

# Table of Contents

## Preface, Sponsors, Committees

## I. Academic Frontiers

|                                                                                                                                                                                                          |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Activation of Natural Zeolite and its Adsorption Property</b><br>H. Ding, Y.B. Wang, N. Liang and B.K. Wang                                                                                           | 3   |
| <b>Adsorption Characters of Mn<sup>2+</sup> onto Palygorskites Modified by 1, 10-Phenanthroline and Triethylamine</b><br>L.D. Feng, B.Q. Chen, Y.Y. Shi, Y.W. Guo, J. Huang, M. Sun, Y.X. Gu and D.H. Li | 8   |
| <b>Adsorption Kinetics and Thermodynamics of Methyl Orange onto Surfactant-Modified Sepiolite</b><br>J.Y. Li, Y.J. Li, C.L. Zhou, C.P. Wang and S.H. Hong                                                | 17  |
| <b>Adsorption of Inorganic Nitrogen and Effect of Microbe Action in the Saturated Soil</b><br>S.J. Liu, X.L. Liu and L.P. Jiang                                                                          | 24  |
| <b>Adsorption of Methylene Blue from Aqueous Solution by Anionic Surfactant Modified Montmorillonite</b><br>D.M. Chen, J. Chen, X.M. Wang, X.L. Luan, H.P. Ji and F. Xu                                  | 29  |
| <b>Analysis of Gravity on Tourism Resource of Zhangqiu, Shandong</b><br>B.F. Li, X.G. Liang, J. Ren and Q.S. Li                                                                                          | 35  |
| <b>Analysis of Influencing Factors on Mechanical Properties and Anisotropy of Attapulgite/NR Composites</b><br>X.L. Lu, Q.G. Tang, J.S. Liang, Y. Ding and H. Guo                                        | 41  |
| <b>Analysis of Influencing Factors on the Structure and Surface Properties of Palygorskite</b><br>Q.G. Tang, F. Wang, L.W. Li and J.S. Liang                                                             | 47  |
| <b>Application Mineralogy Characteristics of the Industrial Vermiculite from Different Mines in China</b><br>T.J. Peng, H.J. Sun and H.F. Liu                                                            | 53  |
| <b>Biodegradation of Swainsonine by <i>Stenotrophomonas maltophilia</i> Strain YLZZ-2 and its Isolation and Identification</b><br>X.H. Zhao, X. He and J.H. Wang                                         | 59  |
| <b>Catalytic Performance of SO<sub>2</sub> by Colloidal Gold Supported on Nano <math>\gamma</math>-Fe<sub>2</sub>O<sub>3</sub></b><br>S.R. Xu, Q. Shuai, J.H. Cheng and X.G. Wang                        | 65  |
| <b>Development and Application of Health Stone in Healthy Housing</b><br>Q.S. Li, W. Hong and G.Z. Xing                                                                                                  | 71  |
| <b>Development of Ion Materials and Health Methodology</b><br>B. Guo, Q.S. Li and Z.Z. Jin                                                                                                               | 77  |
| <b>Development Trend of Traffic Tools and Prospect of Ecological Environment Functional Materials</b><br>J.Q. Zhang and J.H. Li                                                                          | 83  |
| <b>Effect of Activating Device on the Properties of Tap Water</b><br>D.M. Zhang, J.S. Liang, Y. Ding and C. Li                                                                                           | 86  |
| <b>Effect of Attapulgite and Carbon Black on the Properties of Natural Rubber</b><br>M. Yang, S. Hu, S.Y. Shen and T. Li                                                                                 | 92  |
| <b>Effect of Mineral Composite Fillers on Properties of Man-Made Plywood</b><br>H.X. Shao, Q.G. Tang, J.S. Liang and Y. Ding                                                                             | 97  |
| <b>Effect of Nanometer Far-Infrared Materials on the Cleanability of Ceramic Glazes</b><br>L.J. Wang, J.S. Liang, W.B. Xu and D.Y. Han                                                                   | 103 |
| <b>Effect of Zn on the Photoluminescence of Polycrystalline Diamond Compacts</b><br>K. Gao, Z.H. Li, P.F. Wang, X.S. Li, Y.M. Zhu and K.Y. Wang                                                          | 109 |
| <b>Effects of Heat Treatment on Crystal Structure and Reactivity of Sericite</b><br>X. Xu, H. Ding, N. Liang, Y.B. Wang and W. Yan                                                                       | 113 |
| <b>Nonstoichiometric Lithium Iron Phosphate Synthesized by Hydrothermal Route</b><br>X.Q. Ou, G.C. Liang, L. Wang, Q.Z. Song and Z.R. Wang                                                               | 118 |

|                                                                                                                                                                                                                                                                  |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Effects of Wet Grinding Process on the Properties of the Ground Diatomite Particles</b><br>X.M. Wang, Y.X. Deng and Y.F. Li                                                                                                                                   | 124 |
| <b>Electric Dipole Characteristics of Mineral Tourmaline Superfine Powders and its Properties of Far Infrared Emission</b><br>L.J. Han, J.P. Meng, J.S. Liang, K. Gan, Y. Ding and Y.D. Yuan                                                                     | 129 |
| <b>Electrodialysis Production of Hypophosphorous Acid with Ti-PbO<sub>2</sub> Anode</b><br>A.H. Guo, X.J. Tang and B.G. Zhang                                                                                                                                    | 133 |
| <b>Enhanced Coagulation on Micro-Polluted Raw Water by Attapulgite Clay and PAC Combination Process</b><br>H. Han, X. Gu, J.L. Jiang, D. Li and W. Wang                                                                                                          | 137 |
| <b>Enhancement of Electrochemical Performance of Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub>/C Composite Prepared by Sol-Gel Method</b><br>L. Wang, Y. Shan, Z.L. Zhang, G.C. Liang and X.Q. Ou                                                                   | 143 |
| <b>Environmental-Friendly Soy Protein Isolate/Poly(Vinyl Alcohol) Blend Films: Biodegradation Behaviors</b><br>J.F. Su, S.S. Wang and W.L. Xia                                                                                                                   | 151 |
| <b>Hydrophobic Ceramic Surface by Sol-Gel Method</b><br>Z.S. Zheng, P.Q. Yan, R.J. Li and H. Yang                                                                                                                                                                | 156 |
| <b>Influence of Tourmaline on Saturation Vapor Pressure of Water</b><br>Y.L. Han, J.S. Liang, J.P. Meng, P.P. Wang and X. Mu                                                                                                                                     | 162 |
| <b>Influence of Rare Earth Materials on pH Value and Oxidation Reduction Potential (ORP) of Drinking Water</b><br>L.R. Huang and Y.H. Chen                                                                                                                       | 167 |
| <b>Kinetics of LiFePO<sub>4</sub> Cathode Material Prepared by Carbothermal Reduction Method</b><br>X.F. Jie, G.C. Liang, L. Wang, X.K. Zhi and L.M. Gao                                                                                                         | 172 |
| <b>Mechanism and Performance Analysis of Easy-Cleaning Ceramics</b><br>Q.G. Tang, L.J. Wang, J.Y. Li and X.H. Liang                                                                                                                                              | 180 |
| <b>Mineral Sepiolite Energy-Saving Residential Materials</b><br>D.H. Jiang, A.G. Li, F.E. Shi and R.S. Ren                                                                                                                                                       | 185 |
| <b>Modification of Natural Clinoptilolite and its Uptake of NH<sub>4</sub><sup>+</sup></b><br>Z.Y. Ji, J.S. Yuan and M. Su                                                                                                                                       | 191 |
| <b>Phenol Degradation in the System of H<sub>2</sub>O<sub>2</sub>/Porous Tourmaline Composite Materials</b><br>C. Li, Y. Ding, J.P. Meng and L.F. Zhao                                                                                                           | 196 |
| <b>Preparation and Characterization of La<sub>0.9</sub>Sr<sub>0.1</sub>Co<sub>0.5</sub>Mn<sub>0.5</sub>O<sub>3</sub> Composite Catalytic Materials for Conversion of Exhaust Gas from Natural Gas Automobiles</b><br>X.F. Zhang, G. Xue, J.S. Liang and L. Zhang | 202 |
| <b>Preparation and Decolorization Properties of Active Industrial Vermiculites</b><br>B.L. Su, T.J. Peng and G.H. Ma                                                                                                                                             | 210 |
| <b>Preparation and Functionality Research of Anion Functional Fabrics</b><br>Q.S. Li and M.S. Xu                                                                                                                                                                 | 216 |
| <b>Preparation and Properties of Expanded Vermiculite/Gypsum Thermal Insulation Boards</b><br>Y.G. Xi, T.J. Peng, H.F. Liu and J.M. Chen                                                                                                                         | 220 |
| <b>Preparation and Properties of Zn<sup>2+</sup>/Diatomite Antibacterial Agent</b><br>N. Liang, H. Ding, Y.T. Hu and B.K. Wang                                                                                                                                   | 226 |
| <b>Preparation of Acicular Basic Magnesium Carbonate by the Activation Product of Chrysotile Asbestos Tailing</b><br>Y.P. Jiang, T.J. Peng and H.J. Sun                                                                                                          | 230 |
| <b>Preparation of Epoxy Resin/Montmorillonite Composites by Monomer Insert <i>In Situ</i> Polymerization</b><br>J. Xie, S.Y. Shen, Y.X. Luo, M.M. Zhang and Y. Chen                                                                                              | 236 |
| <b>Preparation Sericite Nanoflakes by Exfoliation of Wet Ultrafine Grinding</b><br>H. Ding, X. Xu, N. Liang and Y.B. Wang                                                                                                                                        | 242 |
| <b>Reaction Mechanism of LiFePO<sub>4</sub>/C Cathode Materials Synthesized by Carbothermal Reduction Method</b><br>L.M. Gao, G.C. Liang, L. Wang, X.K. Zhi and X.F. Jie                                                                                         | 248 |
| <b>Remediation of Groundwater Contaminated by BTEX Using a Biological Barrier</b><br>X.L. Liu, L. Zhao, S.J. Liu and C.Y. Cui                                                                                                                                    | 254 |

|                                                                                                                                                                     |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Research and Application of Micro-Environmental Control Technology in Animal Breeding Industry</b>                                                               |     |
| J.S. Liang, D.M. Zhang, Y. Ding and J.P. Meng                                                                                                                       | 260 |
| <b>Room Temperature PL Characterization of Polycrystalline Diamond Prepared by HPHT</b>                                                                             |     |
| Z.H. Li, K. Gao, X.S. Li, Y.M. Zhu and P.F. Wang                                                                                                                    | 265 |
| <b>Structure and Properties of Electrodeposited FePt Films</b>                                                                                                      |     |
| C.X. Li, Z.H. Li, X.Y. Du and S.Y. Shi                                                                                                                              | 270 |
| <b>Surfactant Assisted Synthesis of Spindle-Shaped Nanostructured LiFePO<sub>4</sub></b>                                                                            |     |
| C. Liu, X.J. Ji, S.S. Zhao, D.X. Ma and S. Li                                                                                                                       | 275 |
| <b>Synergistic Effects of Zinc Oxide on Intumescent Flame-Retarded Polypropylene Composites</b>                                                                     |     |
| S. Hu, H. Zheng, S.Y. Shen, H.C. Han, H. Jing and S. Li                                                                                                             | 279 |
| <b>Synthesis and Characterization of Attapulgite Clay Coated Ag/AgBr/TiO<sub>2</sub> Visible Light Photocatalyst</b>                                                |     |
| X. Gu, J.L. Jiang and D. Li                                                                                                                                         | 285 |
| <b>Synthesis and Magnetic Properties of FePt /Silica Core-Shell Nanoparticles</b>                                                                                   |     |
| C.X. Li, Z.H. Li, X.Y. Du and H.X. Guo                                                                                                                              | 291 |
| <b>Synthesis of Ordered Lamellar Nanostructured Zirconia via SDS Template</b>                                                                                       |     |
| S.S. Zhao, C. Liu, X.J. Ji, S. Li and D.X. Ma                                                                                                                       | 296 |
| <b>Synthesis of Potassium Ionic Sieve Membrane and its Selectivity to Potassium Ion in Seawater</b>                                                                 |     |
| J.S. Yuan, F. Li, H.R. Han and Z.Y. Ji                                                                                                                              | 300 |
| <b>Theoretical Calculation for Far Infrared Emissivity of Tourmaline Powder Materials</b>                                                                           |     |
| P.P. Wang, J.S. Liang, J.P. Meng, Y. Ding and Y.L. Han                                                                                                              | 308 |
| <b>Thermal and Hydrothermal Stability of Al-Pillared Rectorites</b>                                                                                                 |     |
| H.Y. Xu, X.T. Chen and A.H. Guo                                                                                                                                     | 314 |
| <b>Thermal Insulation Coatings Containing Sepiolite Mineral Fibers and their Performance</b>                                                                        |     |
| C. Chen, F. Wang, J.S. Liang and Q.G. Tang                                                                                                                          | 318 |
| <b>TiO<sub>2</sub>/Kaolinite Photocatalytic Material of Fe<sup>3+</sup> Chemical Doping and Fe<sub>2</sub>O<sub>3</sub> Heat-Banding and its Mechanism Analysis</b> |     |
| C.H. Bai, S.L. Zheng, Z.M. Sun, S.M. Lei, J.Y. Gui, F.L. Lv and M. Wen                                                                                              | 324 |
| <b>XRD Study of Hydrophlogopite Intercalated with Alkyl Quaternary Ammonium Salt</b>                                                                                |     |
| H.J. Sun, T.J. Peng, H.F. Liu and J.M. Sun                                                                                                                          | 330 |

## II. Testing Technology and Evaluation Method

|                                                                                                                                                 |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Evaluation of Thermal Insulation Properties of Fibrous Mineral Fine Powders</b>                                                              |     |
| F. Wang, J.S. Liang, C.Y. Ren and Q.G. Tang                                                                                                     | 339 |
| <b>Humidity Sensing Characteristics of Montmorillonite Ion Conductors</b>                                                                       |     |
| H.F. Liu, T.J. Peng, H.J. Sun and Q.W. Xie                                                                                                      | 344 |
| <b>Object Detection Based on Visual Selective Attention Mechanism</b>                                                                           |     |
| J.Z. Sun, E.H. Liu and C.B. Li                                                                                                                  | 350 |
| <b>Plasmid Fingerprinting Profiles of Chicken-Derived Pathogenic Strains of <i>Escherichia coli</i></b>                                         |     |
| C.G. Wang, T. Zhang and X.H. Zhao                                                                                                               | 355 |
| <b>Simultaneous Determination of Nonylphenol and Short-Chain Nonylphenol Polyethoxylates by Gas Chromatography Coupled to Mass Spectrometry</b> |     |
| Y.S. Qiao                                                                                                                                       | 361 |
| <b>Standardization of Antibacterial Bone China</b>                                                                                              |     |
| L.J. Wang and J.S. Liang                                                                                                                        | 367 |

## III. University Education

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| <b>Advances in Microscale Polymer Chemistry</b>                            |     |
| Q.S. Li, W. Hong, M.S. Xu and S.Y. Zhang                                   | 373 |
| <b>Cultivation and Practice of Engineering Masters' Innovative Ability</b> |     |
| Q.G. Tang, J.S. Liang, Q.Y. Wang and F. Wang                               | 378 |

