

# 目次

## ● 泵理论与技术

栏目主编：王福军 袁建平

浆体流量对矿浆泵空化特性的影响

徐海良, 彭能, 杨放琼 ( 217 )

叶顶间隙对斜流泵叶轮内部空化流动的影响

黎义斌, 何慧, 范北京, 李建忠 ( 224 )

磁力联轴器涡流损失的数值计算与试验

汪家琼, 王凯, 孙静如, 赵瑞杰, 童凯, 柏宇星 ( 230 )

平衡鼓间隙对多级泵后腔压力及轴向力的影响

钱晨, 杨从新, 胡小杰, 张扬, 侯凯文 ( 236 )

离心泵叶片仿生非光滑结构的布置位置

代翠, 陈怡平, 董亮, 王照雪 ( 241 )

## ● 水利水电工程

栏目主编：戴会超 仇宝云

基于原型振动测试的水轮机顶盖螺栓疲劳分析

练继建, 王婷杰, 王海军, 王鸿振 ( 248 )

空气罐与超压泄压阀联合水锤防护特性

李楠, 张健, 石林, 陈旭云, 张小莹 ( 254 )

海绵校园建设中重力流生态滤池的管理问题与对策

刘硕敏, 吴荣芳, 刘灿灿, 王冬梅, 解清杰 ( 261 )

## ● 流体工程

栏目主编：王正伟 林建忠

基于 Flowmaster 的不同阀门开度对供水管网优化

付强,余健恩,闫强,郝国帅,沙龙,朱荣生,王秀礼( 266 )

污水搅拌器摆放角度对流场性能影响

张智,郑源,蒋浩青,李城易( 271 )

Transient heat transfer characteristics of air-array-jet impingement with different nozzle arrangements on high-temperature flat plate in small jet-to-plate distance

LI Meixiang, ZHU Keqian, XIE Yu, CAI Tingting, YUAN Ningyi, DING Jianning( 277 )

## ● 农业水土工程

栏目主编：康绍忠 许迪

基于 SD 变化环境下农业水资源供需平衡模拟

粟晓玲,谢娟,周正弘( 285 )

生物炭对黑垆土土壤水分运移特征参数影响

王幼奇,包维斌,白一茹,陆学娥,夏子书,杨帆,钟艳霞( 292 )

粉壤土水盐运移对咸淡水交替灌溉的响应

朱瑾瑾,孙军娜,张振华,杨懋( 298 )

不同水分条件下宁夏枸杞氢氧稳定同位素变化特征试验研究

汤英,徐利岗,王怀博,鲍子云( 304 )

不同增氧滴灌方式对蔬菜生长生理指标的影响

臧明,雷宏军,BHATTARAI Surya,BALSYS Ron,徐建新( 310 )

## ● 排灌装备制造技术

栏目主编：施卫东 黄修桥

基于 ZigBee 的液肥变量深施系统设计与试验

薛秀云,张彬,张泽龙,林冬婷,宋淑然,李震,洪添胜( 318 )

## CONTENTS

- Effect of slurry flow rate on cavitation characteristics of deep-sea mining pump  
..... *XU Hailiang, PENG Neng, YANG Fangqiong*( 217 )
- Effect of blade tip clearance on cavitating flow in mixed-flow pump  
..... *LI Yibin, HE Hui, FAN Zhaojing, LI Jianzhong*( 224 )
- Numerical analysis and experiment on eddy current loss in magnetic coupling  
..... *WANG Jiaqiong, WANG Kai, SUN Jingru, ZHAO Ruijie, TONG Kai, BAI Yuxing*( 230 )
- Influence of blade drum clearance on axial thrust and pressure in rear chamber of last stage impeller of multistage centrifugal pump  
..... *QIAN Chen, YANG Congxin, HU Xiaojie, ZHANG Yang, HOU Kaiwen*( 236 )
- Layout position of bionic non-smooth structure on blades of centrifugal pump  
..... *DAI Cui, CHEN Yiping, DONG Liang, WANG Zhaoxue*( 241 )
- Fatigue analysis of hydro-turbine head cover bolts based on prototype vibration measurement  
..... *LIAN Jijian, WANG Tingjie, WANG Haijun, WANG Hongzhen*( 248 )
- Water hammer protection characteristic of combined air vessel and overpressure relief valve  
..... *LI Nan, ZHANG Jian, SHI Lin, CHEN Xuyun, ZHANG Xiaoying*( 254 )
- Management problems and countermeasures of gravity flow ecological filter in sponge campus construction  
..... *LIU Shuomin, WU Rongfang, LIU Cancan, WANG Dongmei, XIE Qingjie*( 261 )
- Flowmaster-based optimization study of water supply pipe network with different valve openings  
..... *FU Qiang, YU Jianen, YAN Qiang, HAO Guoshuai, SHA Long, ZHU Rongsheng, WANG Xiuli*( 266 )
- Influence of wastewater mixer setting angle on flow field in sewage treatment pool  
..... *ZHANG Zhi, ZHENG Yuan, JIANG Jieqing, LI Chengyi*( 271 )
- Transient heat transfer characteristics of air-array-jet impingement with different nozzle arrangements  
on high-temperature flat plate in small jet-to-plate distance  
..... *LI Meixiang, ZHU Keqian, XIE Yu, CAI Tingting, YUAN Ningyi, DING Jianning*( 277 )
- System dynamics model-based simulation of agricultural water resources supply and demand balance in changing environments  
..... *SU Xiaoling, XIE Juan, ZHOU Zhenghong*( 285 )
- Effects of biochar on soil water transport characteristics of Heilu soil  
..... *WANG Youqi, BAO Weibin, BAI Yiru, LU Xue, XIA Zishu, YANG Fan, ZHONG Yanxia*( 292 )
- Response of water-salt migration to salty and fresh water alternate irrigations in silty loam  
..... *ZHU Jinjin, SUN Junna, ZHANG Zhenhua, YANG Mao*( 298 )
- Experiment on variation characteristics of hydrogen and oxygen stable isotopes of *Lycium barbarum*  
in Ningxia under different irrigation conditions  
..... *TANG Ying, XU Ligang, WANG Huaibo, BAO Ziyun*( 304 )
- Effects of oxygation techniques on growth and physiology of vegetable under subsurface drip irrigation  
..... *ZANG Ming, LEI Hongjun, BHATTARAI Surya, BALSYS Ron, XU Jianxin*( 310 )
- Design and experiment of variable liquid fertilizer applicator for deep-fertilization based on ZigBee technology  
..... *XUE Xiuyun, ZHANG Bin, ZHANG Zelong, LIN Dongting, SONG Shuran, LI Zhen, HONG Tiansheng*( 318 )