

Table of Contents

Organizing Committees

Fabrication of Hierarchical SnO₂ Nanocrystals and their Sensing Properties to Volatile Organic Compound Vapors D.L. Chen, T. Li, L. Yin, R. Zhang and X.J. Li	1
Composition-Dependent Ultraviolet up-Conversion Luminescence in Yb³⁺-Ho³⁺ Co-Doped Germanium- Phosphate Glasses Y.M. Yang, W. Zhang, S. Du and Z.P. Yang	5
Solvothermal Synthesis of Phase-Pure CuInS₂ Hierarchical Nanostructure Using Single-Source Molecular Precursor J. Li, Y.C. Zhang and M. Zhang	9
Characterization and Photocatalytic Activity of N, Cd-Codoped TiO₂ H.T. Gao, Y.Y. Liu and X. Zhao	13
Morphology-Controlled Synthesis of 1D ZnO Nanostructures by Hydrothermal Technique Z.D. Cai, L. Dong, G.X. Cao, X.Y. Zhang and S. Guan	17
Study on the Electrochemical Performance of Carbon-Coated LiFePO₄ Prepared by Sol-Gel Method R. Yang, E.W. Kang, B.L. Jiang and X.P. Song	22
Effects of pH and Dispersant Concentration on Properties of Li_{1.075}Nb_{0.625}Ti_{0.45}O₃ Aqueous Suspension S.C. Li, Y.J. Geng, Q.L. Zhang and H. Yang	26
Synthesis of Surface-Modified Oil-Soluble Silica Nanospheres and Investigation of their Tribological Behavior X.H. Li, J.J. Huang, T.C. Cai and Z.J. Zhang	30
Study on the Radial Resistivity Variation of the Gas Doped Floating-Zone Single-Crystal Silicon X.N. Zhang, S.L. Gao, X.G. Zhang, J.H. Li, Y.J. Wang, X. Li, H.P. Shen and J.H. Wang	34
Viscoelastic Analysis of Asphalt Mastic Based on Micromechanics J.P. Zhang, L. Xu and J.Z. Pei	38
Temperature Dependent Photoluminescence of Fe-Doped TiO₂ Nanowires Prepared by Hydrothermal Method G.Z. Rong, D.W. Fan, C.B. Wang, X.M. Ling, S.F. Miao and X.S. Niu	42
Optimized Synthesis of Water-Soluble and Small-Size CdSe Quantum Dots J.Y. Xia and J.L. Tang	46
Fabrication of Needle Nano-ZnO in the Pores of Expanded Graphite Y.C. Zhang, H.Y. Wu, M.C. Zhu, S.J. Zhao and D.X. Li	51
Synthesis and Performance of Porous TiO₂ Y.C. Zhang, H.Y. Wu, M.C. Zhu, E.Q. Wang and D.X. Li	55
Preparation and Thermal Conductivity of Y₂Ce₂O₇ Ceramic Material H.S. Zhang, S.R. Liao, W. Yuan and S.K. Guan	59
Fabrication and Characterization of Ceramic Floor Tiles from Coal Gangue H.L. Xu, D.L. Chen, H.L. Wang, H.X. Lu, R. Zhang, S. Guan and Q.F. Liu	63
Study on Heat Treatment of Aluminum Nitride (Y₂O₃) Ceramics Sintered at High Pressure X.L. Li, L.Y. Wang, E.A. Zai, H.A. Ma and X.P. Jia	68
Experimental Study on Lump Iron Ores as Sintering Hearth Layer Z.W. Ying, J.K. Yu and L.X. Xu	72
Grain Size Control and Ethanol Sensing Properties of Calcined SnO₂ Nanoparticles Y. Wang, X.L. Jia, L. Dong and S. Guan	76
Zn_{0.9}Co_{0.1}O/ MCM-41 Composite: Synthesis and Magnetism W.B. Liu, Y.T. Zhang, X.X. Li, S.X. Liu, Z.Y. Chen and P. Che	80
Development of Microstructure of Semi-Solid A356 Alloy by Alternating Electromagnetic Stirring W. Liu, J.Q. Li and X. Ding	84
Effect of Ni₇₀Mn₂₅Co₅ or Fe₅₅Ni₂₉Co₁₆ on the Growth of Type-II a Large Diamonds with Al as Nitrogen Getter S.S. Li, N. Luo, X.L. Li, T.C. Su, Y.M. Zhou, Y.S. Zhang and X.P. Jia	89

Experimental Research and Numerical Simulation Analysis of Sodium Expansion in Tib₂-Carbon Cathodes during Aluminum Electrolysis Q.S. Liu, H.F. Tang, F. Hui and J.L. Xue	93
Sulfation of Calcined Raw Meal in the Kiln Inlet Housing for the Cement Industry X.Y. Li, Z.J. Hu, X.C. Ye, W.M. Yu and C.X. Tao	98
Study on Non-Isothermal Crystallization Kinetic of Tundish Covering Fluxes L.F. Sun, H.P. Wang, C.L. Liu, Y. Zou and M.F. Jiang	102
Synthesis of Hollow Carbon Hemispheres in the Magnesium Carbonate-Metallic Li System with the Help of CHBr₃ J.F. Chen, Z.M. Chen, Y. Cao and Q. Xu	106
Study on Carburizing and Quenching Cracks of Large Low-Alloy Gears Z.R. Pang, H.L. Yuan, J.W. Xu and C.M. Wang	110
Effects of Fineness on Activity Character of Fly Ash Z.T. Luo, B.G. Ma, J.J. Yang and J.X. Liu	114
Ultra Convenient Synthesis of Lanthanide Based Magnetic-Fluorescent Hydrogels for Multimodal Cellular Imaging B.D. Chen, Y.Y. Li, B.B. Zhang, B. Zhang, Y.L. Wu and D.L. Shi	118
Grey Prediction on Sheared Edge Quality in Precision Blanking Process for Micro IT Parts B. Wang and J.B. Chen	122
Shear Behavior of CFRP Prestressed Concrete Beams without Stirrups Z.H. Wang, X.L. Du and J.B. Liu	126
Numerical Simulation of a First Normal Stress Difference-Based Model for Shear-Induced Crystallization of Polyethylene J.Y. Wang, J.B. Chen and C.Y. Shen	130
Experimental Study on Water Stability of Asphalt Mixture Y.Q. Yuan, D.Y. Gao, J. Zhao, J.Y. Tang and S.H. Zhai	135
Evaluation on the Linear Viscoelastic Behaviors of Swelling Styrene-Butadiene-Styrene Block Copolymer L.G. Huang, W.J. Wang, L. Tang, Z.G. Shi, Y.X. Cao and J.W. Wang	139
Investigation on the Rheological Behaviors of Styrene- Butadiene- Styrene Block Copolymer Solution W.J. Wang, H. Guo, X. Xu, Y.X. Cao and J.W. Wang	143
POSS-NH₂/Cyanate Ester Resin Organic-Inorganic Hybrids: Curing Reaction and Dielectric Properties Z.P. Zhang, S.F. Chen and J.Z. Pei	147
Modification of L Zeolite and Hydroisomerization of N-Dodecane over Pt/L Catalysts and Pt/SAPO-11 Catalyst L. Han, J.J. Xu, Q. Wang, D.Y. Wei, J.F. Wang, J. Xu, Y.L. Chen and R. Zhang	151
Synthesis and Safety Evaluation of a New Enteric Coating Material X.L. Lai, H.J. Deng, Z.H. Wang and J.H. Guo	157
Morphology and Tribological Behaviors of <i>In Situ</i> Polymerized Nano-SiO₂/Polyacrylate Nanocomposites X.L. Hu, Y.J. Li and Y.M. Dong	161
Morphology of a Functional POSS/Bismaleimide Nanocomposite and its Monitoring Phase Separation with a Thermoplastic Blend X.L. Hu, R.L. Yu, G. Liu and X.S. Yi	166
Shape-Memory Behavior of Poly(L-Lactide)/Poly(ε-Caprolactone) Blends H.Q. Dong, L.J. Liu and Y.Y. Li	171
Laboratory Study of Pavement Performance of Basalt Fiber-Modified Asphalt Mixture Y.X. Zheng, Y.C. Cai and Y.M. Zhang	175
Effects of SiO₂ and <i>In Situ</i> Crosslinking on the Swelling and Thermal Properties of Poly(vinyl Alcohol)/SiO₂ Hybrid Films J. Liu and K.Y. Tang	180
Pristine Functionalized Carbon Nanotubes from Ethanol Flame as a Reinforcement in Polystyrene Composite X. Qi, L. Ren, G.L. Hao, J. Li, P.F. Fang, C.X. Pan and J.X. Zhong	184
Rapid Synthesis of Cyclomatrix Polyphosphazene Spheres and their Application for the Production of Microporous Carbon Spheres J.W. Fu and Q. Xu	188

Seismic Performance of Corroded RC Circular Columns Strengthened with Hybrid Fiber Reinforced Polymers J.H. Li, Z.Z. Chang, Y. Li and Z.C. Deng	192
Piezoresistive Effect of Multi-Wall Carbon Nanotube Reinforced Epoxy Resin Coating J.L. Luo, Q.Y. Li, T.J. Zhao and S.W. Sun	196
Solid Phase Synthesis of Novel Fullerene Nucleotides Conjugates J. Zhang and Y.D. Zhang	200
Synthesis and Characterization of Tungsten Micro-/Nanoparticles Using Tungstate-Based Inorganic-Organic Hybrid Nanobelts as Precursors D.L. Chen, H.J. Wen, R. Zhang and X.J. Li	204
Determination of Gold Surface Mechanical Behavior in Electro-Thermo-Mechanical Coupled Service Using Atomic Force Microscopy Q. Wang, R. Hu, J. Zhang and P. Yang	209
Corrosion Mechanism of Atmosphere Space in Oil Tank Containing Sulfur X. Zhao, X.L. Wei and S.F. Liu	213
Preparation of (Mo,Nb)Si₂ Ternary Alloys by Self-Propagating High-Temperature Synthesis P.Z. Feng, S. Zhang, X.H. Wang, W.S. Liu and J. Wu	219
Surface/Interface Synergetic Effect-Induced Great Optical Spectral Change with Ag Content for Ag Nanoparticles Dispersed in Mesoporous SiO₂ P.S. Liu, J.L. Hu, W.P. Cai and Y. Lu	223
Investigation on Ti-Deoxidized Products Inducing Formation of Intragranular Ferrite J.H. Qi, J. Wu, J.P. Suo and Z.L. Xue	229
Fracture Mechanisms Anisotropy of AZ31 Magnesium Plate under Impact Loading Condition Y.B. Yang, Z.M. Zhang and F.C. Wang	233
Preparation of a Low Carbon Steel with Ultrafine Grained Microstructure through Rare Earth Micro-Alloying C.J. Liu, H.L. Liu and M.F. Jiang	237
Effect of Ar Purification on Microstructure and Properties of High Strength Gray Cast Iron J. Yang, S.X. Liu, Q.F. Hou, H.W. Sun, Y.F. Sun and S. Guan	241
Microstructure and Erosion-Corrosion Behavior of Hot-Dipping Al-Mn Alloy Coatings on Low Carbon Steel X.M. Li, P.K. Lu, Q. Hu, X.F. Dong and B.J. Fang	246
Effect of HCl Concentration on the Pickling Behavior of SUS430 Stainless Steel P.Y. Shi, L. Di, J. Wei, M.F. Jiang and C.J. Liu	250
Crystallographic and Electrochemical Characteristics of Melt-Spun Ti₄₅Zr₃₀Ni₂₅RE₃ (Y, La) Alloys B.Z. Liu, Y.P. Fan and B.Q. Zhang	254
A Multiphase-Field Microstructure Numerical Simulation of Al-Cu Eutectic Alloy J.J. Tang, J.Z. Jiang, L.Q. Hou, D.H. Chen and H. Zhang	258
Study of Electrochemical Inhomogeneity of Zinc in Zinc/Steel Couple during Galvanize Corrosion by Wire Beam Electrode D.L. Zhang, Y.H. Jin, Y. Li and X. Tang	263
Effect of Plastic Deformation on Microstructure Evolution of a High Strength X100 Pipeline L.H. Qi, J. Niu, L. Yang, Y.R. Feng and J.X. Zhang	267
Electrochemical Synthesis of Zirconium Ethoxide and the Electrochemical Behaviors of Zirconium in the Process S.H. Yang, G.F. Huo, J.Y. Xia and H.P. Yang	275
Microstructure and Mechanical Properties of Cold-Rolled TRIP Steel Sheets C.N. Jing, X.H. Chen, M.G. Wang, Q.Z. Tian and Z.C. Wang	280
Bake Hardening Behavior of Cold-Rolled Dual Phase Steel Sheets C.N. Jing, X.H. Chen, M.G. Wang and Q.Z. Tan	284
Phase Stability of Nb-Mo Alloys X.B. Li and P. Zhang	288
Halogen-Exchange Fluorination of Chlorinated Benzaldehydes and Diphenyl Ketones Promoted by Microwave Z.Y. Liang and C.X. Lü	292

