



## 目 次

### · 轻工技术与工程 ·

- 铝盐改性膨润土对竹浆绿液中硅酸盐的吸附动力学研究 ..... 林涛, 付玥, 徐永建, 等(1)  
硅对碳酸钙性能及纸张加填的影响 ..... 李金宝, 陈旭波, 夏新兴, 等(8)  
碱预处理对玉米秸秆酶解效果的影响 ..... 迟聪聪, 柳咪, 龚亚辉, 等(13)  
玻璃纤维基黑色吸音阻燃纸浸胶方式的研究 ..... 徐永建, 周会宁, 左磊刚, 等(19)  
沙拉菲尼尔直接大红4GE对无尘原纸染色工艺研究 ..... 张素风, 曹书苗, 万婧(24)  
铅/镉复合污染物对金盏菊生长的影响及在其体内富集特征 ..... 丁绍兰, 杜波, 范春辉(30)

- 罗丹明类小分子荧光探针对水中  $Hg^{2+}$  检测的比较研究 ..... 吕向菲, 李婷, 霍霄楠, 等(34)

### · 材料科学与工程 ·

- 柠檬酸辅助合成  $NaLa(MoO_4)_2:Eu^{3+}$  及其发光性能 ..... 刘运, 高伟萍, 史晓磊, 等(40)  
热处理温度对 Ce掺杂  $TiO_2$  光催化剂结构与性能的影响 ..... 樊国栋, 王丽娜(46)  
血红蛋白在海胆状  $WO_3$  微球上的直接电化学性质及对过氧化氢的传感性能研究 .....  
刘辉, 郭凯, 段聪越, 等(50)  
溶胶-凝胶法合成  $Li_3V_2(PO_4)_3/C$  复合材料及其合成活化能研究 .....  
夏傲, 黄剑锋, 谈国强(56)  
 $C/C-ZrC$  复合材料抗烧蚀性能研究 ..... 李翠艳, 畅丽媛, 曹丽云, 等(60)  
钛酸镧钠的溶剂热合成研究 ..... 孔新刚, 耿乔, 曹丽云, 等(66)  
铈-氟-纳米二氧化钛光催化剂的制备及光催化性能研究 .....  
刘保健, 高玉刚, 于凯烁, 等(70)

### · 化学与化学工程 ·

- PVA纤维改性聚丙烯酸酯亲水涂层的制备及性能 ..... 王海花, 徐文会, 郭丽媛, 等(76)

- 反应条件对配体交换法制备纳米粒子的影响及其在比色检测中的应用 ..... 杨 冬(82)  
芥酸酰胺丙基-N,N-二甲基叔胺盐的流变性能 ..... 杨晓武, 秋列维, 王 刹, 等(89)  
稠油破乳剂 P(AM/DMC)的合成及性能研究 ..... 郭 睿, 张 菲, 王晓霞, 等(94)  
不同气体对注烃气混相驱油效果的影响 ..... 祝浪涛, 廖新维, 赵晓亮, 等(100)  
超低渗透油藏核磁共振可动流体研究——以鄂尔多斯盆地西南部长 8 储层为例 .....  
..... 闫子旺, 张红玲, 周晓峰, 等(105)

• 生命科学与工程 •

- 响应面法优化黑果枸杞色素的提取工艺 ..... 刘树兴, 赵广蒙, 杨 麒(110)  
微波法辅提灵芝多糖及体外抗氧化研究 ..... 董文宾, 王世鹏(115)  
海红果白兰地蒸馏残液提取海红果干中糖酸工艺研究 ..... 杨 辉, 田郭鹏, 刘子贤(120)  
化能自养菌氨单加氧酶基因的克隆 ..... 龚国利, 张 甜, 史政豪, 等(125)  
正丙醇/碳酸钠双水相体系提取发酵液中  $\gamma$ -聚谷氨酸的研究 .....  
..... 张智维, 刘 婷, 韩 飞(130)

• 机械工程 •

- 气泡雾化喷嘴气液两相流体混合流动的数值模拟 ..... 袁越锦, 谭礼斌, 徐英英, 等(135)  
大枣切片真空低温干燥技术及工艺的分析 ..... 文怀兴, 俞祖俊, 史鹏涛(141)  
涂层硬质合金刀具加工碳钢切削性能及磨损机理研究 .....  
..... 陈 威, 吕政琳, 高东强, 等(146)

- 凹六边形蜂窝芯材共面准静态力学行为 ..... 孙德强, 张小强, 王复会, 等(153)  
塔式起重机附墙后塔身受力分析 ..... 刘 金, 黄国健, 卢立东, 等(157)  
材料模型对裂纹尖端力学特性的影响 ..... 马颖化, 李学成, 李 涛(163)

• 电气工程与信息技术 •

- 一种氨气变送器温度补偿方法的研究与实现 ..... 张根宝, 谢晓静, 程振晨(167)  
智能稀释水阀中关键问题的研究 ..... 刘文波, 王孟效(171)  
基于 MC33067 的高效率全桥 LLC 谐振变换器的研制 .....  
..... 李晓明, 史永胜, 雷怀光, 等(178)

• 物理与数学科学 •

- 复广义正定矩阵的定义及其相关性质 ..... 蔡小林, 蔡彦玲(183)  
具有扩散及功能性反应的周期脉冲捕食-被捕食系统研究 ..... 李 靖, 窦家维(186)



## CONTENTS

- Kinetics of adsorption of silicate in bamboo pulp green liquor by aluminum salts modified bentonite ...  
..... LIN Tao, FU Yue, XU Yong-jian, et al(1)
- Effect of silicon on properties of calcium carbonate and paper ..... LI Jin-bao, CHEN Xu-bo, XIA Xin-xing, et al(8)
- Effects of alkaline pretreatment on the enzymatic hydrolysis efficiency of corn straw ..... CHI Cong-cong, LIU Mi, GONG Ya-hui, et al(13)
- Study on the adding binder ways of black sound absorption and flame retardant paper .....  
..... XU Yong-jian, ZHOU Hui-ning, ZUO Lei-gang, et al(19)
- Dyeing performance of solophenyl direct scarlet 4GE on air-laid paper .....  
..... ZHANG Su-feng, CAO Shu-miao, WAN Jing(24)
- The growth and bioaccumulation characteristic of *Calendula officinalis* L under lead/cadmium co-contamination ..... DING Shao-lan, DU Bo, FAN Chun-hui(30)
- Comparison of detection for  $Hg^{2+}$  in water by rhodamine fluorescence probes .....  
..... LV Xiang-fei, LI Ting, HUO Xiao-nan, et al(34)
- Citric acid-assisted synthesis of  $NaLa(MoO_4)_2 : Eu^{3+}$  phosphors and luminescence properties .....  
..... LIU Yun, GAO Wei-ping, SHI Xiao-lei, et al(40)
- Annealing temperature on the influence of the structure and photocatalytic performance of Ce Doped  $TiO_2$  ..... FAN Guo-dong, WANG Li-na(46)
- A novel  $H_2O_2$  biosensing based on the direct electrochemistry of hemoglobin on urchin-like  $WO_3$  micro-spheres ..... LIU Hui, GUO Kai, DUAN Cong-yue, et al(50)
- Preparation and synthesized activation energy of  $Li_3V_2(PO_4)_3/C$  composites by sol-gel method .....  
..... XIA Ao, HUANG Jian-feng, TAN Guo-qiang(56)
- The ablation resistance properties of C/C-ZrC composites .....  
..... LI Cui-yan, CHANG Li-yuan, CAO Li-yun, et al(60)
- Study on solvothermal synthesis of lanthanum sodium titanate .....  
..... KONG Xin-gang, GENG Qiao, CAO Li-yun, et al(66)
- Preparation of nano-TiO<sub>2</sub> doped with Ce,F and its performance for photocatalytic degradation of organic pollutions ..... LIU Bao-jian, GAO Yu-gang, YU Kai-shuo, et al(70)
- Preparation and properties of polyacrylate hydrophilic coating modified with PVA fiber .....  
..... WANG Hai-hua, XU Wen-hui, GUO Li-yuan, et al(76)
- Effect of reaction condition on nanoparticles modified by ligand exchange and application of nanoparticle in colorimetric protein detection ..... YANG Dong(82)

Rheological properties of surfactant 13-Docosenamide, N-[3-(dimethylamino)propyl]-, (13Z)- salt	YANG Xiao-wu , QIU Lie-wei , WANG Zhao , et al(89)
Synthesis and properties of heavy oil demulsifier P(AM/DMC)	GUO Rui , ZHANG Fei , WANG Xiao-xia , et al(94)
Effects of different gases on hydrocarbon miscible displacements	ZHU Lang-tao , LIAO Xin-wei , ZHAO Xiao-liang , et al(100)
Research on movable fluids in ultra-low permeability reservoir with NMR technology: An example from southwest chang 8 reservoir in Ordos Basin	YAN Zi-wang , ZHANG Hong-ling , ZHOU Xiao-feng , et al(105)
Optimization of extraction conditions of pigment from <i>Lycium ruthenicum</i> Murr. by response surface methodology	LIU Shu-xing , ZHAO Guang-meng , YANG Qi(110)
Research in auxiliary mention and antioxidant in vitro of ganoderma iucidum polysaccharides	DONG Wen-bin , WANG Shi-peng(115)
Extraction of sugar and acid from dried Haihong fruit with distilled liquid	YANG Hui , TIAN Guo-peng , LIU Zi-xian(120)
To clone the ammonia monooxygenase gene of autotrophic bacteria ammonium oxidation capacity	GONG Guo-li , ZHANG Tian , SHI Zheng-hao , et al(125)
Study on n-propanol/sodium carbonate aqueous two-phase system to extract poly $\gamma$ -glutamic acid from fermentation broth	ZHANG Zhi-wei , LIU Ting , HAN Fei(130)
Numerical simulation of gas-liquid two-phase flow in effervescent atomizer	YUAN Yue-jin , TAN Li-bin , XU Ying-ying , et al(135)
The analysis of cryogenic vacuum drying technology and processes of jujube slices	WEN Huai-xing , YU Zu-jun , SHI Peng-tao(141)
Research on wear modes and cutting mechanism of coated carbide tools in cutting of carbon steel	CHEN Wei , LV Zheng-lin , GAO Dong-qiang , et al(146)
In-plane quasi-static mechanical behavior of cisoidal hexagonal honeycomb cores	SUN De-qiang , ZHANG Xiao-qiang , WANG Fu-hui , et al(153)
Forces analysis on tower body of tower crane after attached to wall	LIU Jin , HUANG Guo-jian , LU Li-dong , et al(157)
Effect of material models on the mechanical properties of the crack tip	MA Ying-hua , LI Xue-cheng , LI Tao(163)
Research and implementation of a temperature compensation for ammonia transmitter	ZHANG Gen-bao , XIE Xiao-jing , CHENG Zhen-chen(167)
Study on key problems of smart dilution water valve	LIU Wen-bo , WANG Meng-xiao(171)
Development of high-efficiency of full-bridge LLC resonant converter based on MC33067	LI Xiao-ming , SHI Yong-sheng , LEI Huai-guang , et al(178)
The definition and properties of a complex generalized positive matrix	LIN Xiao-lin , LIN Yan-ling(183)
The study on a periodic impulsive predator-prey system with diffusion and functional response	LI Jing , DOU Jia-wei(186)