



中国核心学术期刊  
中国科技核心期刊  
中国高校优秀科技期刊  
湖北省优秀期刊

ISSN 1000-2375  
CN 42-1212/N

# 湖北大学 **学报**

## 自然科学版

JOURNAL OF HUBEI UNIVERSITY  
NATURAL SCIENCE

# 4

## 2020

第42卷 第4期  
Vol. 42 No. 4

湖北大学  
学报

自然科学版

二〇二〇年 第四十二卷 第四期  
(总第一百六十二期)

概率论与数理统计研究专栏

无穷时滞脉冲随机泛函微分方程一般衰减意义下  $p$  阶矩稳定性 ..... 余国胜(359)

The  $p$ -th moment stability on general decay for impulsive stochastic functional differential equations with infinite delay ..... YU Guosheng

END 随机变量加权和的最大值序列的完全收敛性 ..... 陶惠玲,李翔,沈爱婷(363)

The complete convergence for the maximum of weighted sums of END random variables .....TAO Huiling, LI Xiang, SHEN Aiting

$m$ -相依随机变量序列的中心极限定理及逼近速度 ..... 井照敬(372)

The central limit theorem and the approximation rate of  $m$ -dependent random variables ..... JING Zhaojing

水稻基因工程研究专栏

褐飞虱乙酰胆碱酯酶启动子的克隆及表观遗传分析 ..... 方君,杨潇,朱利航,陈俊,杨之帆(377)

Cloning and epigenetic analysis of *Acetylcholinesterase* promoter from the brown planthopper *Nilaparvata lugens* (Hemiptera: Delphacidae) ..... FANG Jun, YANG Xiao, ZHU Lihang, CHEN Jun, YANG Zhifan

基于 JMP 软件的 Lasso 及岭回归在水稻全基因组预测中的应用 ..... 李亚男,陈建国(384)

Application of Lasso and ridge regression in rice whole-genome prediction based on JMP software ..... LI Ya'nan, CHEN Jianguo

水稻 *OsWHY1* 基因克隆及过表达与 RNAi 载体构建 ..... 何雅婷,居超明,陈建国(390)

Cloning of *OsWHY1* gene in rice and construction of overexpression and RNAi vectors ..... HE Yating, JU Chaoming, CHEN Jianguo

---

---

## 地理学与环境科学

基于 XGBoost 特征选取和迭加权相关权重矩阵的高分五号遥感影像变化检测

..... 魏立飞,张杨熙,尹峰,黄庆彬(398)

GF-5 hyperspectral change detection based on XGBoost feature selection and iteration reweighted correlation weight matrix .....

WEI Lifei, ZHANG Yangxi, YIN Feng, HUANG Qingbin

湖北省传统村落分布及其影响因素探究 .....

侯灿,胡道华(404)

Spatial distribution and the influencing factors of traditional villages in Hubei Province

..... HOU Can, HU Daohua

## 物理学与电子技术

体感控制工程车设计 .....

汤莉莉,程升强,黄伟(411)

Somatosensory control engineering vehicle design .....

TANG Lili, CHENG Shengqiang, HUANG Wei

温度对铁电隧道结隧穿电阻效应的影响 .....

王一豪,陈赓,章天金,马志军(416)

Influence of temperature on the tunneling electroresistance effect of ferroelectric tunnel junctions

..... WANG Yihao, CHEN Geng, ZHANG Tianjin, MA Zhijun

## 化学化工与材料科学

Mn 掺杂 Co 氧化物用于碱性氧还原与氧析出反应双功能催化剂

..... 李国强,张紫琼,麦婉珊,张凯凯,聂仁峰,胡玮(420)

Mn doped cobalt oxides as the bifunctional electrocatalysts for ORR and OER in alkaline medium

.....LI Guoqiang, ZHANG Ziqiong, MAI Wanshan, ZHANG Kaikai, NIE Renfeng, HU Wei

高稳定性甲基橙的室温合成及其性能研究 .....

李健鹏,李险峰,陈鸿雁,肖定书(428)

# CONTENTS

Journal of Hubei University  
Natural Science

---

- Preparation of highly stable methyl orange at room temperature and its properties characterization  
..... LI Jianpeng, LI Xianfeng, CHEN Hongyan, XIAO Dingshu
- 两种含氟芳酰胺季磷盐的合成及其细胞毒性研究 ..... 田雨晴,周炜,娄兆文(436)
- Synthesis and cytotoxicity of two kinds of fluorinated aromatic amide quaternary phosphonium salts  
..... TIAN Yuqing, ZHOU Wei, LOU Zhaowen
- 石墨烯/CuCo<sub>2</sub>O<sub>4</sub> 固载 Pd-Bi 纳米粒子的制备及其电催化氧化乙二醇  
..... 杨婕妤,张淑娟,万正睿,刘红英,张翊青,周立群(440)
- Preparation and electrocatalytic oxidation of ethylene glycol on Pd-Bi nanoparticles fixed on graphene/CuCo<sub>2</sub>O<sub>4</sub>  
composites  
.....YANG Jieyu, ZHANG Shujuan, WAN Zhengrui, LIU Hongying, ZHANG Yiqing, ZHOU Liqun
- 二甲基亚砷工业废盐的回收方法和工艺设计 ..... 康群,龙真明,马会娟,李兆华,娄兆文,赵锦慧(449)
- Recycling method and process from dimethyl sulfoxide industrial waste salts  
.....KANG Qun, LONG Zhenming, MA Huijuan, LI Zhaohua, LOU Zhaowen, ZHAO Jinhui

## 基础数学与应用数学

- 完全判别信息 Fisherfaces 人脸识别算法 ..... 费经泰,程一元,查星星,王冬银(458)
- Face recognition algorithm based on complete discriminant information Fisherfaces  
..... FEI Jingtai, CHENG Yiyuan, ZHA Xingxing, WANG Dongyin

## 生命科学与医药卫生

- 控释肥养分释放机理及其影响因素研究进展 ..... 刘俊松,吴雅萍,左思杰,熊梦琪(464)
- Research advances on nutrients release mechanisms and influencing factors in controlled release fertilizers  
..... LIU Junsong, WU Yaping, ZUO Sijie, XIONG Mengqi