

第 40 卷 第 1 期 2011 年 2 月

### 目 次

- Tm<sup>3+</sup>/Ho<sup>3+</sup>掺杂的 Gd<sub>3</sub>Ga<sub>5</sub>O<sub>12</sub>~2.0 μm 波段红外激光晶体的生长和性能研究 ..... 王燕 涂朝阳 周涵 李坚富 游振宇 朱昭捷(1)
- 有机非线性光学晶体 DAST 的生长、形貌及透过光谱 ..... 李寅 张建秀 傅佩珍 吴以成(7)
- 常压混合碱液条件下 ZnO 单晶生长习性的研究 ..... 赵兰玲 张素芳 王继扬(12)
- 磁控溅射气体参数对氧化铟薄膜特性的影响 ..... 才玺坤 原子健 朱夏明 张兵坡 邱东江 吴惠桢(17)
- 基于螺旋刻划方法的 KDP 晶体临界切削厚度研究 ..... 陈浩锋 王建敏 戴一帆 郑子文 彭小强(22)
- 六面顶压机合成腔中心温度轨迹控制方法研究 ..... 刘衍聪 郭欣 伊鹏 李继涛 任红伟(27)
- 含 Ni-Al 阻挡层硅基 BiFe<sub>0.95</sub>Mn<sub>0.05</sub>O<sub>3</sub> 铁电电容器的结构及物理性能 ..... 陈剑辉 刘保亭 魏大勇 王宽冒 崔永亮 王英龙 赵庆勋 韦梦祥(33)
- 热蒸发快速氧化法制备四枝杈纳米氧化锌 ..... 王万君 张艳 吴海霞(38)
- 无铅高居里点 BaTiO<sub>3</sub>-Bi<sub>0.5</sub>K<sub>0.5</sub>TiO<sub>3</sub> 陶瓷的制备及其 PTC 性能的研究 ..... 韦继峰 蒲永平 毛玉琴(44)
- 化学掺杂 Armchair 石墨纳米带的第一性原理研究 ..... 李昭宁 王六定 王小冬 席彩萍 沈中元 赵景辉 吴宏景(48)
- MPCVD 法在基片边缘生长大颗粒金刚石的研究 ..... 满卫东 翁俊 吴宇琼 吕继磊 董维 汪建华(53)
- CdSe 薄膜的制备及性能表征 ..... 黄平 李婧 梁建 赵君美 马淑芳 许并社(60)
- NiMnCo-C-S 系中掺硫金刚石单晶的研究 ..... 周林 马红安 孙普男 贾晓鹏(66)
- 外延生长四方相 Pb(Zr<sub>0.65</sub>Ti<sub>0.35</sub>)O<sub>3</sub> 薄膜 ..... 刘敬松 李惠琴 曹林洪 徐光亮(70)
- 直流弧光放电 PCVD 金刚石膜制备中基底控温系统的研制与应用 ..... 张湘辉 汪灵 龙剑平(75)
- 泡生法生长蓝宝石单晶的热场改进与模拟优化 ..... 汪传勇 左然 Andrey Smirnov Kirill Mazaev(83)
- CuCl<sub>2</sub>·2H<sub>2</sub>O 晶体聚集体形貌及晶体模型的建立 ..... 王浩锋 赵珊茸 王礼杰 连晨光(88)
- 磷化铟纳米线的溶剂热制备及其表征 ..... 梁建 赵国英 赵君美 张华 贾伟(94)
- Bi<sub>3.25</sub>La<sub>0.75</sub>Ti<sub>3</sub>O<sub>12</sub>纳米片的水热合成及表征 ..... 郑刚 刘晓芳 王岩 刘晓利 王丹 高磊 孙华君 魏铭(100)
- 吸附缺陷对 armchair 型石墨烯纳米条带输运性质的影响 ..... 刘春梅 肖贤波 刘念华(104)
- 工艺因素对非水解溶胶-凝胶法制备钛酸铝纳米粉体的影响 ..... 江伟辉 胡紫 刘健敏 朱庆霞 冯果(109)
- 铝层厚度对铝诱导非晶硅薄膜晶化过程的影响 ..... 梁戈 郭烈萍 李洪涛 蒋百灵 焦核茂(114)

|   |                                    |
|---|------------------------------------|
| 热处理工艺对超声电沉积制备 CuInSe <sub>2</sub> 薄膜的影响 .....   | 邹正光 聂小明 龙飞 陈壁滔(119)                |
| 氧化铝模板热卷曲问题的研究 .....   | 王丹丽 阮永丰 张灵翠 王鹏飞 邱春霞 祝威(124)        |
| 晶格动力学性质对钛酸锶介电行为的影响 .....  | 蔡玉平 韩代朝 宁如云(130)                   |
| 超声波辅助固液反应球磨制备 ZnFe <sub>2</sub> O <sub>4</sub> 纳米晶的研究 .....                                     | 叶插柳 陈鼎 刘红艳(134)                    |
| 模板剂对微波水热合成 CdS 微晶相组成、形貌及光学性能的影响 .....   | 胡宝云 黄剑锋 张钦峰 张海 曹丽云 吴建鹏(139)        |
| 水基流延制备 Li <sub>1.075</sub> Nb <sub>0.625</sub> Ti <sub>0.45</sub> O <sub>3</sub> 微波介质陶瓷基片 ..... | 李绍纯 耿永娟 张启龙 杨辉(144)                |
| PS 微球胶体晶体及其反相 SiO <sub>2</sub> 结构的制备和表征 .....   | 万勇 蔡仲雨 赵修松 李洪亮 夏临华(150)            |
| 溶胶-微乳液-凝胶法合成堇青石陶瓷纳米粉体 .....   | 陆浩然 王少洪 侯朝霞 王浩 牛厂磊 薛召露 王彩 胡小丹(155) |
| 非晶 Ti-Al 过渡层对 Pt/Ba <sub>0.6</sub> Sr <sub>0.4</sub> TiO <sub>3</sub> /Pt 电容器结构和性能的影响 .....     | 赵冬月 刘保亭 郭哲 李曼 陈剑辉 代鹏超 韦梦祎(161)     |
| 薄膜厚度对 Mn-W 共掺杂 ZnO 透明导电薄膜性能的影响 .....  | 张化福 刘瑞金 刘汉法(166)                   |
| ZnSe/ZnS 核壳结构量子点的制备与表征 .....  | 陈秀秀 刘福田 姜庆辉 王群 孙莉 王冬至(170)         |
| Ba <sup>2+</sup> 对 YVO <sub>4</sub> :Dy <sup>3+</sup> 荧光粉发光性能的影响 .....                          | 宋衍滟 赵麦群 何毓阳 高飞山 薛静(176)            |
| Sn <sub>1-x-y</sub> Mn <sub>x</sub> Sb <sub>y</sub> O <sub>2</sub> 体系固溶体的相关关系及形成机制 .....        | 梁镇海 张文涛 张业(181)                    |
| 电化学沉淀法制备纳米结构氧化锌的场发射特性 .....   | 王马华 朱汉清 朱光平(187)                   |
| LaMgAl <sub>11</sub> O <sub>19</sub> 加入对 8YSZ 材料力学性能的影响 .....                                   | 李吉皎 房明浩 黄赛芳 黄朝晖 刘艳改(193)           |
| 电极材料 LiCoO <sub>2</sub> 晶体结构高分辨像模拟 .....  | 闫时建 张敏刚 田文怀 曹林(197)                |
| 邻菲咯啉铜微纳米棒的制备及其影响因素研究 .....  | 陈桂花 王炳喜 尹志刚(201)                   |
| 多片式热壁 MOCVD 反应器的设计与数值模拟分析 .....   | 彭鑫鑫 左然 于海群 陈景升(207)                |
| 粒度对水泥基压电复合材料的压电性能和力学性能的影响 .....   | 龚红宇 张玉军 车松蔚 赵玉军(213)               |
| 介孔氧化锌的微乳液法制备及表征 .....   | 吕华 刘玉民 李双庆 席国喜(218)                |
| MgAl <sub>2</sub> O <sub>4</sub> 粉体的低温燃烧合成与烧结性能 .....   | 白佳海 刘俊成(224)                       |
| Ag <sub>2</sub> V <sub>4</sub> O <sub>11</sub> 纳米线的制备及光吸收性能研究 .....                             | 张绍岩 李英 梁慧霞 邵海丽(229)                |
| 低温燃烧法制备 Nd: YGG 纳米粉体 .....  | 朱晓薇 孙晶 万玉春 于文生 姜慧远 唐红娟(233)        |
| 焙烧温度对 Li[Mn <sub>1/3</sub> Ni <sub>1/3</sub> Co <sub>1/3</sub> ]O <sub>2</sub> 结构及电化学性能影响 ..... | 刘伶 张乃庆 孙克宁(237)                    |
| 水热条件对合成 WO <sub>3</sub> 纳米棒形貌和光吸收特性的影响 .....  | 傅小明 杨在志 徐艳(242)                    |
| 电注入着色氯化钠晶体光谱特性及激活能 .....  | 宋翠英 王瑞 高云娥 成增运 顾洪恩(247)            |
| 直接合成法制备 CdSe@SiO <sub>2</sub> 荧光纳米材料 .....  | 夏姣云 徐万帮(251)                       |
| 聚合物与表面活性剂混合模板调控碳酸钙结晶 .....  | 丁红霞 尹晓爽 杨文忠(258)                   |
| 20G 钢表面喷涂 MoB/CoCr 金属陶瓷涂层的组织性能研究 .....  | 陈枭 张仁元 李风(266)                     |
| 单晶硅电火花铣削维持电压测定及蚀除机理研究 .....   | 鲁清 刘志东 田宗军 邱明波 黄因慧(273)            |
| Cu 掺杂 ZnO 铁磁性的研究 .....  | 肖振林 史力斌(279)                       |
| 高温高压下微斜长石的阻抗谱实验研究 .....   | 胡海英 李和平 代立东 朱成明(284)               |

# JOURNAL OF SYNTHETIC CRYSTALS

Vol. 40, No. 1, February, 2011 (Series No. 159)

## CONTENTS

- Study on Growth and Properties of  $Tm^{3+}/Ho^{3+}$  Doped  $Gd_3Ga_5O_{12} \sim 2.0 \mu\text{m}$  Infrared Laser Crystal ..... WANG Yan, TU Chao-yang, ZHOU Han, et al(1)
- Crystal Growth, Morphology and Transmission Spectrum of the Organic Nonlinear Optical Crystal DAST ..... LI Yin, ZHANG Jian-xiu, FU Pei-zhen, et al(7)
- Investigations on the Growth Habit of ZnO Single Crystals in the Molten Hydrous Alkali Solutions ..... ZHAO Lan-ling, ZHANG Su-fang, WANG Ji-yang(12)
- Effects of Gas Parameters on Properties of  $In_2O_3$  Thin Films Deposited by Magnetron Sputtering ..... CAI Xi-kun, YUAN Zi-jian, ZHU Xia-ming, et al(17)
- Research on Critical Cutting Thickness of KDP Crystals by Spirally Grooving ..... CHEN Hao-feng, WANG Jian-min, DAI Yi-fan, et al(22)
- Study on Temperature Tracking Control Approach of Cubic Press Center ..... LIU Yan-cong, GUO Xin, YI Peng, et al(27)
- Structure and Physical Properties of Si-based  $BiFe_{0.95}Mn_{0.05}O_3$  Ferroelectric Capacitor Using Ni-Al as the Barrier Layer ..... CHEN Jian-hui, LIU Bao-ting, WEI Da-yong, et al(33)
- Synthesis of Tetrapod Nano ZnO Crystals via Quick Oxidizing Zinc Vapor ..... WANG Wan-jun, ZHANG Yan, WU Hai-xia(38)
- Preparation and PTC Behavior of Lead Free High Curie Temperature  $BaTiO_3-Bi_{0.5}K_{0.5}TiO_3$  Ceramics ..... WEI Ji-feng, PU Yong-ping, MAO Yu-qin(44)
- First-Principles Study on Chemical-doped Graphene Nanoribbons with Armchair Edges ..... LI Zhao-ning, WANG Liu-ding, WANG Xiao-dong, et al(48)
- Study on Growth of Large-sized Diamonds at the Substrate Edge by MPCVD ..... MAN Wei-dong, WENG Jun, WU Yu-qiong, et al(53)
- Preparation and Characterization of CdSe Thin Films ..... HUANG Ping, LI Jing, LIANG Jian, et al(60)
- Study on Sulfur-doped Diamond Single Crystal in NiMnCo-C-S System ..... ZHOU Lin, MA Hong-an, SUN Pu-nan, et al(66)
- Epitaxial Growth of Tetragonal  $Pb(Zr_{0.65}Ti_{0.35})O_3$  Thin Films ..... LIU Jing-song, LI Hui-qin, CAO Lin-hong, et al(70)
- Design and Application of Substrate Temperature Control System in DC Arc Discharge PCVD Diamond Films Device ..... ZHANG Xiang-hui, WANG Ling, LONG Jian-ping(75)
- Improvement and Optimization Simulation of the Thermal Fields in Sapphire Crystal Grown by Kyropoulos Method ..... WANG Chuan-yong, ZUO Ran, Andrey Smirnov, et al(83)
- Aggregation Morphologies of  $CuCl_2 \cdot 2H_2O$  and Model of Branchlike Crystal ..... WANG Hao-zheng, ZHAO Shan-rong, WANG Li-jie, et al(88)
- Solvothermal Synthesis and Characterization of InP Nanowires ..... LIANG Jian, ZHAO Guo-ying, ZHAO Jun-fu, et al(94)
- Hydrothermal Synthesis and Characterization of  $Bi_{3.25}La_{0.75}Ti_3O_{12}$  Nanoplates ..... ZHENG Gang, LIU Xiao-fang, WANG Yan, et al(100)
- Effect of Adatom Defect on the Transport Properties of Armchair Graphene Nanoribbon ..... LIU Chun-mei, XIAO Xian-bo, LIU Nian-hua, et al(104)
- Effect of Processing Factor on Preparation of Aluminium Titanate Nanopowder by Non-hydrolytic Sol-gel Method ..... JIANG Wei-hui, HU Zi, LIU Jian-min, et al(109)
- Effect of Aluminum Layer Thickness on Crystallization Process of Aluminum Induced Amorphous Silicon Films ..... LIANG Ge, GUO Lie-ping, LI Hong-tao, et al(114)
- Influences of Heat Treatment on CuInSe<sub>2</sub> Films Prepared by Ultrasound Electrodeposition ..... ZOU Zheng-guang, NIE Xiao-ming, LONG Fei, et al(119)
- Investigation on the Thermal Curling of AAO Template ..... WANG Dan-li, RUAN Yong-feng, ZHANG Ling-cui, et al(124)
- Effect of Lattice Dynamical Properties on Dielectric Behaviour of SrTiO<sub>3</sub> ..... CAI Yu-ping, HAN Dai-zhao, NING Ru-yun(130)
- Study on Synthesis of ZnFe<sub>2</sub>O<sub>4</sub> Nanocrystal by Solid-liquid Reaction Ball Milling Assisted by Ultrasonic ..... YE Cha-liu, CHEN Ding, LIU Hong-yan(134)

|  |   |
|--|---|
| Influence of Templates on the Phase Composition, Morphology and Optical Performance of CdS Microcrystalline Prepared by Microwave Hydrothermal Process .....   | HU Bao-yun, HUANG Jian-feng, ZHANG Qin-feng, et al(139) |
| Aqueous Tape Casting of $\text{Li}_{1.075}\text{Nb}_{0.625}\text{Ti}_{0.45}\text{O}_3$ Microwave Ceramic Sheets .....  | LI Shao-chun, GENG Yong-juan, ZHANG Qi-long, et al(144) |
| Fabrication and Characterization of PS Colloid Crystals and $\text{SiO}_2$ Inverse Structures .....  | WAN Yong, CAI Zhong-yu, ZHAO Xiu-song, et al(150)       |
| Sol-emulsion-gel Synthesis of Cordierite Ceramic Nanopowder ...  | LU Hao-ran, WANG Shao-hong, HOU Zhao-xia, et al(155)    |
| Effect of Amorphous Ti-Al Buffer Layer on the Structure and Properties of $\text{Pt/Ba}_{0.6}\text{Sr}_{0.4}\text{TiO}_3/\text{Pt}$ Capacitors .....           | ZHAO Dong-yue, LIU Bao-ting, GUO Zhe, et al(161)        |
| Effect of Film Thickness on the Properties of Transparent Conductive Mn-W Co-doped Zinc Oxide Films .....  | ZHANG Hua-fu, LIU Rui-jin, LIU Han-fa(166)              |
| Synthesis and Characterization of $\text{ZnSe}/\text{ZnS}$ ( Core/Shell) Quantum Dots .....  | CHEN Xiu-xiu, LIU Fu-tian, JIANG Qing-hui, et al(170)   |
| Effect of $\text{Ba}^{2+}$ on the Luminescence Properties of $\text{YVO}_4:\text{Dy}^{3+}$ Phosphor .....  | SONG Yan-yan, ZHAO Mai-qun, HE Yu-yang, et al(174)      |
| Phase Relation and Formation Mechanism of the Ternary System $\text{Sn}_{1-x},\text{Mn},\text{Sb},\text{O}_2$ Solid Solution .....                             | LIANG Zhen-hai, ZHANG Wen-tao, ZHANG Ye(181)            |
| Investigation on the Field Emission Performance of $\text{ZnO}$ Rod Arrays Prepared by the Electrochemical Precipitation Method .....                          | WANG Ma-hua, ZHU Han-qing, ZHU Guang-ping(187)          |
| Effects of $\text{LaMgAl}_{11}\text{O}_{19}$ Addition on the Mechanical Properties of 8YSZ Materials .....   | LI Ji-jiao, FANG Ming-hao, HUANG Sai-fang, et al(193)   |
| High Resolution Image Simulation for Electrode Materials $\text{LiCoO}_2$ .....  | YAN Shi-jian, ZHANG Min-gang, TIAN Wen-huai, et al(197) |
| Preparation of 1,10-Phenanthroline-copper( II ) Micro- and Nanorod and Its Influencing Factors .....   | CHEN Gui-hua, WANG Bing-xi, YIN Zhi-gang(201)           |
| Design and Numerical Simulation of a Multi-wafer Hot-wall MOCVD Reactor .....  | PENG Xin-xin, ZUO Ran, YU Hai-qun, et al(207)           |
| Influence of Particle Size on the Piezoelectric and Mechanical Properties of Cement Based Piezo-composites .....   | GONG Hong-yu, ZHANG Yu-jun, CHE Song-wei, et al(213)    |
| Preparation and Characterization of Mesoporous $\text{ZnO}$ by Microemulsion Method .....  | LV Hua, LIU Yu-min, LI Shuang-qing, et al(218)          |
| Low-temperature Combustion Synthesis and Sintering Properties of $\text{MgAl}_2\text{O}_4$ Powders .....   | BAI Jia-hai, LIU Jun-cheng(224)                         |
| Synthesis and Absorption Performance of $\text{Ag}_{2}\text{V}_4\text{O}_{11}$ Nanowires .....   | ZHANG Shao-yan, LI Ying, LIANG Hui-xia, et al(229)      |
| Preparation of Nd: YGG Nanopowders by Low Temperature Combustion Method .....  | ZHU Xiao-wei, SUN Jing, WAN Yu-chun, et al(233)         |
| Effect of Calcining Temperature on the Structure and Electrochemical Performance of $\text{Li}[\text{Mn}_{1/3}\text{Ni}_{1/3}\text{Co}_{1/3}]\text{O}_2$ ..... | LIU Ling, ZHANG Nai-qing, SUN Ke-ning(237)              |
| Influence of Hydrothermal Condition on the Optical Absorption Properties and Morphologies of $\text{WO}_3$ Nanorods .....                                      | FU Xiao-ming, YANG Zai-zhi, XU Yan(242)                 |
| Spectral Properties and Activation Energy of Sodium Chloride Crystals Colored Electrolytically .....   | SONG Cui-ying, WANG Rui, GAO Yun-e, et al(247)          |
| Preparation of $\text{CdSe}@\text{SiO}_2$ Fluorescent Nanomaterials by Direct Synthesis Method .....   | XIA Jiao-yun, XU Wan-bang(251)                          |
| Crystallization of $\text{CaCO}_3$ Induced by Mixed Template of Polymer and Surfactant .....   | DING Hong-xia, YIN Xiao-shuang, YANG Wen-zhong(258)     |
| Research on Microstructure and Performance of MoB/CoCr Cermet Coatings Sprayed on 20G Steel Surface .....  | CHEH Xiao, ZHANG Ren-yuan, LI Feng(266)                 |
| Sustaining Voltage Measurement and Erosion Mechanism of Single-crystal Silicon by Electrical Discharge Milling .....   | LU Qing, LIU Zhi-dong, TIAN Zong-jun, et al(273)        |
| Study on Ferromagnetic Properties of Cu Doped $\text{ZnO}$ .....   | XIAO Zhen-lin, SHI Li-bin(279)                          |
| Experimental Study on Impedance Spectra of Microcline under High Temperature and High Pressure .....   | HU Hai-ying, LI He-ping, DAI Li-dong, et al(284)        |