents J. Hu, Y.J. Bao, H. Gao and K.X. Wang	1307
Vibration Analysis of Single Lap Adhesive Joint with Non-Uniform Adhesive Thickness: Experimental and Analytical Investigation W.D. Li, J.X. Gu, P. Hu and K.Y. Wu	1312
Effect of Cooling Rate on Microstructure of Simulated CGHAZ for Modified High-Cr Ferritic Heat-Resistant Steel X.J. Di, D. Xu and Y.C. Liu	1320
Study on Deformation Coordination in Upsetting Forging Process of the Crank of Continuous Fiber Crankshaft for Marine B. Wang, B.F. Guo, M. Jin, W.C. Zhao, S.Y. Zhao and Z.Y. Zou	1324
Large Scale Molecular Dynamics Simulation of Femtosecond Laser Ablation of Silicon Using Sensing-VISICOM G. Liu and Y.P. Yao	1330

Study on Parameters Optimization of Ceramic Machining Process Q. Wang, Y.Y. Zeng and X.G. Min	1338
Techniques Study on PcBN Cutting Tool Dry Turning Chilled Cast Iron Y.H. Jia, Z.Q. Ye, H.Z. Wang and H.W. Jing	1342
The Mixing Condition and Mechanical Property of Friction Stir Welded Dissimilar Formed 3003 and 6061 Al Alloys X.D. Xu, X.Q. Yang, G. Zhou and B. Tan	1346
Development of Experimental Devices for Tube Hydro-Forming H.S. Rong, L.F. Yang and X.C. Mao	1351
Experimental Study of Vibratory Turning with Low Frequency of the Mechanical Vibration Device and on the Surface Texture J.L. Song	1355
Optimization of Parameters and Research on Joint Microstructure of Resistance Spot Welding of 201 Stainless Steel H. Liu, H.D. Wang, X.Q. Zhang and C.W. Li	1359
The Influence of N Values on Sheet Metal Deep Drawing Based on Different Blank Holder Forces J.Q. Qian, J.P. Chen and H.F. Qian	1364
Corrosion Behavior of 6082-T6 Al Joint Welded with Twin Wire MIG Y. Ruan, X.M. Qiu and W.B. Gong	1368
A Novel Material Preparation of Density Ceramics and Fibre Joining Y.N. Zhao, S.J. Gao, G.Q. Hou and W.L. Zhang	1375
An Automatic Control System Based on Arc Voltage of TIG Welding W.P. Gu, Z.Y. Xiong and W. Wan	1379
PZT Thin Films from Bulk PZT for Vibration Power Harvester Applications Y. Deng, Y.G. Li, C.S. Yang, J.Q. Liu, D.N. He and S. Sugiyama	1383
Gas Forming a V-Shape Aluminum Sheet into a Trough with Contour Like the Back of a Twin-Hump-Camel J.Y. Wang, S. Lee, J.J. Huang, H.C. Lan and C.C. Hsu	1387
Electrochemical Behavior of Welded Joints with 308L Stainless Welding Wire and Low Temperature Transformation Welding Wire S. Zhao, H.Y. Jing, Y.D. Han and L.Y. Xu	1392
Effect of Metal Inert Gas Welding on Microstructure and Mechanical Properties of Al-Zn-Mg Alloy F. Wang, B.Q. Xiong, Y.A. Zhang, H.W. Liu, Z.H. Li and X.W. Li	1396
Principle of the Continuous Variable Cross-Section Recycled Extrusion (CVCE) Process Q.J. Wang, P.P. Zhang and C.R. Liu	1400
Study of Combined Process in Micro-EDM X.Y. Chu, P. Li, W.D. Xue, C. Meng and G.X. Chi	1405
Investigation on Formability of AISI 304 Circular Cups by Warm Deep Drawing N. Ethiraj and V.S. Senthil Kumar	1410
Impact of Cutting Tool Geometric Parameters on Milling Titanium Alloy TC4 Y.H. Lou, J.Q. Zou, J.Y. Huang and Y. Jin	1418
Effect of Current on the Interfacial Structures of the Dissimilar Metals Diffusion Bonding L.F. Hu, F.M. Wang, S.P. Chen and Q.S. Meng	1423
Surface Roughness Prediction in Ball-End Milling Process for Aluminum by Using Air Blow Cutting K. Karunasawat and S. Tangjitsitcharoen	1428
Static Recrystallization and Precipitation Behaviors of Weathering Steel for Bridges H.Y. Wu, X. Liu, L.X. Du and Y.M. Zhao	1435
Elastic Deformation Predicting Design and Numerical Simulation for an Asymmetry Multi-Mandrel Aluminum Extrusion Die J.Y. Pan, Z.Y. Zhou and S.B. Dong	1439
Preparation and Properties of UV-Curable Adhesives Based on Epoxy Acrylate Prepolymers Y.C. Chen, T. He, W. Yang, L.Q. Zhu, W.P. Li and H.C. Liu	1444
Optimization on Resistance Microwelding Procedure of Fine Copper Wire Based on Orthogonal Experiment Design P. Chen, Z.N. Guo and B.H. Mo	1448

Mechanical and Electrical Properties of Graphite/Carbon Fiber/Phenolic Resin Composite M.D. Li and D.M. Liu	1452
Numerical Simulation of Thixo-Diecasting Al6061 Alloy Automobile Part S.Z. Shang, J.J. Wang, G.M. Lu, W.N. Zhang and X.L. Tang	1456
The Failure Mechanism of Cemented Carbide Milling Insert during Machining Difficult-to-Cut Metal B.J. Sun, J.F. Wang and Z.C. Wang	1460
BP Neural Network Model for Seam Tracking Offset during High-Power Fiber Laser Welding L. Mo, X.D. Gao, Q. Wen and D.Y. You	1464
Hot Forming Behavior and Flow Stress Model of Steel 50A1300 X.D. Zhou and X.R. Liu	1468
A New Algorithm for Solving the Best-Fit Sphere of Optical Aspherical Surface J.Q. Lin, J.S. Yang and M.M. Lu	1472
Design, Development & Experimental Investigation of Electro-Discharge Diamond Surface Grinding of Ti-6Al-4V M. Modi and G. Agarwal	1478
Development of Tooling Cost Model for High Speed Hard Turning E.Y.T. Adesta, M. Al Hazza, D. Agusman and A.G.E. Sutjipto	1482
FEM Prediction of Welding Residual Stresses and Temperature Fields in Butt and T-Welded Joints A. Razavi, F. Hafezi and H. Farrahi	1486
Effect of Temperature on Microstructure and Mechanical Properties of 316L Stainless Steel Brazed Joints X.L. Gu, C.J. Yang, Z.J. Chen, C.D. Wu and L.L. Feng	1494
Effects of Thickness Ratio on Interface Characteristic and Mechanical Properties of Ti/C Laminated Composites W.Y. Long and P.P. Li	1498
Machining a Micro-Scale Structure Using an in-House Developed Miniature Machine Tool A.S. Syaimak	1502
Effects of pH on the Growth of ZnO Nanorod Arrays in Aqueous Solution C.M. Zhang, T. Meng, Y.P. Hao and Q. Chen	1507
Study on Dynamic Mechanical Properties of n-HA/PA66 Composites L. Cheng, X. Zhang and Y.B. Li	1511
Method of Analyzing the Size of Voids Beneath Rigid Pavement Slabs Y.H. Zhong, B. Zhang, M.M. Ren, C.C. Guo and C.C. Xia	1516
Microstructure and Mechanical Properties of Friction Stir Welding Joint of Pure Copper Y. Zhao, Y.L. Ye, K. Yan and L.L. Zhou	1520

Chapter 4: Laser Processing

Process Optimization and Properties of Laser Cladding High Speed Steel Coatings on Nodular Cast Iron J.B. Lv, Z.Y. Wang, X.W. Wang and C.S. Liu	1527
Ni₃Al-Base Alloy of Laser Welding Behavior Research D.Y. Zhang, H.Y. Gao, K. Lu, H.L. Luo and S.P. Li	1531
Effect of Scanning Path on the Thermal Stress of Titanium Alloy in the Laser Cladding Z. Ren, Y.L. Tian, M.Y. Zhou, H.Y. Zheng and S. Zhang	1538
Passive Laser Assisted Bending of Ultra-High Strength Steels A. Järvenpää, L.P. Karjalainen and K. Mäntyjärvi	1542
Study on the Straight Edge Diffraction Effects of Base Model Gaussian Laser Field X.M. Xiong, C.B. Huang and W.T. Zhang	1548
Landslide Risk Assessment Expert System Along the Oil and Gas Pipeline Routes P.C. Wang, Z.Y. Xu, M.Z. Bai, Y.Q. Du, S.H. Mu, D. Wang and Y.J. Yang	1553
Effects of Hot Extrusion Processes on Grain Size of ZK60 Alloy Tubes H.C. Liang, J.Z. Cui and Z.T. Wang	1560
Epitaxial Growth of Ni-Based Superalloys Using Laser and Spark Deposition E. Costa Santos, K. Kida, J. Rozwadowska, M. Kidera and C.J. Chen	1564

Study and Design of Human-Machine Interface System for Embedded CNC Precision Internal Grinder	
Z. Yin, H. Li, Y. Li and O. Xie	1570

Chapter 5: Powder Metallurgy and Plastic Deformation

Magnetic Abrasive Finishing – A Review	
M.G. Patil, K. Chandra and P.S. Misra	1577
Mn_xZn_{1-x}O Crystal Synthesized by Hydrothermal Method	
W.L. Zheng, S.X. Wang and Z.W. Li	1582
Strain Analysis of NC Incremental Sheet Metal Forming	
L.R. Zhou	1586
Purification of Metallurgical Grade Silicon by Slag and Acid Leaching Treatment	
F.L. He, X.P. Ren, H.R. Cheng and C. Chen	1590
Effect of Heating Temperature on the Microstructural Evolution of Al-5.8%Zn-1.63%Mg-2.22%Cu-0.12%Zr Gas Atomized Powders	
F.X. Li, Y.Z. Liu and X. Luo	1595

Chapter 6: Friction and Wear

Effects of Annealing Technique on the Microstructure and Mechanical Properties of AZ31B Magnesium Alloy Sheets	
H.Q. Liu, Z.L. Mi, D. Tang and S.B. Wei	1601
Theoretical Investigation on Prestress during the Manufactural Process of Integrated Multilayer Wrapped Pressure Vessel	
X.Q. Zhu, N.J. Li, Z. Wang, Y. Yang, H.B. Yang and H.Y. Zhao	1608
Investigation of Crack Initiation and Propagation during Rolling Contact Fatigue of SUJ2 Steel Bearings Using a Newly Developed One-Point Testing Machine	
J. Rozwadowska, K. Kida, E. Costa Santos, T. Honda, H. Koike and K. Kanemasu	1613
Influence of Vibration on the Heat Transfer of Lost Foam Casting Filling	
Z. Zhao and Z.T. Fan	1618
Simulation to Static Recrystallization of Nb Micro Alloyed Steel by Cellular Automaton	
Y. Zhi, X. Liu and Z.F. Wang	1622
Wear Resistance Improvement of Titanium Bearings by Laser Gas Nitriding	
E. Costa Santos, K. Kida, J. Rozwadowska, T. Honda, H. Koike, Y. Kashima, K. Kanemasu and R. Matsumoto	1629
Study on Ultra Fast Cooling Technology in Hot Strip Mill	
L.G. Peng, X.M. Zhao, D. Wu, Y. Gao, Z.P. Zhang, Y. Liu, L. Sun and D.H. Yu	1635
Numerical Simulation on Electron Beam Welding Temperature Field of Al-Li Alloy	
S.G. Wang, K. Yu and L. Xing	1640
Evaluation of Non-Uniform Deformation of Multi-Layered Ceramic Sheets with Printed Electrodes during Compression	
F. Naruse and N. Tada	1647

Chapter 7: Waste-to-Energy, Waste Management and Waste Disposal

Treatments of Magnesium Slag to Recycle Waste from Pidgeon Process	
F.L. Han, Q.X. Yang, L.E. Wu and S.W. Guo	1657
The Feasibility Analysis of Ice Making System Driven by Liquid Nitrogen Engines and Heat Source is Diesel Exhaust	
G.J. Yuan and X.N. Miao	1668
Wax Formation Study by the Pyrolysis of High Density Polyethylene	
C.R. Luo, F. Ding, H.R. Zhang, L. Xiong, H.J. Guo and X.D. Chen	1673
Non-hydrogen Catalytic Dewaxing for Oil Production	
J. Li, L. Xiong, F. Ding, H.R. Zhang and X.D. Chen	1677
Relating Analysis of Multi-Parameters of Constructed Wetland	
L. Zheng, H. Li, A.Z. Ding and Y.L. Liu	1682

Influence of Refractory's Poisson's Ratio on the Stress Field of COREX Gasifier Top W.D. Xue, X.X. Huang, J. Xie and Q. Ding	1686
Ultrasonic Characteristics of the Ultrasonic Grinding Process about the Nano-Ceramic Plate M. Zhang, Y.Q. Wang and F. Jiao	1690
Exact Traveling Wave Solutions to a Model for Solid-Solid Phase Transitions Driven by Configurational Forces C.H. Guo, X.D. Liu and S.M. Fang	1694
Analysis of Heat Transfer and Straightening of Continuous Casting Slab Using 3D Finite Element Method Q.G. Liu, X.Z. Zhang, Z.Y. Jiang, Y.C. Sun, B.J. Shi and N.R. Shen	1698

Chapter 8: CAD/CAE/CAM

Application of Machine Vision in Grading and Identification of Grafting Seedlings Y. Wang, S.B. Tian and L.C. Qiu	1705
An Approach to Analyze Pose Accuracy of Master Slave Surgical Robot with Matlab J.Y. Zhang, W. Wang, C. Zhao and H. Zhang	1709
Comparison of Three Hydraulic Unloading Schemes for a Screw Press S.Q. Cai, X.H. Pan, F.N. Li and L.L. Peng	1717
Semi-Continuous Extraction of Agarwood Oil with Subcritical Water: Optimization of Plug Flow by Response Surface Methodology A. Apibalsri, S. Tantayanont and S. Ngamprsertsith	1721
Experimental Study of Light Intensity on I-V Characteristic of Single Crystalline Silicon Solar Cell T. Meng, C.M. Zhang, C. Liu and S.S. Meng	1725
Micro-Machined Variable RF Capacitor Based on Glass Substrate M.X. He, X. Lu, X. Chen, X. Ling, Y. Li, H. Wang and G.F. Ding	1729
Fractal Study on Blank Residue of Mould Cavity H. Shen, Y.J. Cai and X. Pan	1734
Classification of Fresh N36 Pineapple Crop Using Image Processing Technique S. Mohammad, K.H. Ghazali, N. Che Zan, S.S. Mohd Radzi and R. Abdul Karim	1739
Finite Element Analysis of Axial Stiffness of Extruded Sealing Ring Used in Aviation Engine Y. Wang, J.F. Xu, W. Cong and J.C. Zhang	1744
Vibration Modal Analysis of Involve Gear with Asymmetric Tooth Profile and Double Pressure Angles W. Li, N. Liu, N. Li, Y.J. Liu and L. Ma	1748
Neodymium-Iron Garnet Crystallite and its Magnetism Prepared by a Hydrothermal Method X. Ding, Y. Zhou, Z. Xia and H.R. Liu	1752
Design of Temperature Control System Based on Fuzzy PID J.W. Li, C.F. Yan and J. Liu	1756
Development and Application of YS Silver Catalysts for Ethylene Epoxidation X.F. Li, J.B. Li, J.S. Chen, Z.X. Zhang, W.J. Dai, B.L. Cui and Q. Lin	1760
Hardness and Impact Toughness of Niobium Alloyed Austempered Ductile Iron B. Abdullah, S.K. Alias, A. Jaffar, R.W. Freddawati and A. Ramli	1768
Experimental Study on Improved Phase-Shift Control Soft-Switching Converter Y. Yu, C. Ma and W.B. Ma	1772
Kinematics Analysis and Precision Design for a 2-DOF Spatial Mechanism Z.J. Xie, X.H. Liu and D.P. Song	1776
Numerical Study on Ventilated Supercavitation Reaction to Gas Supply Rate G.H. Gao, J. Zhao, F. Ma and W.D. Luo	1781
Analysis and Simulation of Strong Earthquake Ground Motions Using ARMA Models A. Menasri, M. Brahimi and A. Bali	1786
Stress Analysis and Life Estimation of Staged Prestressed Combined Cavity Die Z.P. Lv, X.H. Ma and S.Z. Zhou	1796
Pressure Pulsation System in Electro-Hydraulic Control Valve of Engineering Mechanical X.Z. Kong and F.Y. Zang	1800

New Method for Measuring Liquid Level in WFGD System L. Li, Z.H. Tan and J.W. Liu	1804
Microstructure and Properties of Roller Surface Alloyed by Laser L. Feng and Q.B. Liu	1808
Supply Chain Quality Information Management Methodology and Application System Research X.X. Zhao and Y.M. Zhu	1812
Dynamic Analysis of Motorcycle Engine Rod Bending and Fracture Failure C.D. He	1817
Simulation and Application of Fuzzy Control System with Integrator P. Li, C.F. Yan, L.K. Zeng and X.S. Cheng	1825
Research on Thermal Analysis of Pillow Spindle System with Multi Axes Rotary Spindle Head C. Hao and J.G. Huang	1829
Application of Desulfurization Additive in Desulphurization System for 600MW Units L. Li and B. Zeng	1834
The Measurement Method to Position Coordinates of Movable Platform for 3-TPT Parallel Machine Tool J.Y. Guo, Y.C. Liu, Z.Q. Sheng and L. Zhao	1839
Study on Automobile Engine Vibration Test Based on LabView Software Z.C. Yang and Z.W. Deng	1843
Investigation of Ion Transport and its Effect on the Photovoltaic Performance in the Quasi-Solid State Dye-Sensitized Solar Cells Y.F. Tian, Z. Chen and S.J. Li	1847
Machining Process Analysis and Parametric Programming of Parts with Complex Surfaces B.W. Wang, B.S. Xu and Y.H. Sun	1851
Research on Porous Sprayer for Refining of Aluminium Melt C.G. Hao, D.Z. Li and J.M. Zeng	1856
Humidity Sensing Property of Mesoporous Indium Oxide W. Huang, J.C. Tu, Y. Cao, X.H. Wang, J. Li and K. Xiao	1860
Responses and Optimization of a PID-Based Speed Regulating System of the Planetary Mixer M.J. Yang, X.W. Li, Z.G. Wang and T.L. Shi	1865
Conductivity Studies on $\text{Li}_{1-x}\text{Al}_x\text{Ti}_{2-x}(\text{PO}_4)_3$ ($x=0.0-0.5$) Due to the Addition of Al^{3+} Trivalent Cation M. Hamidi, S.N. Mohamed and M.Z.A. Yahya	1869
Effect of Vortex Generators on Aerodynamic Characteristics of a Car X. Yan, J. Ye, Z.M. Zhao, X.J. Hu and L. Liao	1873
Research of Inspection System Based on Machine Vision for Steel Rod Surface Defects J.C. Zhang, W.B. Li and C.H. Lu	1878
Status and Development of the Flexible Manufacture Technique with Direct Spinning of the Polyester Textile Fibers in China J.M. Xu, L. Bai and X.H. Guan	1882
Suppression of Chatter Vibration by Fuzzy Sliding Mode Control in Machining Processes M.J. Ostad-Ahmad-Ghorabi, M.M. Zahery and S. Abbasy	1887
The Research of CAD System in Three-Plate Parallel Indexing Cam Mechanism F. Xu, Y.H. He, W. He and H.T. Li	1896
Machinability Evaluation of Difficult-to-Cut Materials Based on Variable Processing Cost per Unit Material X. Li and J.T. Wu	1900
The Modeling Study of Active Power Filter Based on Adaptive Notch Filter M.Y. Zheng, W.N. Yu and Y.Q. Xu	1906
Fabrication of Metal Micro Needle Array by LIGA Process W.Q. Bai, Y.G. Li, C.S. Yang, J.Q. Liu, D.N. He and S. Sugiyama	1911
Interval Granules in Incomplete Information Systems X.H. Chen, R.P. Li and Z.W. Zhang	1915

A Case-Based Reasoning Combined with AHP Wighting for Cutter Conceptual Configuration Prediction Model	1919
X.Y. Wang, J.Q. Liu and W. Guo	
A Inductive Accelerator Based on UV Lithography of SU-8	1925
B.Z. Zhang, X.H. Li, Y. Zhang and X.J. Meng	
Experimental Research on TC4 Alloy by Laser Shock Processing	1930
F.J. Tian	
Effect of Axial Pressure and Tool Rotation Speed on Temperature Distribution during Dissimilar Friction Stir Welding	1934
R. Padmanaban, V. Balusamy and V. Ratna Kishore	
Design and Optimization of Expert Database System for Cast and Roll Production of Copper Tubes	1939
Y.M. Meng and J.S. Liu	
Design Research on Feeding Paper Machine of Printing Press	1944
Q.Y. Sun, D.C. Zhang, Y. Cheng and X.Y. Li	
Study on the Shape of Occurrence and Developing of Evaporation Wave in Short Pipe	1948
W.M. Liu	
Analysis of Aperture Phase Errors Using Interval Method	1953
H.B. Ma, X.F. Xu and L.W. Song	
Research of Collision Probability and Teaching Platform for Wireless Network Transmission Interference Analysis	1960
X.Y. Jin, S. Chen, D.P. Wu and L.R. Jiang	
Drainpipe Network Management Information System Design Based on GIS and DSS	1964
L. Liu and D.A. Zhao	
Study on Shaped New Technology of Tractor Clutch Gears	1969
J.W. Yu	
Automatic Matching Based on Dynamic Threshold in Close-Range Photogrammetry	1973
Q.Q. Zhang, M.L. Dong, P. Sun and J. Wang	
Study of Backwashing Process for Ceramic Micro-Filtration Membranes Used in Pretreatment of DMF Wastewater	1980
P.W. Xu, W.Q. Huang, Q. Zhang, B.Z. Yang and J. Zhong	
Virtual Assembly of Product and Assembly Procedure Planning Based on Morphological Analysis by Matrix	1984
L.Z. Gu, P. Li and T.M. Xiang	
Research on Boom-Type Roadheader Vibration Testing Based on the LabVIEW	1988
L.J. Zhao, X.M. Lv and W. Tong	
Research on Opening and Closing Process for Outdoor Vacuum Circuit Breaker Contacts	1992
S.B. Jiang, Y. Zhang, S. Liu and X. Zhao	
The Development of Breakout Prevention System by Logical Judgement	1996
L.G. Sun, H.R. Li and J.Q. Zhang	
Surrounding Rock Stress and Deformation Evolution Character Analysis of Circular Openings in Deep Underground Engineering	2001
A.P. Yuan, M.W. Ji and D.Q. Deng	
Research Analysis and Experiment Study on Flow Field of Hydrodynamic Coupling	2006
R. Zhang, C.J. Sun and Y. Wang	
Impact of JIT and TQM Strategies on Searching for Health Information and Ensuring Service Quality in Hospitals	2012
T.S. Kuo, C.H. Lan, S.H. Chen and S.H. Lin	
Ergonomic Analysis of the Master of Minimally Invasive Surgical Robot	2018
Q.B. Zhang, C. Zhao and X.M. Luo	
Influence of Different Pore-Forming Mechanism on Superfinish Grinding Tools	2024
Z.G. Zhang, Y.M. Zhu and Z.H. Li	
Change Detection of Coastal Landscape Pattern Using GIS: a Case Study of Tianjin Binhai New Area	2032
F.X. Gu and W.B. Liu	
A Combined Modeling Method Based on Multiple-Sensor Integrated Measuring System for Reverse Engineering	2036
P.X. Liu, X. Liu and M. Li	

Influence of Thermal Behavior of Spindle on Machining Accuracy in Micro-Endmilling O. Horiuchi, M. Nomura, B.X. Ma, T. Shibata, Y. Murakami and M. Masuda	2040
Simulation on Anode Electric Field Intensity about Electrochemical Jet Machining C.G. Zhang, F.H. Zhang and C.G. Zhang	2046
Structural Analysis of Mechanism with Compound Hinges in Ordinal Single Opened Chain Theory H.B. Xin, Q. Huang and Y.Q. Yu	2050
Analysis and Optimization of the Static and Dynamic Characteristics of Head Frame Y.L. Wang, N. Jin, K. Liao, R.J. Guo and H.T. Feng	2055
The Effect of Helical Gear Parameters on the Meshing Noise W.L. Li, L.Q. Wang, X.L. Zhao and G. Chen	2060
Parameters Optimization and Theoretical Analysis on Duckbill-Type Device for Sugar Beet Paper Pot Seedling Transplanting B.F. Lu and J. Yang	2065
Optimization Design of Kinematics Performance of High-Speed Spatial Parallel Coordinate Measuring Machine X.L. Chen, Q. Gao and W.M. Feng	2070
Study on Narrow-Gauge Traction Locomotive Control System J. Zong, Y. Ruan, M.H. Chen and L.B. Xu	2074
Review on Construction Method of Subway Station W. Li	2078
Development of Nanomaterials Electrochemical Biosensor and its Applications Q. Xiang, Y. Gao, J.Q. Liu, K.Q. Wang, J. Tang, M. Yang, S.P. Wang and W.L. Wang	2082
Study on Dynamic Simulation Technology of Polar Coordinates Wafer-Handling Robot Z.H. Sha, M.Z. Zhang and S.F. Zhang	2086
Research on Steel Cord Belt Electromagnetic Testing Real Time Monitoring Technology Z.Q. Ji and L. Huang	2090
Influencing Factors on Dynamic Response of Hydrostatic Guideways Z.W. Wang, W.H. Zhao and B.H. Lu	2095
Body Fitted Grids Based FVM Simulation of Aluminum Extrusion Process R. Wang	2102
Modeling and Simulation of Electromechanical Coupling Dynamics for Permanent Magnet Synchronous AC Servomotor X.X. He, J.G. Li and Y.H. Pang	2106
Coupling Control and Analytical Model of the Shaker on a Centrifuge Y.Z. Wang, X.M. Yuan and R. Sun	2110
Annual Runoff Prediction Based on Least Square Support Vector Machines-Markov Chain Combined Model X.P. Zhou, C. Zhu and T.X. Li	2114
Composite Measurement Method Based on Computer Vision Technology P. Zhao, Y.K. Li and S.L. Xie	2118
Cost Modeling and Simulation for Mining Mechanical Equipment Undergoing Maintenance W.H. Yue, X.J. Wang and L.P. Huang	2122
Research Advance of Electrochemical Sensor Fabricated with Nanomaterials and their Application Y. Gao, Q. Xiang, J.Q. Liu, Q.Q. Wang, J. Tang, S.W. Yang and J. Wu	2126
Fluiding Characteristics of Pulverized Coal in Fluidization & Injection Jar C.Y. Song, Y.L. Gui, Y. Shi and B.S. Hu	2130
The Primary Processing of MEMS Devices and Applications Analysis K. Chen, L.Q. Fang and H.K. Wang	2134
Study on Cavitation Mechanism of Pulse Electrochemical Compound Machining C.G. Zhang, F.H. Zhang and C.G. Zhang	2139
The Learning Styles of Taiwanese Mechanical Engineering Students C.M. Hsiung and C.C. Lin	2143
Research on Micro Electrical Discharge Milling Technology of Miniature Thin-Walled Impeller L.Y. Zhang, Y. Yang, J.G. Wang and C. Wang	2147

Abrasive Jet Polishing of Micro Groove Using Compound SiC Abrasives with Compound Additives	
F.C. Tsai, S.C. Yang, T.F. Mao, C.J. Chen and S.S. Liou	2153

Chapter 9: Product Design and Development

Design of Active Phased Array Antenna in Wind Profiling Radar	
M.B. Hu, G.G. Zheng and H.B. He	2161
The Creative Design of Injector Clamping Mechanism	
W.C. Zhou and D.M. Liu	2166
Digital Jacquard Fabric Design with Visual Illusion Effect Based on Half-Backed Structure	
J. Zhou, J.Y. Liu, L.Q. Tang and D.T. Hu	2170
An Incremental Innovation Design Process Model Based on TRIZ	
F. Yu, H.G. Zhang, R.H. Tan, H. Jin and Y.Q. Dong	2174
Reliability Assurance Measures of CNC System Software	
H.B. Zhang, G.D. Liu and H.M. Zhao	2182
Controlled Release of Tablets Containing Poorly Water Soluble Model Drug Coated with Kollicoat MAE 30DP	
S. Lemke and M. Kumpugdee-Vollrath	2186
Function Modeling, Solving and Simulation Based on Effect in TRIZ	
G.Z. Cao, H.X. Guo, T. Liang and R.H. Tan	2190
Modal Analysis of the Hydraulic Retarder Shell	
X.F. Zhao, C.Y. Li, X.W. Li, F.Y. Xu, Z.W. Mai and Y. Qiu	2195
Hedonic Price Analysis on Mobile Phone Market	
X.H. Zhang, L.Y. Fu and H. Zhang	2200
Modular Decomposition of Flow Chart Path Method and its Application	
M.Q. Li and D.Y. Li	2206
Innovative Design of a New Differential Brake	
W.C. Zhou and F.F. Zhou	2211
Design Principle and Method of Visual 2.5D Effect Black-and-White Digital Jacquard Fabric	
J. Zhou, L.Q. Tang, D.T. Hu and J.Y. Liu	2215
Application Research of SWOT Analysis in Enterprise Patent Portfolio Strategy	
J. Zeng, H.G. Zhang, Y.Q. Dong, R.H. Tan and F. Yu	2219
Design of Injection Mould for Back Shell of Radio	
C.W. Wang, X.F. Mao and Z.Q. Mo	2226
Increasing Solubility of Poorly Water Soluble Drug Resveratrol by Surfactants and Cyclodextrins	
M. Kumpugdee-Vollrath and Y. Ibold	2231
Design and Development of Non-Ironing Fabric of Cotton/Fractal Polyester Twisted Yarn	
J.Y. Zhang	2235

Chapter 10: Other Related Topics

Research on Kraft Pulp Delignification of Bamboo (<i>Neosinocalamus</i>)	
P.Y. Li, M.Y. Zhang, X.X. Xia and C.T. Lin	2241
Study on Application of Characteristics of the Decorating Material in the Interior Space Design	
M.L. Zhang and W.P. Hu	2245
Bifunctional Pt-Molecular Sieve Catalysts for Hydroisomerization of Long-Chain Olefins	
F. Ding, C.R. Luo, H.R. Zhang, L. Xiong and X.D. Chen	2250
Study of Test Site Construction for Passenger Car Working in Low Temperature	
C. Mi, D.M. Han and X.H. Zhao	2255
Impregnation of Ru(cod)(tmhd)₂ into PDMS Film in Supercritical Carbon Dioxide	
M.L. Ge, F.C. Ding and C. Erkey	2260

Effect of Voltage Pattern on Intensity of Electromagnetic Emission during Electric Flame-Off Process of Ball Bonding Machine S. Puapairoj and C. Sa-Ngiamsak	2265
Performance Test Specification for Passenger Car in Low Temperature C. Mi and D.M. Han	2272
Color Prediction for Weft-All-Coloring Jacquard Fabric Based on the Two-Constant Kubelka-Munk Theory H. Zhou, C.Y. Wang and J. Zhou	2278
The Research of the Equipment Manufacturing Industry Development Strategy of Fuxin Y.Z. Liu and G.B. Lu	2282
Contributions of Microorganisms to Nitrogen Cycle of Wuyiling Wetland in Yichun in Northeast China J.G. Li, Y.B. Ren, N.Q. Ren, C.W. Yang, C.S. Zuo, Z.M. Jin and Y.Q. Shao	2286
The Study of Power Unit of a Wind-Magnetic Water Heater X.H. Liu	2290
Effect of Chlorination Conditions on Amount of THMs J.G. Li, H. Sun, C.W. Yang, Y.Q. Shao, Z.M. Jin, C.S. Zuo, N.Q. Ren, Y.X. Yuan and T.Q. Zhang	2294
Ecological Safety Analysis and Statistics Measures of Wuyiling Wetland in Yichun in Northeast China J.G. Li, H. Sun, Y.B. Ren, N.Q. Ren, C.W. Yang, C.S. Zuo, Z.M. Jin and Y.Q. Shao	2298
Enzymatic Degradation of Polyester-Nanoparticles by Lipases and Adsorption of Lipases on the Polyester-Nanoparticles M.M. Ma, L.Y. Wang and H.Y. Zhu	2302
Study of Fire Control Safety of High-Rise Building and Countermeasures Q.H. Wang	2308