

Table of Contents

Preface

Synthesis and Properties of Microencapsulated Solid Paraffin Phase Change Materials Z. Xu, J.Q. Li and G.C. Zhang	1
Microencapsulated Phase Change Materials and its Application in Thermal-Regulated Fibers W. Li, X.X. Zhang and X.C. Wang	6
Ferroelectric-to-Ferroelectric Phase Transition Induced Electro-Caloric Energy Conversion in Barium Titanate at Room Temperature K. Ding, G.P. Zheng and Y. Shen	10
Preparation and Characterization of Polymer Electrolyte Based on Comb-Shaped Poly(oxyethylene) with Ether Side Chains L. Bai, M. Li and C.W. Nan	14
Preparation and Properties of Polyamide 6-Functionalized Nanometer-Sized Graphene Composite Fiber H.H. Liu, W.W. Peng, Y. Tan, L.C. Hou and X.X. Zhang	20
‘Window’ Effect in the Analysis of Universal Dynamic Response X.Y. Gong, Z.F. Gu and T.W. Li	24
Study on Multi-Doped Ceria-Based Solid Electrolytes Y.L. Yao, Y.G. Liu, Z.H. Huang and M.H. Fang	28
Microstructure Modification of NiO/YSZ Anode in Solid Oxide Fuel Cell by Particle Size Gradation of YSZ Q.B. Chang, X. Wang, J.E. Zhou, Y.Q. Wang, G.Y. Meng and X.Q. Liu	32
Investigation of Cobalt-Free Cathode Material $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Fe}_{0.8}\text{Cu}_{0.2}\text{O}_{3-\delta}$ for Micro-Tubular SOFC with Asymmetric Structure Anode X.Z. Zhang, Y.Q. Wang, J. Zhang, Q.B. Chang, Y.H. Jiang and J.E. Zhou	36
Effect of Nano Zirconia on Microstructure and Electrochemical Behavior of Aluminium-Zinc Sacrificial Anodes Y. Zhang, A. Chen, C. Liu, H.R. Wang and Z.S. Li	41
Preparation and Properties of $\text{La}_{2/3}\text{Sr}_{1/3}\text{MnO}_3$: Ag_x Polycrystalline Composites Y.Z. Yan, X. Liu, Q.M. Chen and S.C. Zhang	45
Technology of Polyphenylene Sulfide (PPS) Resin/Graphite Conductive Composite for Bipolar Plate H.Y. Zhang, C.S. Guan, T.D. Li and X.D. Yang	49
Charge Transmission and Recombination in the Dye-Sensitized Solar Cells Based on Mn-Doped TiO_2 Thin Films Q.P. Liu, Y. Zhou, H.J. Huang, Q.J. Guo, X.H. Zhao and L. Yuan	53
The Parameter Estimate Method to Determine the Optimal Thickness for DSSC Electrode H.M. Tian, A.H. Chen, W.F. Duan, R.X. Yang and F.L. Tian	57
Synthesis of Nest-Like NiO and its Application on P-Type Dye-Sensitized Solar Cell X.X. He, P.F. Cheng, G.Y. Lu and F.M. Liu	61
Influence of Heat Treatment on the Properties of CuInS_2 Sensitized Solar Cells Q.C. Wan, C.Y. Luan, X.Q. Xu, F.J. Mei, P. An and G. Xu	65
Preparation of ZnO Films with Different Morphologies and their Applications in Dye Sensitized Solar Cells Y.X. Wang, S. Jian and B.X. Zhao	70
Syntheses of Mesoporous ZnO and SnO_2 Microspheres by Spray Reaction Process H. Zhang, C. Chen, X.L. Xu, R. Wu, F. Li and M. Zhang	74
The Impact Research on Composition and Electric Properties of the CIGS Powder with Different Content of Ga H.Q. Cao, X.P. Zhang, S.J. Zhang, Y.Q. Zhang, J.G. Hu and Z.K. Luo	79
Preparation and Characterization of Ultralow Density Silica Aerogels by Acetonitrile Supercritical Drying G.W. Liu, X.Y. Ni, B. Zhou and Q.J. Yu	83

Hydrogen Generation by Hydrolysis of the Ball Milled Al-C-KCl Composite Powder in Distilled Water	
X.N. Huang, Z.H. Wu, K. Cao, W. Zeng, C.J. Lv and Y.X. Huang	87
Low Cost Chemical Synthesis of Ammonia Borane Complex for Hydrogen Storage	
F. Cao, Z.Y. Fang, F. Chen, Q. Shen, S.Q. Wang and B. Li	92
XPS Study of Poisoning Mechanism of O₂ on LaNi_{4.7}Al_{0.3} Oxygen	
G. Sang, M.J. Tu, S. Wu, X.G. Fu, Q.N. Li, Y.G. Chen, G.H. Zhang and X.Q. Ye	96
Production of Bio-Fuels by Enzyme-Catalyzed Hydrolysis of Cellulose	
L.N. Zhang, J.L. Wang, B.H. Xu and P. Flatt	100
Rolling Temperature on the SHS Reaction of Rolled Al/Ni Reactive Multilayer Foils	
H.F. Lu, X.Y. Yuan, W. Cui, X.S. Ning and K.X. Chen	104
Reduced Graphene Oxide Decorated with Fe₃O₄ Nanoparticles as High Performance Anode for Lithium Ion Batteries	
H.L. Xu, Y. Shen and H. Bi	108
The Preparation and Performance Study of Tin-Nickel Alloy Based Lithium Battery Anode Material	
L.M. Feng, Y. Liu and J.G. Zhang	113
Carbon Nanomaterials with Different Dimensions for Anode of Li-Ion Batteries	
W. Ren, D.J. Li and H. Liu	118
Preparation and Electrochemical Properties of LiMnPO₄ Anode Material Doped with Fe	
J.Z. Zou, Q.G. Fu, X.R. Zeng, F. Deng and Y. Yan	124
Measurement of the Electrochemical Diffusion Coefficient of Li-Ion in LiFePO₄ by Constant Current Step	
Z.F. Zeng, H.Y. Zhang, M.X. Liu and Y.Z. Xu	128
Synthesis of LiFePO₄ by Co-Precipitation and Optimization of its Performance	
Y. Lv, L.X. Wang, D. Lu, J. Sun and J.C. Sun	132
Effects of Ta Ion Doping on Structure and Electrochemical Performances of Li₃V₂(PO₄)₃/C Cathode Materials	
L. Zhang, T. Yang, Q. Yang, Z.H. Huang, M.H. Fang and Y.G. Liu	137
Electrochemical Performance of the Li₃V₂(PO₄)₃/C Synthesized from V₂O₃	
A.F. Liu and Z.L. Yin	142
Strain Effect on the Electrochemical Properties of Li₂MnO₃ Cathode Material: A First Principles Calculation	
X.D. Ren, J.J. Liu and W.Q. Zhang	147
Preparation and Electrochemical Performance of Mg-Doped LiNi_{0.4}Co_{0.2}Mn_{0.4}O₂ Cathode Materials by Urea Co-Precipitation	
Q. Zhang, Y.S. Zheng and S.K. Zhong	152
Effect of Lithium Bis(oxalate)Borate-Based Electrolyte on the Performance of LiNi_{0.5}Mn_{1.5}O₄ for High Voltage Lithium-Ion Batteries	
S.Y. Li, Y.Y. Zhao, W. Zhao and X.L. Cui	156
Performance Optimization for Lithium–Oxygen Batteries	
F. Wang, D.L. Xu, C.S. Liang, H.Y. Sun and Z.K. Luo	160
Performance Study on Zirconia Cloth Separator for High Pressure Ni-H₂ Battery	
F. Gao	164
Ba_yFe_{4x}Co_{4-4x}Sb₁₂	
Z. Chen and J. Yang	169
Electronic Structure and Half-Metallic Properties of Cubic Perovskite BaRu_{1-x}Ti_xO₃ System	
T.W. Li, L. Chen, Y. Wang and J.C. Zhang	174
Improvement in the Thermoelectric Properties by Ag/Sb Co-Substitution in PbSe	
J.Q. Li, X.X. Li, S.P. Li, L. Wang, F.S. Liu and W.Q. Ao	179
Laser Induced Thermoelectric Voltage Effect of LaNiO₃/LaAlO₃ Multilayer	
X. Ding, Q.M. Chen, J. Ma, M. Theingi, Y.J. Li and H. Zhang	184
Thermoelectric Properties of a Wide–Gap Chalcopyrite Compound AgInSe₂	
P.Z. Ying, H. Zhou, Y.L. Gao, Y.Y. Li, Y.P. Li, X.L. Lian and J.L. Cui	188
Reaction Kinetic in the CVD Process of Pyrocarbon Deposition from Propylene Pyrolysis	
C.Y. Lu, L.F. Cheng, L.T. Zhang and C.N. Zhao	193

Synthesis and Characterization of Manganese Oxide/CNTs Composites as Electrochemical Capacitor Electrode Materials Y. Yan, J.Z. Zou and X.R. Zeng	197
Preparation of r-GO/Carbon Sphere/PANI Composites with a High Supercapacity J. Sun, X.Y. Teng and H. Bi	201
Preparation of Graphene-Like Carbon Materials as Electrodes of Electric Double Layer Capacitors H.W. Mi, J.H. Liu, H.Y. Sun, S.Q. Wu, H.P. Zhou, H.Q. Cao and J.Z. Chen	206
Aging Effect of Point Defects Doped Barium Titanate	211
Preparation and Electromagnetic Properties of Manganese Zinc Ferrite/Barium Ferrite Composite Materials Q. Yuan, W. Qun, Z.X. Qu, Z.X. Gu and T. Wu	215
Influence of Ca Content on LITV Effect of $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ Epitaxial Thin Films J. Ma, M. Theingi, H. Zhang, X. Ding, Y.J. Li and Q.M. Chen	220
Preparation and Luminescence Property of $\text{LaMgAl}_{11}\text{O}_{19}$ X. Min, M.H. Fang, Y.G. Liu and Z.H. Huang	224
High Quality Al_2O_3 Nanoparticles Used for Energy Saving Lamps X.Q. Meng, J.B. Li and F.M. Wu	228
Microstructure Design and Optimization of $\text{ZnO-Bi}_2\text{O}_3\text{-Sb}_2\text{O}_3$ Based Ceramic Varistors C. Peng, D. Xie, T.L. Ren and Z.J. Peng	232
Effect of Annealing Treatment on Electrical and Optical Properties of ATO Thin Films by Pulsed Laser Deposition F. Chen, N. Li, Q. Shen, C.B. Wang and L.M. Zhang	236
Preparation and Photocatalytic Properties of $\text{TiO}_2/\text{CMK-3}$ Composites D.S. Dai, P. Zhou, J. An and H. Zheng	240
Effects of Zinc Cations Doping and the Photo-Absorbed Mechanism for NaTaO_3 Nanoparticles Y.Z. Xie, Y.L. Liu and X.J. Wang	244
Preparation and Properties of TiO_2/Ti Catalysts by Ionic Liquid Assisted Anodic Oxidation Method Y.L. Jiang, M. Tian, L.J. Yang, J.Y. Liu and X.H. Liu	248
A Glass Dielectric Paste for Preparation Transparent Spacers of Vacuum Glass by Screen Printing J.Y. Zhao, S.Y. Luo, X.L. Zhang, W.C. Xu and M. Zhao	252
Nano-Materials Create a Whole New World to Oil Industry Y.Z. Ye, Z.B. Wang, X.H. Bai and J.X. Wang	256
Research Progress on Technology of Adsorption and Store Gasoline by Reticular Polyurethane Foam J. Guo, W.G. Ren, Y. Jiang and Z.G. Lu	261
Mechanical Properties of $\text{La}_2\text{O}_3\text{-Al}_2\text{O}_3$ Ceramics Prepared by Microwave Sintering Y.L. Ai, F. He, B.L. Liang, W. He and W.H. Chen	265
Flexure Strength and Elastic Modulus of Four Types of Dental Fiber Posts C. Hu, L.Q. Shao, L.L. Wang, S.Y. Zhou and J. Ai	269
The Effect of Sintering Temperature on the Physical Properties and Bending Strength of Zirconia Toughened Ceramic Z.Q. Hua, B. Zhang, J.H. Chen, L.J. Sun and Y. Zhang	273
Effect of Interfacial Treatment Process on the Microstructure and Properties of C_f/SiC Ceramic Matrix Composites X.Q. Li, H.P. Qiu, J. Jiao, J.H. Luo and Y. Wang	277
Sintering Additive on the Pore Structure and Mechanical Properties of Si_3N_4 Ceramic Foam Produced by Protein Coagulation Casting L.Y. Yin, X.G. Zhou, J.S. Yu, H.L. Wang, S. Zhao, Z. Luo and B. Yang	281
Preparation and Characterization of Functional Gradient Porous ZrO_2 Ceramics X.B. Wang, Y.H. Lin and X.L. Deng	287
Preparation of Zirconia Fiber Body with Extrusion-Extraction Molding S.A. He and X.Y. Zhu	291
Fabrication of Micro-Nano Structured Super-Hydrophobic Surface and Drag Reduction in Channels C.S. Fu, D.C. Cao, Z. Zhang, S. Lu and Z.H. Yao	297

Examination of Initial Melting Temperature and Microstructure of Vita Alpha Veneering Porcelain

B. Zhang, Z.Q. Hua, J.H. Chen, L.J. Sun and S. Liu

303