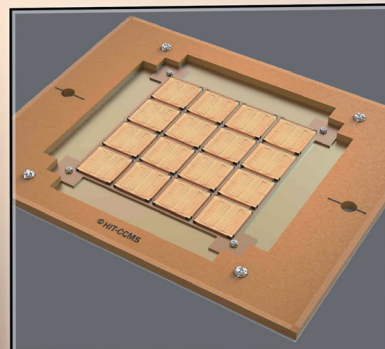
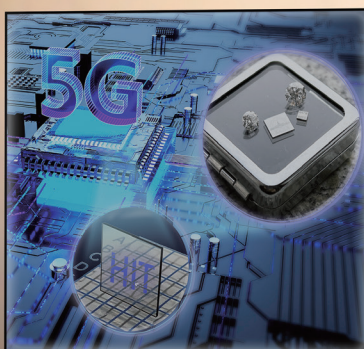
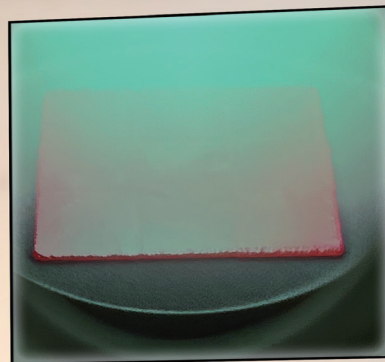
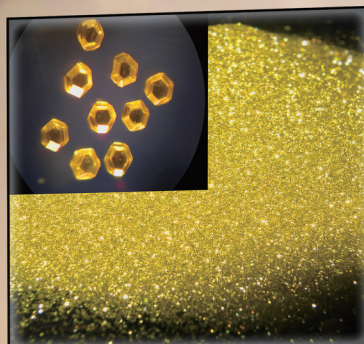


人工晶体学报

JOURNAL OF SYNTHETIC CRYSTALS

2022年5月 第51卷 第5期 Vol.51 No.5

“超硬材料与特殊环境晶体生长技术”专题



纪录片

中国金刚石研究发展史

《人工晶体学报》

专论：我国化学气相沉积(CVD)金刚石膜研究三十年

化学气相沉积(CVD)金刚石研究现状和发展趋势

立方氮化硼的研究进展

主办：中材人工晶体研究院有限公司

人工晶体学报

RENGONG JINGTI XUEBAO

第 51 卷 第 5 期 2022 年 5 月

目 次

· “超硬材料与特殊环境晶体生长技术”专题 ·

专 论

我国化学气相沉积(CVD)金刚石膜研究三十年 吕反修,李成明(753)

综合评述

化学气相沉积(CVD)金刚石研究现状和发展趋势
..... 李成明,任飞桐,邵思武,牟恋希,张钦睿,何 健,郑宇亭,刘金龙,魏俊俊,陈良贤,吕反修(759)

立方氮化硼的研究进展 刘彩云,高 伟,殷 红(781)

金刚石辐射伏特效应同位素电池器件研究进展
..... 刘本建,张 森,郝晓斌,文东岳,赵继文,王伟华,刘 康,曹文鑫,代 兵,杨 磊,韩杰才,朱嘉琦(801)

CVD 人造金刚石核辐射探测器研究进展
..... 牟恋希,曾翰森,朱肖华,屠菊萍,刘金龙,陈良贤,魏俊俊,李成明,欧阳晓平(814)

硼协同掺杂金刚石单晶的高温高压合成 王志文,马红安,陈良超,蔡正浩,贾晓鹏(830)

单晶金刚石 p 型和 n 型掺杂的研究 牛科研,张 璇,崔博垚,马永健,唐文博,魏志鹏,张宝顺(841)

纳米金刚石表面功能化对其性能影响的研究进展
..... 赵紫薇,高小武,曹文鑫,刘 康,代 兵,王永杰,朱嘉琦(852)

纳米金刚石薄膜的掺杂、表/界面调控及性能研究 胡晓君,郑玉浩,陈成克,鲁少华,蒋梅燕,李 晓(865)

新型功能碳材料的高压截获 吕超凡,臧金浩,杨西贵,单崇新(875)

过渡金属轻元素化合物的高温高压制备 由存,赵巍,王欣,董书山,陶强,朱品文(881)

研究论文

高质量硼掺杂单晶金刚石同质外延及电学性质研究 王若铮,闫秀良,彭博,林芳,魏强,王宏兴(893)

人造金刚石单晶薄膜的制备及表面形貌优化

..... 殷梓萌,郑凯文,邹幸洁,路鑫宇,陈凯,叶煜聪,胡文晓,陶涛(901)

MPCVD 金刚石薄膜微波功率和沉积压力匹配性研究

..... 张帅,安康,邵思武,黄亚博,杨志亮,陈良贤,魏俊俊,刘金龙,郑宇亭,李成明(910)

纳米金刚石的结构、光学性能和热稳定性研究 程学瑞,皇甫战彪,蔡玉乐,武玺旺,杨坤(920)

基于光谱测试的纯净金刚石品质与缺陷研究 张宇飞,王凯悦,李俊林,秦振兴,田玉明(926)

Ti、V、Ni、Mo 对 CVD 金刚石涂层形核影响 简小刚,彭薪颖,杨天,胡吉博,尹明睿(933)

大尺寸单晶金刚石磨抛一体化加工研究 温海浪,陆静,李晨,胡光球(941)

· 评述广角 ·

宝石设计中的美学风格研究 冯中强(948)

JOURNAL OF SYNTHETIC CRYSTALS

Vol. 51, No. 5 May 2022 (Series No. 283)

CONTENTS

• Crystal Growth Technology for Diamond and Extreme Condition Materials •

Highlight

Thirty Years of Chemical Vapor Deposition (CVD) Diamond Films Research in China

..... LYU Fanxiu, LI Chengming(753)

Reviews

Progress of Chemical Vapor Deposition (CVD) Diamond

..... LI Chengming,

REN Feitong, SHAO Siwu, MU Lianxi, ZHANG Qinrui, HE Jian, ZHENG Yuting, LIU Jinlong, WEI Junjun, CHEN Liangxian, LYU Fanxiu(759)

Research Progress of Cubic Boron Nitride LIU Caiyun, GAO Wei, YIN Hong(781)

Research Progress on Diamond Radio-Voltaic Effect Isotope Batteries Devices

..... LIU Benjian,

ZHANG Sen, HAO Xiaobin, WEN Dongyue, ZHAO Jiwen, WANG Weihua, LIU Kang, CAO Wenxin, DAI Bing, YANG Lei, HAN Jiecai, ZHU Jiaqi(801)

Research Progress of Nuclear Radiation Detectors with CVD Synthetic Diamond

..... MU Lianxi, ZENG Hansen, ZHU Xiaohua, TU Juping, LIU Jinlong, CHEN Liangxian, WEI Junjun, LI Chengming, OUYANG Xiaoping(814)

HPHT Synthesis of Boron Co-Doped Single Crystal Diamond

..... WANG Zhiwen, MA Hongan, CHEN Liangchao, CAI Zhenghao, JIA Xiaoping(830)

Study on p-Type and n-Type Doping of Single Crystal Diamond

..... NIU Keyan, ZHANG Xuan, CUI Boyao, MA Yongjian, TANG Wenbo, WEI Zhipeng, ZHANG Baoshun(841)

Research Progress on the Effects of Surface Functionalization of Nanodiamonds

..... ZHAO Ziwei, GAO Xiaowu, CAO Wenxin, LIU Kang, DAI Bing, WANG Yongjie, ZHU Jiaqi(852)

Doping, Surface/Interface Regulation and Properties of Nanocrystalline Diamond Films

..... *HU Xiaojun, ZHENG Yuhao, CHEN Chengke, LU Shaohua, JIANG Meiyun, LI Xiao*(865)

Retention of New Functional Carbon Materials under High Pressure

..... *LYU Chaofan, ZANG Jinhao, YANG Xigui, SHAN Chongxin*(875)

Transition Metal Light Elements Compounds Synthesized by High Pressure and High Temperature

..... *YOU Cun, ZHAO Wei, WANG Xin, DONG Shushan, TAO Qiang, ZHU Pinwen*(881)

Research Articles

Homoepitaxial Boron Doped Single Crystal Diamond and Its Electrical Properties

..... *WANG Ruozheng, YAN Xiuliang, PENG Bo, LIN Fang, WEI Qiang, WANG Hongxing*(893)

Preparation and Surface Optimization of Synthetic Diamond Single Crystal Film

..... *YIN Zimeng, ZHENG Kaiwen, ZOU Xingjie, LU Xinyu, CHEN Kai, YE Yucong, HU Wenxiao, TAO Tao*(901)

Microwave Power and Deposition Pressure Matching of MPCVD Diamond Films

..... *ZHANG Shuai,*

AN Kang, SHAO Siwu, HUANG Yabo, YANG Zhiliang, CHEN Liangxian, WEI Junjun, LIU Jinlong, ZHENG Yuting, LI Chengming(910)

Structure, Optical Properties and Thermal Stability of Nanodiamond

..... *CHENG Xuerui, HUANGFU Zhanbiao, CAI Yule, WU Xiwang, YANG Kun*(920)

Spectroscopy Characterization Study on Quality and Defects of Pure Diamond

..... *ZHANG Yufei, WANG Kaiyu, LI Junlin, QIN Zhenxing, TIAN Yuming*(926)

Effect of Ti, V, Ni and Mo on Nucleation of CVD Diamond Coating

..... *JIAN Xiaogang, PENG Xinying, YANG Tian, HU Jibo, YIN Mingrui*(933)

Integrated Processing of Grinding and Polishing for Large-Size Single Crystal Diamond

..... *WEN Hailang, LU Jing, LI Chen, HU Guangqiu*(941)