

Table of Contents

Preface, Organizing Committees and Sponsors

Chapter 1: Material Science and Technology

Effect of Particle Size and Vacuum Sintering Temperature on Phase Composition and Mechanical Properties of WC-12 wt% Co Hardmetals S.H. Chang, C.W. Lee, K.T. Huang and M.W. Wu	3
Optimization of Organic Fibres%[Kevlar/Arobocel/Acrylic] in NAO Brake Pad Application and its Effect on Thermal Stability & Friction Characteristics M.A.S. Balaji and K. Kani	8
Influence of Heat Treatment and Deformation on the Phase-Structural State of Steel 30CrMnSiA M. Skakov, G. Uazyrkhanova, N. Popova and M. Sheffler	13
Fabrication and Properties of Poly(Ether Imide)/Poly(Vinyl Alcohol) Composite Ultrafiltration Membrane W. Chinpa	18
Luminescent Properties of Eu³⁺-Doped BaGd₂ZnO₅ Phosphors for White LED H.M. Noh, H.K. Yang, B.K. Moon, B.C. Choi, J.H. Jeong, K.W. Jang, H.S. Lee and S.S. Yi	22
Superplasticity of a Ti-48Al-2.3Cr-0.2Mo Alloy J.H. Zhang, G.H. Xu, Y.J. Xu and Y.H. He	27
New Usage for Cyclotrimerization Reaction: A Facile Synthesis of 1,3,5-Triazine Derivatives M. Ouyang, C.H. Yu, N.Y. Zhang, Q.B. Song, J.W. Sun, B. Hu and C. Zhang	32
Preparation and Microwave Absorption Property of Nickel Spinel Ferrite Y. Liu, X.X. Liu and Z.Y. Zhang	36
Influence of Silicon Texturization on the Photovoltaic Properties of CuPc/n-Si Hybrid Solar Cells Z.F. Liu and Y.T. Liu	40
Typical Materials' Abrasion Rules and Failure Lives Prediction of Key Parts for Breech Mechanism Based on Virtual Prototype H.B. Hu, L.J. Cao, X.W. Cao, S.X. Chen and Y. Sun	45
The Effect of Chromium, Titanium and Aluminum on the Friction Coefficient and Wear Property in the Nitride Coatings L. Han, L. He and D.L. Liu	49
Application of CIEDE2000 Color Difference Formula in Jet Fuel Silver Strip Corrosion Color Recognition L.P. Tong, B. Peng, Y.W. Fei and H.W. Yang	54
The Research of Gas-Sensing and Optical Characterization of Chlorinated Metallic Porphyrin Spin-Coated Films W.Y. Yang, J.H. Xu, S.Y. Wang and Y. Chen	58
Study of Surface Roughness in Milling Carbon Fiber Reinforced Plastics Using PCD Tool Y.D. Zhang, H.H. Xiao and Y. Teng	63
Characterization on Primary Phase Morphology of Semisolid A356 Alloy during Isothermal Holding with Fractal Z. Liu and X.M. Liu	67
Study on the Copolymer Properties of Phenolic Resin-Epoxy Resin X.Y. Zhang	73
Low Temperature Preparation of ZrC Coatings on C/C Composite via Molten Salt Reaction S. Chen, H.F. Hu, Y.D. Zhang, C.R. Zhang and G.D. Li	79
The Study on the Ineffective Mechanism of Aluminum Alloy Spot Welding Electrode H.Y. Yu, H.L. Zhou, D. Liu and J.H. Hu	84
Crack Behavior of Si-Doped GaAs Crystals Grown by Pulling-Down Method Y.Z. Fang, M. Jin, Q.B. He, H. Shen, G.J. Jiang and J.Y. Xu	88

Effect of Titanium Oxide on Phase Transformation for Low Alloy High Strength Steel Welds	
C.X. Chen, H.F. Peng, P. Zhao, Y.Y. Li and L. Yan	92
Effects of Cold Deformation on Precipitation in Fe-18Cr-12Mn-0.48N High-Nitrogen Austenitic Stainless Steel	
F. Shi, X.W. Li, Y. Qi and C.M. Liu	97
Preparation of Hydrophobic Silica Aerogels from Industrial Microsilica and its Oil Adsorption Properties	
F. Shi, J.X. Liu, X.L. Dong, Z.W. Zhang, P.C. Du, X.J. Wang and X.X. Zhang	103
Preparation of (Ti, Al)C Ceramic Coating on Carbon Steel by Electrical Discharge Coating and its Properties Research	
G.L. Li, X.H. Jie and W. Luo	108
Synthesis and Characterization of Mesoporous Carbon Functionalized with Carboxylate Groups for a Promising Adsorbent	
Y. Chi, Y.J. Li and X.T. Li	114
Processing Parameters Optimization on Control of Residual Stresses and Distortion during High-Speed Milling of Thin-Walled Workpiece	
X.H. Jiang, B.Z. Li, X.Y. Zuo and J.G. Yang	118
The Interaction of Temperature and Bending Load on Structural Performance of Chinese Larch Wood	
H.B. Zhou, C.S. Hu and J.H. Zhou	122
Ac Susceptibility of $\text{Pr}_{0.5}\text{Ca}_{0.5}\text{Mn}_{0.99}\text{Al}_{0.01}\text{O}_3$ at Low Temperatures	
J.L. Wang, C. Qian, L. Yu and D.W. Qi	127
Balance Melting Point and Compatibility of Polypropylene/Syndiotactic1,2-polybutadiene Blends by Using DSC	
X.F. He, H. Zhang, T.J. Ge, X.Q. Zhang and C.Y. Zhang	131
Online-Joining of C/SiC-C/SiC via Slurry Reaction and Precursor Infiltration and Pyrolysis Process with C/SiC Pins	
Y.D. Zhang, H.F. Hu, C.R. Zhang and G.D. Li	135
Characterization of Welded Components Flaws Using an Ultrasonic Expert System Based on Static Patterns	
A. Zolfaghari, D. Shahriari and F. Masoumi	141
A New Deep Red-Emitting Mn^{2+}-Activated $\text{SrLaGa}_3\text{S}_6\text{O}$ Phosphor	
R.J. Yu, J.Y. Park, H.K. Yang, B.K. Moon, B.C. Choi and J.H. Jeong	145
Surface Integrity and Anti-Fatigue Mechanism of 30CrMnSiNi2A Steel with Shot Peening Treatment	
Z.M. Li, Y.L. Zhu, X.K. Du and K.L. Liu	149
An Empirical Relationship to Predict Damages in Carbon Fiber Reinforced Composites under Extreme Thermal Cycling Conditions	
F.N. Siddiqui, N. Saleh, A. Rahat, A. Israr and A.U. Rehman	153
Growth of GaAsP by Solid Source Molecular Beam Epitaxy	
G.C. Jiao, Z.T. Liu, F. Shi, L.D. Zhang, W. Cheng, S.F. Wang, Y.J. Zhou and Z. Miao	159
Temperature Field Analysis on CA Mortar Ballastless Track of High-Speed Railway	
J. Fu, Y. Qin, Y.Y. Yu, M.J. Ye and L.X. Li	163
The Influence of Ni and Cr on the Primary Austenite Dendrite in D-type Graphite Cast Iron	
D. Chu, X.D. Yue, S. Xu and J. Liu	168
Influence of Regimes Electrolytic Plasma Cementation on the Mechanical Properties of Steel 12Cr18Ni10Ti	
M. Skakov, S. Kurbanbekov and M. Scheffler	173
Way of Hardening Surface Coating of Details from Steel 30CrMnSi in Electrolytic Plasma	
M. Škakov, L. Zhurerova and M. Scheffler	178
Crystallization Behavior of Polypropylene/Syndiotactic1,2-Polybutadiene Blends	
X.F. He, S. Wang, T.J. Ge, X.Q. Zhang and C.Y. Zhang	182
Surface-Modified Zeolite-Filled Poly(Piperazine-Amide)/Polysulfone Composite Membrane for Potassium Extraction	
J. Hou, J.S. Yuan and R. Shang	186
The Preparation of Ceria-Based Solid Electrolyte and the Influence of Manganese Oxide on the Performance of the Electrolyte	
Z.J. Zhang	190

Modes Excitation in Five-Mode Photonic Crystal Waveguides of Triangular Lattice X.Y. Shi, W. Yang, H. Yang and X.Z. Wang	196
Influence of Time on Thermo Sensitivity of Copper/Paraffin Thermo Sensitive Composite and Development of Testing Device B.Y. Lou, Y. Zhou, Z.H. Dong and B. Xu	200
Effects of pH Values on the Structure, Composition and Luminescence of $\text{CaWO}_4\text{:Tb}^{3+}$ Thin Films L.P. Chen and Y.H. Gao	204
Laser Cladding Fe-Al Intermetallics Coatings on ZL114A Aluminum Alloy H. Ye, S.X. Peng, Z.L. Yan and X.B. Zhang	208
Effects of Fe-Doping on the Properties of CuAlO_2 C. Chen, J.J. Cao, Y. Wang and Y.D. Wang	212
Samarium Ions Doped Yttrium Aluminium Garnet Glass Ceramics J. Yang, X. Liu, B. Zhai, Z.Q. Wang, X. Zhao and H. Lin	216
Galvanic Corrosion between Depleted Uranium and 40Cr Steel Z. Pu, Q.F. Wang, M.B. Shuai and D.M. Lang	220
Synthesis of Ultrafine SrCO_3 Powders by High Gravity X.W. Zou, S.X. Wang, Z.S. Yang, M.X. Qi and S.Y. Wang	226
Enhanced Photoelectrochemical Performance of Fe-Doped WO_3 Film Electrode under Visible Light X.F. Cheng, H.W. Feng and Y.Q. Wang	230
Evolution of Defect Photoluminescence in Annealed N-Rich $\alpha\text{-SiN}_x\text{:H}$ Films R. Huang, J. Song, Y.Q. Guo, C. Song and X. Wang	234
Bioinspired Synthesis of Cross-Linking of Dopamine-Containing Block Copolymers to Form Thermosensitive Covalent Hydrogels K. Huang, J.S. Chen and Y. Liu	238
Surface Hardening of 18CrNi3MoA-SH Steel with Heating in Electrolytic Plasma M. Skakov, L. Bayatanova and M. Sheffler	242
Characteristics of New Absorbent System of Heteropoly Compound Solution for H_2S Removal J. Wang and R. Wang	246
Synthesis and Structural Characterization of Zinc and Magnesium Doped Hydroxyapatite H.Q. Zhang, M. Zhang, L.W. Fu and Y.N. Cheng	250
Mechanochemical Synthesis of Hydroxyapatite Bioceramics through Two Different Milling Media S. Adzila, I. Sopyan, S. Farius, N. Wahab and S. Ramesh	254
Development of Triphasic Calcium Phosphate–Carbon Nanotubes (HA/TCP-CNT) Composite: A Preliminary Study Gunawan, I. Sopyan, S. Nurfaezah and M. ‘Ammar	258
The Optimization of Lapping Process Parameters Based on Extension Theory F. Jiang, J.H. Xiang, Z.W. Liang and C.L. Zhang	262
Research of Calcium Oxide Based Ceramic Cores in Titanium Casting X.Q. Xu, P. Gao and T.T. Zhou	266
The Research of Chemical Plating of Pd/Sn on Graphite Anode Surface and its Electro-Catalytic Properties B.Y. Lou, J.L. Xu, S.L. Kong and B. Xu	272
Study on Stealthy Characteristics of Electromagnetic Metamaterials Y. Liu, Z.Y. Li and W.Z. Zhang	276
Structure and Properties of a Dimer Complex: $[\text{Co}(\text{Hdmg})_2(\text{Him})_2]\cdot(\text{ClO}_4)$ X.W. Liu, S.H. Yuan and T.T. Lin	280
Morphology Transitions in RAFT Polymerization C.Q. Huang and C.Y. Pan	284
Effects of Sand Blasting on the TBCs Fabrication Quality H. Zou and H. Zhang	290
An Investigation on Formation Mechanisms of Wrinkles on Steel Casting Surfaces J. Huang, L. Xia, Y.S. Zhang and S.N. Li	295
Structure and Magnetic Properties of (Al, Co) Co-Doped ZnO Thin Films P. Cao and Y. Bai	299

Synthesis of Biomorphic ZnO Derived from Silk Template T.C. Wang, L.J. Chang, Y. Jia, S. Kong, C.P. Wong, J.L. Gao and J.H. Tao	303
Effects of Na⁺ on Spectral Properties of Er³⁺: CaF₂ Transparent Ceramic W.W. Li, B.C. Mei, X. Li, J.H. Song and G.L. Zhi	307
High Pressure Effect on Reaction Synthesis of Ti₂SC Powder W.B. Zhu, B.C. Mei, Y.W. Tu and J.H. Song	312
Synthesis and Properties of New Biodegradable Polyurethane Containing Natural Rubber and Poly(lactic Acid): Effect of NR and PLA Ratio C. Khaokong, J. Suwanmanee, J.F. Pilard, P. Pasetto and V. Tanrattanakul	317
Preparation and Characterization of Thermoplastic Starch/Wheat Gluten Composites K. Kaewtathip, V. Tanrattanakul and T. Kaewtathip	321
The Magnetic Ordering of SiCN Films Prepared by Ion Implantation X.D. Meng, F. Yang and X.Y. Liu	325
Measuring Electrical Conductivity of Al-Sc Alloy by Application of Continuously Varying Cell Constant Technique R. Guo, B. Zhang and W.X. Zhang	329
Transfer Behavior of Clove Oil/β-Cyclodextrin Inclusion Complex in Antibacterial Film Based on PVA P. Jiang, X.H. Hao and M. Sun	333
Thin Films of Liquid Crystalline Phthalocyanines and their its Composites with Single-Walled Carbon Nanotubes: Properties and Alignment T. Basova, A.A. Esenpinar, S. Tuncel, M. Durmuş, A.G. Gürek and V. Ahsen	337
Adhesion Performance and Wear Resistance of Multilayered TiN Coating Deposited by Hollow Cathode Discharge Method Z.M. Yu, J.X. Hu, Y.S. Niu, J. Wei and Y. Yang	342
Studying Grading of Non-Metallic Materials on the Spiral Screen D.Y. Yelemes and A.D. Kalieva	346
Comparison of Two Methods of Solving Electromagnetic Parameters of Metamaterials with the Unit Cell of Symmetrically Arranged SRRs W.Z. Zhang, Z.Y. Li and Y. Liu	351
Micro-Flow Induced Peculiar Surface Profile of Film from Dried Droplet of Water-Poly(Ethylene Oxide) Solution Y.C. Hu, Q. Zhou, C.C. Dong and L.S. Cui	358
Effect of Doped Manganese Oxide on the Properties of Ce_{0.8}Gd_{0.2}O_{2-δ} Solid Electrolyte Z.J. Zhang	362
The Effect of Temperature on Performance of Powder Activated Carbon-I Membrane Biological Reactor (PAC-IMBR) X.G. Ma, W.J. Ji, J.P. Sun, X.X. Xue, H. Yang and J.X. Fu	368
Polishing of CVD Diamond Wafers and Films H.B. Feng, Y.Q. Chen and L.C. Zhang	373
Preparation and Mechanical Properties of C/SiC Joints with Pins or Bolts G.D. Li, C.R. Zhang, H.F. Hu, Y.D. Zhang, S. Chen, X.B. He and M. Mei	377
The Influence of Atmosphere on Electrical Transport Properties in Bilayer Graphene FET by CVD Methods G. Peng, X.Y. Yu, Y.Q. Zhou, G. Wang, L. Wang and Y.L. He	383
Effect of Growth Temperature on the Morphology of ZnO Films Grown in Aqueous Solutions Q.F. Wu, S.S. Wang, F.L. Yao, C.M. Zhang and M.D. Li	388
Photoluminescence Properties of Silicon Nitride Prepared by VHF-PECVD J. Song, Y.Q. Guo, C. Song and X. Wang	392
Study of Temperature Stability of the Magnetoresistance and Transport Properties in La_{0.6}Sr_{0.15}Na_{0.10}MnO₃ with the Addition of Ag L.C. Hu and H.W. Zhao	396
The Formaldehyde OTFT Sensor Based on the Airbrushed P3HT/ZnO Composite Thin Film W.C. Dan, Y.D. Jiang, H.L. Tai, G.Z. Xie, X. Li, C.J. Fu and Z. Wu	400
Solution of Thermal Bridge under the Opening in the Cladding by Means of Support Structure for a Doors Threshold Made of Thermal Insulation Composite Material T. Pospíšil, J. Pěněčík, L. Matějka, L. Matějka, A. Kalužová and D. Dostálová	404

Study on Novel Structure of Potassium Borate Hydrate: $K(H_4B_5O_{10}) \cdot 2(H_2O)$ H.X. Liu, F.F. Jian, J. Wang, G. Zeng, H.J. Yue and X.S. Tai	409
Study on Novel Structure of Mn-Di(3,4,6,7-tetramethyl-1,10-phenanthroline) Dichloride: $[Mn(C_{16}H_{16}N_2)_2] \cdot Cl_2$ H.X. Liu, H.M. Guo, J.Z. Xiao, G. Zeng, H.J. Yue and X.S. Tai	413
Study on Novel Structure of Glycolic and Oxalic Acid Holmium: $[Ho(C_3H_6O_9)] \cdot CH_3OH$ H.X. Liu, W.L. Zeng, J.Z. Xiao, G. Zeng, H.J. Yue and X.S. Tai	417
A New Energy Saving Roofing Insulation Board System of Polyphenylene Foam Concrete D.Z. Xia	421
Model of Predicting Polymer Melt Temperature Field by BP Neural Networks M.S. Li, B.X. Liu and Y. Wu	425
Numerical Analysis on Flexural Capacity of Prestressed Steel Reinforced Ultra-High Strength Concrete Beams G. Meng, L.H. Zhang and J.Q. Jia	429

Chapter 2: Nanotechnology and Micro/Nano Electro Mechanical Systems

Different Cr Contents in Nanostructured Fe-Ni-Cr Alloys Prepared by Mechanical Alloying Q. He, T. Liu and J.L. Xie	437
Dispersion and Thermal Conductivity of Al_2O_3 and TiO_2 Binary Nanofluids L. Yang and K. Du	442
Preparation of $LiTaO_3$ Nano-Crystalline Films by Sol-Gel Process J. Gou, J. Wang, Z.H. Huang and Y.D. Jiang	446
The Comprehensive, Effective Purification Strategy of Carbon Nanotubes X. Liu, H. Bian, H.W. Chen and L.J. Zhao	450
Molecular Dynamics Simulation of Microcrack Healing in Copper Nano-Plate M.F. Wang, G.J. Du and D.Y. Xia	454
Optimization of Fabrication Parameters to Prepare Tea Catechin-Loaded Liposomes by Fuzzy Orthogonality J.J. Fang, R.F. Guan, J.Q. Ma, C. Rui, H.T. Shen and J.J. Zhang	458
Microstructures and Photoluminescence of a-Si:H/a-SiN_x Multilayers Annealed at Different Temperature C. Song, Y.Q. Guo, X. Wang, J. Song and R. Huang	465
Influence of Radio Frequency Power on the Structural Properties of nc-Si Films Fabricated by VHF-PECVD Y.Q. Guo, X. Wang, C. Song, R. Huang and J. Song	469
Hydrothermal Synthesis and Photocatalytic Properties of Nano Bi_2WO_6/TiO_2 Powers H.F. Chen and T. Yan	473
The Thermal Conductance Estimation of Uncooled Microbolometer C. Chen, Y.D. Jiang and H.X. Zhou	477
The Laser Ablated Deposition of Si Nanocrystalline Y. Wu and X.H. Meng	481
Recent Progress on Controlled Dielectrophoretic Assembly of Carbon Nanotubes C. Ding, L.B. An, X.X. Yang and Y.Y. Liu	485
Synthesis of Amorphous $Ti_{50}Al_{50}$ by Mechanical Alloying J.H. Zhang, G.H. Xu, Y.J. Xu and Y.H. He	490
Study on Parameters of MEMS Accelerometer S.M. Ma, C. Chen, T. Wang, H. Zhang and H.X. Zhou	496
Titanium Dioxide Nanoparticles Induced Cytotoxicity in Rat Retinal Ganglion Cells under Ultraviolet B Irradiation D.D. Guo, H.S. Bi, Q.X. Wu and D.G. Wang	500
Cytotoxicity Effects of CdTe Quantum Dots on Human Lung Cancer A549 Cells S. Han and Q.N. Li	504
One-Step Hydrothermal Synthesis of MoS_2 Nano-Flowers with High Surface Area and Crystalline Y.J. Li, N. Li, X. Yan, Y. Chi, Q. Yuan and X.T. Li	508

A Novel Synthesis of $\text{CaWO}_4\text{:Eu}^{3+}$ Flower Like Microcrystals in Ethanol/Water Mixed System and Characterization	
Y.Q. Chen, J.H. Lee, S.W. Park, B.K. Moon, B.C. Choi, J.H. Jeong, K.W. Jang, H.S. Lee and S.S. Yi	512
The Effect of Density and Surface Area on Carbon Nanotube Capacitive Sensors for Dimethyl Methylphosphonate Detection	
H.J. Jing, Y.D. Jiang and X.S. Du	519
Characterization of Cr Doped Diamond-Like Carbon Films and Research on Mechanical Properties	
Y.Y. Fan, G. Li and Y. Xia	523
Study on the Preparation of PSA NanoFibers Using Electro-Spinning Technology and its Characterizations	
W.J. Chen, B.J. Xin and X.J. Wu	527
Electrospinning of Regenerated Silk Fibroin/Polybutylene Terephthalate Blended Mats and their Surface Wettability	
Y.Q. Cao, Q.F. Ke, X.Y. Jin and S.S. Guo	531
Role of Interfacial Surfactant Layers in the Thermal Conductivity of Nanofluids	
L. Yang, K. Du, Y.L. Wu and S.Y. Bao	535
Preparation and Photocatalytic Properties of Nano Ni/TiO_2 Composite in Alginate	
H.F. Chen and T. Yan	539
Delivery of miRNA Using Fe_2O_3 Nanoparticles Capped Polyethyleneimine as a Nonviral Carrier	
G.F. Liang, P. Li and W.J. Lei	543
Abnormal Capacitance Hysteresis Phenomena in Stacked Nanocrystalline-Si Based Metal Insulator Semiconductor Memory Structure	
X. Wang, S. Chao, Y.Q. Guo, J. Song and R. Huang	547
Study on Stability Exponent Apparatus	
G.H. Chen	551
Research for Extraction Method of MEMS Devices Macro-Model	
H. Zhang, C. Chen, T. Wang, S.M. Ma, H.X. Zhou and Y.N. Deng	555
Biomimetic Polypyrrole with Hierarchical Structures and Investigation of its Bio-Sensing Properties	
S.M. Zhu, Y.H. Chen, J. Tang and D. Zhang	559
A Hybrid-Structured Microfluidic Chip Developed for ATP Bioluminescence Detection	
W.M. Zhang, Z.Y. Li, T. Chen, J.J. Yao, Y. Lv, M. Li and G. Li	563
Preparation and Investigation of Toluene-Sensing Properties of Polymer/Inorganic Composite and Multi-Layer Films	
J. Liao, G.Z. Xie, Y.D. Jiang, T. Zhu, W.Z. Li and H.L. Tai	570
Study on the Reliability Problem of UV-LIGA Technics	
J.K. Liu and X.L. Qi	574
Accelerated Degradation Modeling and Statistical Analysis of MEMS Device Based on Competing Failure	
Q. Xia, Z.J. Cao, Y.D. Wang and P. Sun	580
Experimental Study on Miniature-Refrigeration System	
J.J. Yang, K. Li and X.Y. Cui	584
The Humidity Sensitive Behavior of Poly(Ethyleneimine)/Multiwall Carbon Nanotube Composite Films	
T. Zhu, G.Z. Xie, Y.D. Jiang, J. Liao and H.L. Tai	588
A Preparation Method of Diamond Specimens Using an Advanced FIB Microscopy for Micro and Nanoanalysis	
Y.Q. Chen, F.Z. Tang and L.C. Zhang	592
Microstructure and Mechanical Properties of a Nb-Microalloyed Medium Carbon Steel Treated by Quenching-Partitioning Process	
K. Zhang, S.W. Lu, Y.H. Ou, X.D. Wang and N. Zhong	596
The Specific Binding between Galactose Group and Ricinus Communis Agglutinin (RCA) Investigated with Microcantilever	
H.Y. Zhang, J. Hu and H.M. Liu	600

<i>In Situ</i> Polymerization and Photophysical Properties of Poly(p-phenylene Benzobisoxazole)/Nano-Sized TiO₂ Fibers H. Wang and J.P. Liu	605
Preparation of Poly(γ-Glutamic Acid)/Montmorillonite Superabsorbent Nanocomposite X.M. Wang and C.N. Zhang	609
Synthesis of Zinc Doped-Biphasic Calcium Phosphate Nanopowder via Sol-Gel Method Gunawan, I. Sopyan, A. Naqshbandi and S. Ramesh	614
Microstructure and Melting Behavior of Rapid Solidified Au-Ag-Ge Alloy D.T. Cui, W.H. Liu and L.F. Liu	618
Effect of Accumulative Roll Bonding Process with Inter-Cycle Heat Treatment on Microstructure and Microhardness of AA1050 Alloy M. Dehghan, F. Qods and M. Gerdooei	623
Influence of Electrolyte Plasma Treatment on Structure, Phase Composition and Microhardness of Steel P6M5 M. Skakov, B. Rakhadilov and M. Sheffler	627
Microstructure and Piezoelectric Properties of (0.996-x) K_{0.5}Na_{0.5}NbO₃ - 0.004 BiFeO₃ - x LiSbO₃ Ceramics M.H. Jiang, X.Y. Liu, G.H. Chen, J.F. Ma, G.S. Zhu and J.W. Xu	632
Crystal Structure Analysis on Aramid Fiber/Fibrids and Paper by Polarized Light Microscopy S.F. Zhang and C.L. Kang	636
Study on Microstructures of Polycarboxylate-Type Superplasticizers with Different Side Chains X.Y. Peng, C.H. Yi, Q.Q. Tang and X.Q. Qiu	640
Microstructure, Interface and Hardness of Ti/TiN Nanolayered Coatings X.M. Bai, W.T. Zheng, X.J. Guo and H. She	645
Preparation and Characterization of Nano-Porous SiO₂/TiO₂-SiO₂ Thin Films on Glass Substrates by Sol-Gel Method Q.N. Zhao, Y. Liu, S.H. Hou, W. Zeng and J. Sun	651

Chapter 3: Related Themes

A Improved Stereo Matching Fast Algorithm Based on Dynamic Programming Z.W. Zhou, G. Li, C.L. Li and J.Z. Fan	657
Simulation of Dynamic Behaviour of RC Bridge with Steel-Laminated Elastomeric Bearings under High-Energy Mining Tremors J.M. Dulinska and R. Szczerba	662
Numerical Simulation of the Performance-Based of the Building Fire Protection Safety Evaluation C.C. Yu, T.C. Chen, C.S. Lin and S.C. Wang	668
Research on Design Theory and Experimental Validation of Dry Friction Automotive Clutch Based on Failure Mechanism Z.F. Yan and W.J. Liu	673
Kinetics of Bamboo Fiber Hydrolysis Reaction in Saturated Formic Acid J.P. Zhuang, L. Lin, C.S. Pang and Y. Liu	679
Gray System Study on the Influence of Particle Size Distribution of Steel-Slag Powder on Performance of Cementitious Materials T.S. He, X.G. Zhao, S.Y. Zhao and Z.B. Li	684
Test Research on Mechanical Property of GFRP Bolt under Freeze-Thaw Cycle Conditions X.X. Tang, X.Y. Luo, Q. Sun and Y.C. Kuang	689
The Theories and Application of Numerical Simulation with Smoothed Particle Hydrodynamics Method H.L. Zhou, H.Y. Yu and M.H. Pang	695
Solving Permutation Flow Shop Scheduling Problems with Job Idle Time in between Two Machines A. Baskar and A.M. Xavier	699
Finite Element Analysis of the Main Spindle of the Gold Ornaments Chain Forming Device J.P. Yang, C.L. Zhang and H.Y. Zhu	703

A Novel Bogus Data Detection and Filtering Scheme for Wireless Sensor Networks Z.M. Zhang, X.Y. Xiong and C.G. Jiang	707
Systematic Research on Building Strategy-Oriented Management System of Local Party and Government Leaders' Environmental – Protection Performances J.L. Zuo	712
Computer Simulation and Analysis on Fire Verification and Smoke Distribution of the Entertainment Areas T.C. Chen, C.C. Yu and C.S. Lin	716
A Study on TingBao Yang's Architectural Thoughts: Aiming at the Regionalism Concept Y. Qu, Y. Chen and Y. Wang	720
Steam Pressure of Foaming Machine of Fuzzy PID Control and Simulation Y.H. Xiong, C.L. Zhang and B.X. Fu	726
Research on a Strategy-Oriented Energy Saving and Emission Reduction Performance Management System of the Party and Government Leaders of Counties and Municipalities J.K. Zhou, Z.X. Duan and B.C. Yu	732
Finite Element Analysis and Structural Optimization of the Refrigerator Door Cover W.X. Wang, C.L. Zhang, H.Y. Zhu and L. Hu	736
A New Algorithm of Path Planning Based on Local Data Z.W. Zhou, X.Y. O Yang, W.B. Xu and N.D. Cui	741
Robust Optimization for Tube Bending Process Based on Finite Element Method X.W. Chen, Z.H. Liu and J.L. Zhang	746
Design of Low-Speed Spindle Running on Air Bearings Used on Rotary Viscometer Y.X. Yao, H.B. Wang and L. Zhou	751
Study on Flux Pinned Vertical Force between High-Temperature Superconductor and Permanent Magnet M.L. Zhang, Y. Lu, D. Gao and W. Chen	755
Present Research Situation and Future Perspectives of Grinding Process Simulation System H. Tang, Z.H. Deng, W. Liu, L.L. Wan and Q.P. Wu	759
Infrared Two-Color Temperature Measurement System for AOD Bottom Lance G.H. Chen	765
Research of Vector Control for Asynchronous Motor System Based on MRAS Q.H. Yao and M. Cao	769
Adaptive Fuzzy Neural Network of Cast-Rolling Hydraulic AGC Z.C. Wang, X. Zhao and R. Bi	773