

CHINESE JOURNAL OF
APPLIED CHEMISTRY

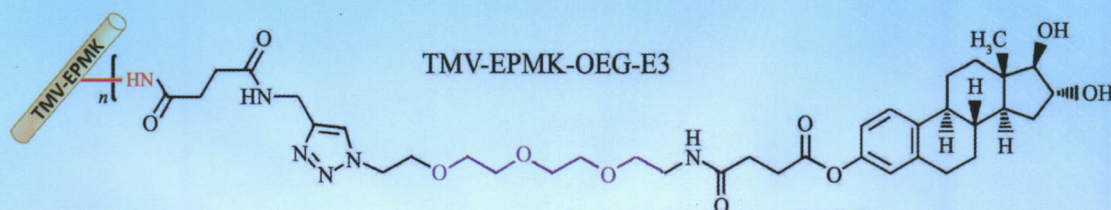
应用化学

Yingyong Huaxue

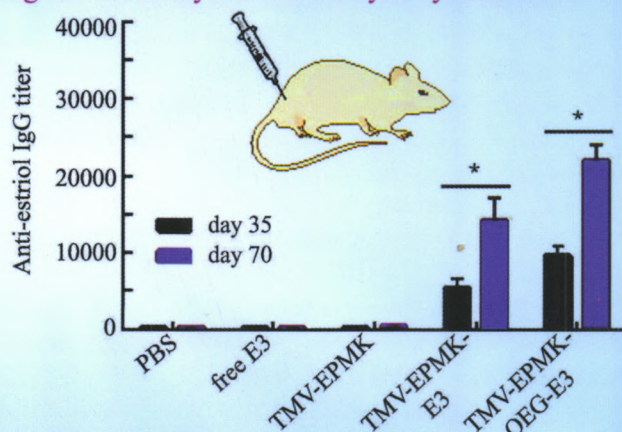
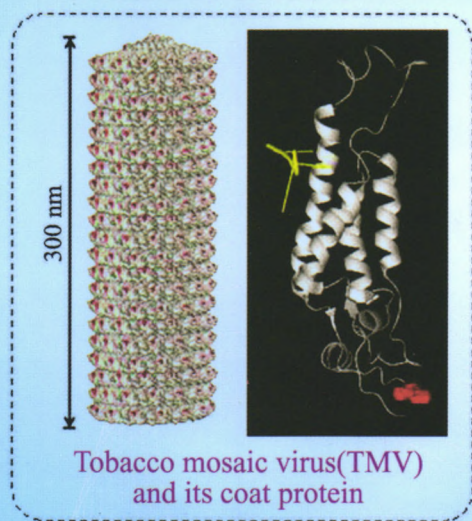
2015

Volume 32 Issue 10

第 32 卷 第 10 期



Estradiol is conjugated to TMV using the Cu-catalyzed azide-alkyne cycloaddition.

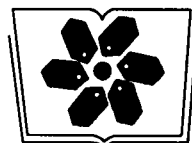


Small molecular estradiol displayed on TMV via a hydrophilic linker elicit strong and long-term IgG antibody response *in vivo*

应用化学

(Yingyong Huaxue)

第 32 卷 第 10 期 2015 年 10 月



中国科学院科学出版基金资助出版

目 次

中文核心期刊

· 封面图片 ·

以烟草花叶病毒为半抗原载体的活体免疫反应

..... 赵 霞 陈利民 胡 君 张晓磊 Jittima Amie Luckanagul 林 园* 王 倩*

利用亲水性连接臂将小分子半抗原连接在烟草花叶病毒载体上,可以有效提高半抗原的免疫原性,并在体内诱导高水平的抗原特异性免疫反应。

详细描述见 1107 ~ 1113 页

· 综合评述 ·

生物法制备各向异性贵金属纳米粒子的研究进展

..... 马新福 郭清泉* 马海翔 陆 瑶 郭秋兰 (1099)

· 研究论文 ·

以烟草花叶病毒为半抗原载体的活体免疫反应

..... 赵 霞 陈利民 胡 君 张晓磊 Jittima Amie Luckanagul 林 园* 王 倩* (1107)

环己基(三甲基硅基亚甲基)锡二芳香酸酯的合成、结构和抗癌活性

..... 林 森* 吴亚弟 邓瑞红 曹迁永 (1114)

三环己基锡 *L*-扁桃酸酯配合物的合成、结构及性质

..... 张复兴* 邝代治 冯泳兰 王剑秋 蒋伍玖 庾江喜 朱小明 (1120)

一种银配合物的合成、晶体结构和荧光性质

..... 薛蒙伟 潘兆瑞* 石儵然 邵 阳 (1127)

苝基查尔酮的合成及三阶非线性光学性质

..... 孙金鱼 石玉芳 王桂林 赵明根* (1134)

无间隔层结构的高效率荧光/磷光混合型白光有机发光二极管

..... 代岩峰 张智强 刘一鹏 马东阁* (1139)

离子液体/乙烯-醋酸乙烯共聚物复合材料的制备与性能

..... 金明月 富露祥 由吉春 李勇进* (1146)

二元醇改性密胺甲醛树脂包覆红磷

..... 马 千 刘增杰 梁 轶 董天贺 韩福芹* (1153)

钨酸钠/过氧化氢体系对葡甲苷伯羟基的选择催化氧化

..... 张 培 袁 华* 吴加雄 张华良 (1159)

活性炭负载 Pt-Fe 双金属催化剂催化对氯硝基苯选择性加氢

..... 谷 牧 何代平* 江 平 尹兴春 陈 虎 (1164)

钛(IV)掺杂氧化锌多壁纳米纤维结构材料的制备及光催化性能

| | |
|--|-----------------|
| 苏碧桃* 邵克让 李建娇 莘俊莲 雷自强 | (1170) |
| 氢气泡模板法制备多孔镍用于电催化氧化乙醇 | 张文彬* 张长财 (1177) |
| 铁酸铜负极材料的微波合成和电化学性能 ... 王 锋 胡新良 张 鹏 赵双琪 丁 瑜* | (1184) |
| 羟基磺基甜菜碱氟碳表面活性剂在油水界面的扩张粘弹性 | |
| 李 亮* 王彦玲 张建军 金家锋 路以文 马 剡 郑晶晶 | (1190) |
| 红树林植物尖瓣海莲内生真菌 <i>Penicillium</i> sp. B21 次级代谢产物的分离鉴定 | |
| 罗由萍 邓鹏飞* 牛燕燕 郑彩娟 闫向阳 陈 军 | (1196) |
| 脐橙果皮的室温和热辅助表面解吸常压化学电离质谱的比较 | |
| 方小伟 钟 涛 姚国灿 高 翔 杨美玲 李 慧 乐长高* 张兴磊* | (1201) |
| 白烟灰的物相分析及酸浸脱砷工艺 | |
| 马 森 黄玉代* 郭 勇 贾殿赠 唐新村 王省超 潘言亮 | (1208) |
| 基于亮蓝为显色剂的高酸度试纸..... 赫春香* 王 微 霍春宝 高 峰* | (1215) |
| | |
| 通知·启事 | (1106) |

* 通讯联系人.

CONTENTS

Cover Picture

In vivo Immune Response Using Tobacco Mosaic Virus as Hapten Carrier

ZHAO Xia, CHEN Limin, HU Jun, ZHANG Xiaolei, LUCKANAGUL Jittima Amie,
LIN Yuan*, WANG Qian*

Using TMV-EPMK as a carrier to conjugate small molecular hapten *via* a hydrophilic linker, the immunogenicity of hapten was enhanced which emerged with high level of specific immune response *in vivo*.

For details see pp1107-1113

Review

Advances on Biogenic Synthesis of Anisotropic Noble Metal Nanoparticles

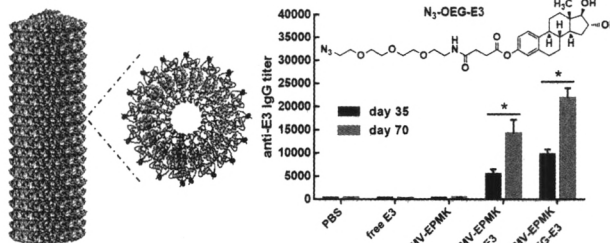
MA Xinfu, GUO Qingquan*, MA Haixiang, LU Yao, GUO Qiulan

2015, 32(10):1099-1106

Full Papers

In vivo Immune Response Using Tobacco Mosaic Virus as Hapten Carrier

ZHAO Xia, CHEN Limin, HU Jun,
ZHANG Xiaolei, LUCKANAGUL Jittima Amie,
LIN Yuan*, WANG Qian*

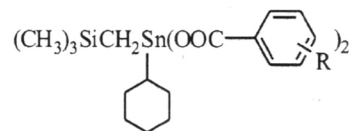


Small molecular hapten displayed on rod-shaped viral nanoparticles *via* a hydrophilic linker elicit strong and long-term IgG antibody response *in vivo*.

2015, 32(10):1107-1113

Synthesis, Structure and Antitumour Activity of Cyclohexyl((trimethylsilyl)methyl)stannediyl Bisarylcarboxylates

LIN Sen*, WU Yadi, DENG Ruihong, CAO Qianyong



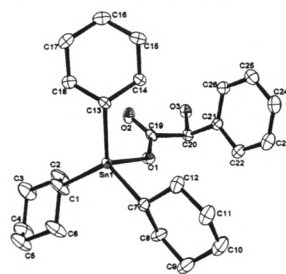
R=H, CH₃-*p*, OCH₃-*p*, F-*p*, Cl-*p*, Br-*p*, NO₂-*p*, NO₂-*m*
Eight cyclohexyl(trimethylsilylmethyl)tin arylcarboxylates were synthesized, and showed good antitumour activities *in vitro* against tumour cells A549.

2015, 32(10):1114-1119

Synthesis, Structure and Properties of
Tricyclohexyltin *L*-Mandelate

ZHANG Fuxing*, KUANG Daizhi, FENG Yonglan,
WANG Jianqiu, YU Jiangxi, JIANG Wujiu, ZHU Xiaoming

2015, **32**(10):1120-1126

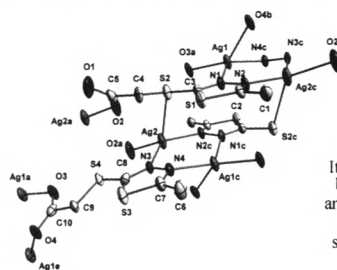


Tricyclohexyltin *L*-mandelate and its enantiomer were synthesized. *In vitro* anticancer activity study showed that *L*-mandelate was significantly stronger than its enantiomer.

Synthesis, Crystal Structure and Fluorescent
Property of a Silver Coordination Compound

XUE Mengwei, PAN Zhaorui*, SHI Xiaoran,
SHAO Yang

2015, **32**(10):1127-1133

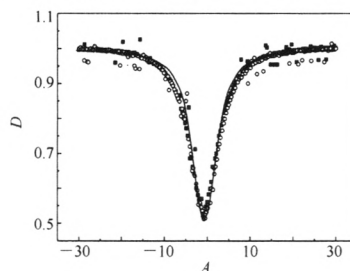


A new coordination compound [Ag(mtyaa)]₂ · 5(H₂O) has been synthesized. Its structure has been determined by single-crystal X-ray diffraction analysis and further characterized by elemental analysis, IR spectroscopy, thermogravimetric and fluorescent property.

Synthesis and Three-order Nonlinear Optical
Property of Pyrenyl Chalcone

SUN Jinyu, SHI Yufang, WANG Guilin,
ZHAO Minggen*

2015, **32**(10):1134-1138

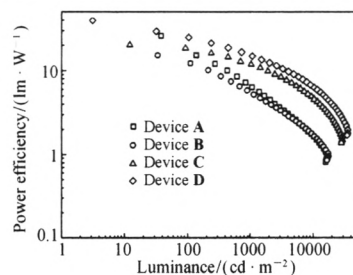


Picosecond results are as follows: the refractive index $n_2 = -2.8 \times 10^{-18} \text{ m}^2/\text{W}$, the absorption coefficient $\beta = 8.3 \times 10^{-11} \text{ m/W}$, the polarization rate $\chi^{(3)} = 2.49 \times 10^{-12} \text{ esu}$, the molecular hyperpolarizability $\gamma = 3.33 \times 10^{-31} \text{ esu}$.

High Efficiency Fluorescent/Phosphorescent Hybrid White
Organic Light-Emitting Diodes Without Spacer Structure

DAI Yanfeng, ZHANG Zhiqiang,
LIU Yipeng, MA Dongge*

2015, **32**(10):1139-1145

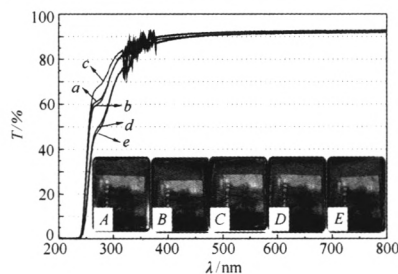


High efficiency fluorescent/phosphorescent white organic light-emitting diodes with phosphorescent red, fluorescent blue and phosphorescent green three emitters without spacer.

Preparation and Properties of Ionic Liquid and
Ethylene-Vinyl Acetate Copolymer Composites

JIN Mingyue, FU Luxiang, YOU Jichun,
Li Yongjin*

2015, **32**(10):1146-1152

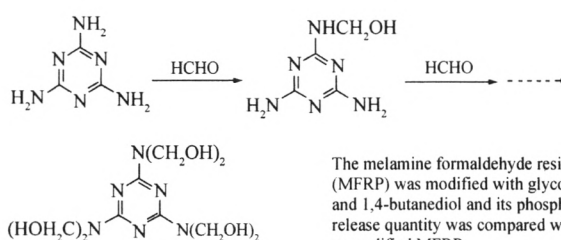


Ionic liquids and EVM are melt blended to prepare flexible antistatic material for the first time and this method is simple and environmentally friendly.

Encapsulated Red Phosphorus in Dihydric Alcohol
Modified Melamine Formaldehyde Resin

MA Qian, LIU Zengjie, LIANG Yi,
DONG Tianhe, HAN Fuqin*

2015, **32**(10):1153-1158

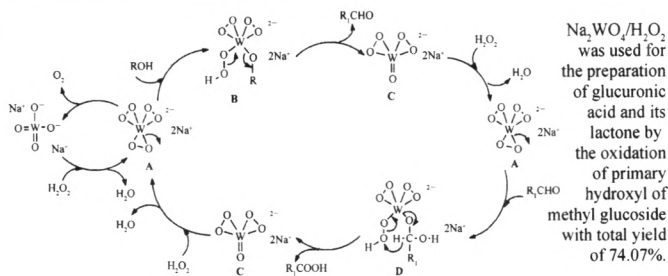


The melamine formaldehyde resin (MFRP) was modified with glycol and 1,4-butanediol and its phosphine release quantity was compared with unmodified MFRP.

Selective Oxidation of Primary Hydroxyl of Methyl Glucoside by Sodium Tungstate/Hydroperoxide

ZHANG Pei, YUAN Hua*, WU Jiaxiong, ZHANG Hualiang

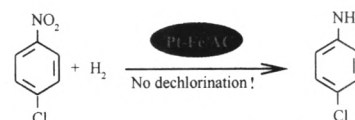
2015, **32**(10) :1159-1163



Selective Hydrogenation of *p*-Chloronitrobenzene Catalyzed by Activated Carbon Supported Fe-Pt Bimetallic Catalyst

GU Mu, HE Daiping*, JIANG Ping, YIN Xingchun, CHEN Hu

2015, **32**(10) :1164-1169

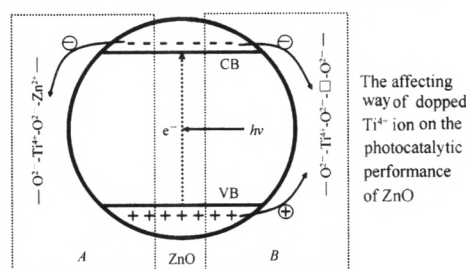


Selective production of *p*-chloroaniline from *p*-chloronitrobenzene without any dechlorination was feasibly achieved by catalytic hydrogenation over activated carbon supported Pt-Fe bimetallic catalyst.

Preparation and Photocatalytic Property of Titanium (IV) Doped Zinc Oxide Nanofiber Materials with Multi-wall Structure

SU Bitao*, SHAO Kerang, LI Jianjiao, XIN Junlian, LEI Ziqiang

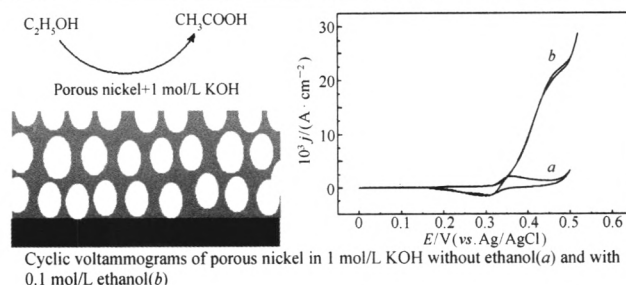
2015, **32**(10) :1170-1176



Electrocatalytic Oxidation of Ethanol Using Porous Nickel Prepared by Hydrogen Bubble Template

ZHANG Wenbin*, ZHANG Zhangcai

2015, **32**(10) :1177-1183

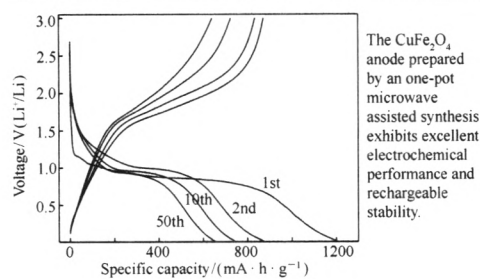


Cyclic voltammograms of porous nickel in 1 mol/L KOH without ethanol(a) and with 0.1 mol/L ethanol(b)

Microwave Assisted Synthesis and Electrochemical Performance of Copper Ferrite as Anode Material for Lithium-ion Battery

WANG Feng, HU Xinliang, ZHANG Peng, ZHAO Shuangqi, DING Yu*

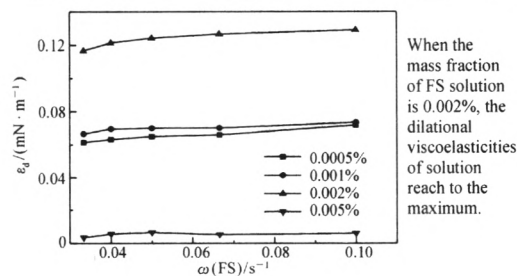
2015, **32**(10) :1184-1189



Dilational Rheological Properties of an Amphoteric Fluorocarbon Surfactant at the Oil/Water Interface

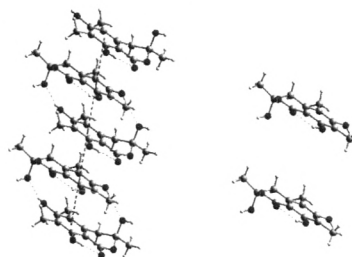
LI Liang*, WANG Yanling, ZHANG Jianjun, JIN Jiafeng, LU Yiwen, MA Yan, ZHENG Jingjing

2015, **32**(10) :1190-1195



Isolation and Structure Elucidation of Secondary Metabolites from Mangrove Endophytic Fungus *Penicillium* sp. B21

LUO Youping, DENG Pengfei*, NIU Yanyan, ZHENG Caijuan, YAN Xiangyang, CHEN Jun

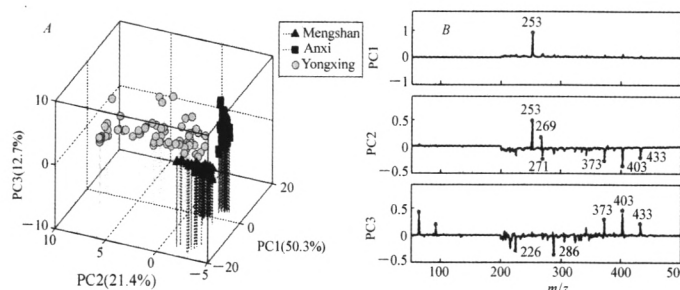


Five pure compounds were separated from fermentation of mangrove endophytic fungus *Penicillium* sp. B21. And the X-ray crystal structure of sclerotinin B was obtained for the first time.

2015, 32(10):1196-1200

Comparison of Ambient Temperature and Thermal Surface Desorption Atmospheric Pressure Chemical Ionization Mass Spectra for the Pericarp of Navel Orange

FANG Xiaowei, ZHONG Tao, YAO Guocan, GAO Xiang, YANG Meiling, LI Hui, LE Zhanggao*, ZHANG Xinglei*

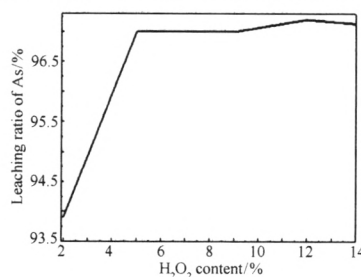


Principle component analysis of thermal DAPCI-MS of epicarp allows a confident discrimination of navel orange samples from three different origins (A. 3D score plots, B. PCA loading plots)

2015, 32(10):1201-1207

Determination of Speciation in White Ash and Acid Leaching Arsenic Removal Technique

MA Miao, HUANG Yudai*, GUO Yong, JIA Dianzeng, TANG Xincun, WANG Xingchao, PAN Yanliang

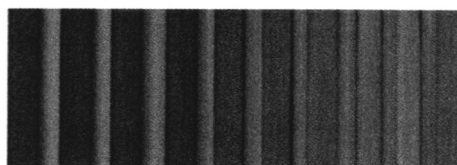


The best conditions of arsenic removal of the white ash by acid leaching is: 4 mol/L H_2SO_4 , 5% H_2O_2 , 3 h, 30 °C, liquid to solid ratio of 7:1. Under this conditions, the leaching arsenic ratio is run up to 97.1%.

2015, 32(10):1208-1214

High Acidity Test Paper Based on Brilliant Blue as Color Agent

HE Chunxiang*, WANG Wei, HUO Chunbao, GAO Feng*



$c(HCl)/(mol \cdot L^{-1})$
0.1 1 2 3 4 5 6 7 8 9

The high acidity paper of brilliant blue can directly detect the H^+ concentration of the solution in the range of 0.1~0.9 mol/L.

2015, 32(10):1215-1220

* To whom correspondence should be addressed

第九届《应用化学》编辑委员会名单(按拼音顺序记)

主 编:

张洪杰

常务副主编:

张柏林

副主编:

廖代正 邵元华 苏朝晖 王 为 王 野

顾问委员:

曹楚南 陈冀胜 陈小明 程镭时 董绍俊 段 雪 冯守华 冯小明 韩志超 洪茂椿 江 明
李 灿 李正名 倪嘉缙 钱逸泰 沈之荃 苏 锵 田中群 王佛松 吴 奇 徐如人 杨秀荣
杨玉良 张礼和 张玉奎 郑兰荪

编委委员:

安立佳 陈 军 陈义旺 程 鹏 董 川 房 喻 付宏刚 甘志华 高 翔 胡继明 金国新
李星国 李悦生 林金明 刘世勇 刘正平 马小军 潘 毅 彭孝军 曲良体 曲晓刚 沈兴海
施 展 孙世刚 谭蔚泓 唐 勇 王 博 王 成 王东升 王 静 王利祥 王 鹏 汪 信
王彦广 武培怡 解孝林 薛冬峰 严秀平 杨 柏 杨向光 杨小牛 游劲松 张书圣 张四纯
赵凤玉 周光远 朱俊杰 朱为宏

外籍委员:

Amatore C., Girault R H, Machida K, McCarthy T J

应用化学 Yingyong Huaxue

(月刊, 1983 年创刊)

第 32 卷 第 10 期 2015 年 10 月 10 日

Chinese Journal of Applied Chemistry

(Monthly, Established in 1983)

Volume 32 Issue 10 October 10, 2015

| | | |
|---|--|---|
| <p>编 辑 《应用化学》编辑委员会</p> <p>地址:长春市人民大街 5625 号 邮政编码:130022 电话:0431-(85262016,85262330) E-mail:yyhx@ciac.ac.cn 网站:http://yyhx.ciac.jl.cn</p> <p>主 编 张洪杰</p> <p>主 管 中国科学院</p> <p>主 办 中国化学会 中国科学院长春应用化学研究所</p> <p>出 版 科学出版社</p> <p>地址:北京东黄城根北街 16 号 邮政编码:100717</p> <p>印刷装订 沈阳中科印刷有限责任公司</p> <p>国内发行 辽宁省邮政公司报刊发行公司</p> <p>国外发行 中国国际图书贸易集团有限公司 地址:中国,北京市海淀区车公庄西路 35 号 邮政编码:100048</p> <p>广告经营许可证:吉工商广字 206 号</p> | <p>Edited by</p> <p>Editor-in-Chief</p> <p>Administered by</p> <p>Sponsored by</p> <p>Published by</p> <p>Printed by</p> <p>Home Distributor</p> <p>Overseas Distributor</p> | <p>The Editorial Board, Chinese Journal of Applied Chemistry Add:5625 Renmin St., Changchun 130022, China</p> <p>Tel:0431-(85262016,85262330) E-mail:yyhx@ciac.ac.cn Website:http://yyhx.ciac.jl.cn</p> <p>ZHANG Hongjie</p> <p>The Chinese Academy of Sciences(CAS) The Chinese Chemical Society The Changchun Institute of Applied Chemistry, CAS</p> <p>Science Press Add:16 Donghuangchenggen North Street, Beijing 100717, China</p> <p>Printing House of Shenyang Zhongke Limited Company</p> <p>Postal and Newspapers Corporation and Periodicals Distribution Company, Liaoning</p> <p>China International Book Trading Corporation Add. 35 Chegongzhuang Xilu, Haidian District, Beijing 100048, China</p> |
|---|--|---|

国内统一刊号: CN 22-1128/06

国内邮发代号: 8-184

国外发行代号: M809

定价: 30.00 元

国内 外 公 开 发 行

ISSN 1000-0518



9 771000 051156