



中国磷肥工业协会会刊

LINFEI YU FUFEI

# 磷肥与复肥

Phosphate & Compound Fertilizer

1985年创刊

双月刊

(经原国家科委、国家新闻出版署批准出版)

批准号 492

2011年第26卷第2期

(总第133期)

2011年3月15日出版

国内外公开发刊

主 管 郑 州 大 学  
 主 办 郑 州 大 学  
 中 国 磷 肥 工 业 协 会  
 主 编 许 秀 成  
 出版单位 《磷肥与复肥》编辑部  
 编辑出版发行地址 郑州市文化路97号  
 郑州大学工学院内  
 邮 政 编 码 450002  
 电 话 (0371)6388 7037, 6778 1991  
 传 真 (0371)6388 6796  
 编辑部信箱 lfyff@126.com  
 广告信箱 lfyff@sina.com  
 网 址 www.lfyff.com  
 国内发行 邮发代号:36-189  
 国外发行 中国出版对外贸易总公司  
 (北京782信箱)  
 国外发行代号 DK41002  
 印 刷 河南省瑞光印务股份有限公司

ISSN 1007 - 6220  
CN 41-1173/TQ

广告经营许可证 4101004000047

国内定价 16元/册 全年价 96元

## 目 次

### ◆ 论 坛 ◆

对当前我国磷肥产业布局调整和优化问题思考 ..... 高 源 张 胜 郭德春(1)  
 复合(混)肥制造企业实施大规模定制生产模式的探索与实践  
 ..... 王金铭 石学勇(6)

### ◆ 研究与开发 ◆

原煤中腐植酸的活化处理研究 ..... 王家盛 茹铁军 李香红(10)  
 脲甲醛缓释肥料的制备 ..... 张文辉 魏 婵 谷守玉(12)  
 湿法磷酸中阳离子杂质对浓缩脱氟影响的研究 ..... 郑 佳 李 军 金 央(14)  
 磷矿低温反浮选中应用脂肪酸钾皂捕收剂的实验研究 ..... 王仁宗 熊良峰 阮自斌(16)

### ◆ 过磷酸钙 ◆

利用高硅低品位磷矿生产过磷酸钙的工艺 ..... 骆 彪(18)

### ◆ 磷酸 磷铵 ◆

回转窑法磷酸工艺开发的进展 ..... 李燕凤 白锡柱 孙国超(20)  
 干堆磷石膏大型渣场设计概述 ..... 何秉顺 田亚护 张平虎 王 洪(24)  
 改善磷酸二铵产品外观质量的分析与对策 ..... 王永宏(28)  
 添加尿素提高磷酸二铵产品中总氮含量的可行性研究 ..... 张根锁 段付岗(32)  
 利用包裹筒冷却磷酸二铵的技改 ..... 覃庆国 高体飞 林赞华 韦 莉(35)  
 应用苯甲酸生产粒状MAP的实践 ..... 胡曾毅 陈清宪 覃庆海 陶 志(37)  
 磷酸装置排放尾气粉尘含量超标原因分析及对策 ..... 李老柏 徐景才(40)

### ◆ 硝酸磷肥 ◆

利用汽提技术回收硝酸磷肥装置工艺冷凝液中的氨 ..... 张红军(42)

### ◆ 磷 化 工 ◆

在盐酸法磷酸氢钙生产中应用硅酸钠和氯化钾脱氟剂的实验研究  
 ..... 翟远征 郎丰霞(45)  
 磷酸钙盐尾气洗涤工艺改进设想 ..... 赵小林 杨正茂 巫德伟(47)

### ◆ 复混肥及新型肥料 ◆

硫酸脲氨化法生产尿基复合肥工业化生产的研究 ..... 石学勇 张彦旭 王金铭(48)  
 可以快速自清洗的差动造粒喷头 ..... 孔亦周(51)  
 复合肥防结块的新方法 ..... 李晓波 韩基金 李金蓉(53)  
 硝基复合肥生产技术与农业应用前景 ..... 王 军(55)  
 尿液泵入口管道吸瘪事故分析及技改措施 ..... 马志英(57)

### ◆ 副产品综合利用 ◆

FC-分室石膏煅烧技术在磷石膏粉生产中的应用 ..... 李玉山 张贤辉(58)

### ◆ 磷资源综合利用 ◆

磷矿伴生碘资源回收工业化生产设备材料选择 ..... 罗贤松(62)

### ◆ 三废治理与环保 ◆

高浓度含氟污水处理及利用 ..... 占其军(64)

### ◆ 分析与测试 ◆

原子吸收分光光度法测定聚合硼钾中铁含量 ..... 杨明妍 季汝泉(67)  
 高效液相色谱法测定尿素中缩二脲 ..... 谌 芳 毛洪祥 张淑娟 陈 萌 王 蕾(69)

### ◆ 农化服务 ◆

直播水稻的肥料运筹分析与农化对策 ..... 闻章辉(71)  
 腐植酸涂层BB肥在水稻高产栽培中的应用 ..... 陈绍荣 吴金发 孙玲丽 刑嘉语(74)

### ◆ 综合栏目 ◆

中国碘资源和碘化工生产与消费 ..... 张红映 雷学联(76)

### ◆ 简 讯 ◆

磷化工拉伸产业链等 ..... (61)

### ◆ 其 他 ◆

废酸增稠器搅拌桨的防腐 ..... 吴招瑞(17)  
 关于改进钢丝绳胶带的建议 ..... 苗振茂(78)  
 广告目次 ..... (78页一展)

# Phosphate & Compound Fertilizer (Bimonthly)

Vol. 26 No.2 (Series No. 133) Mar. 15, 2011

## Contents

### Forum

- Thought on adjustment and optimization of phosphate fertilizer industrial distribution in China under the current situation ..... GAO Yuan, ZHANG Sheng, GUO De-chun (1)
- Exploration and practice on carrying out large-scale customizing production mode in compound fertilizer enterprises ..... WANG Jin-ming, SHI Xue-yong (6)

### Research & Development

- Study on activation process of humic acid in raw coal ..... WANG Jia-sheng, RU Tie-jun, LI Xiang-hong (10)
- Preparation of urea-formaldehyde slow release fertilizer  
nitric acid ..... ZHANG Wen-hui, WEI Chan, GU Shou-yu (12)
- Study on the effects of cationic impurities in WPA on the defluorination by concentration ..... ZHENG Jia, LI Jun, JIN Yang (14)
- Study on low temperature reverse floatation of phosphate rock by soap of fatty acid potassium salt collector ..... WANG Ren-zong, XIONG Liang-feng, RUAN Zi-bin (16)

### Single Superphosphate

- Production process of SSP with low-grade phosphate rock containing high silicon ..... LUO Biao (18)

### Phosphoric Acid & Ammonium Phosphates

- Technology development of CDK kiln-process phosphoric acid ..... LI Yan-feng, BAI Xi-zhu, SUN Guo-chao (20)
- Summary on designing the large-scale slag dump of dry stack phosphogypsum ..... HE Bing-shun, TIAN Ya-hu, ZHANG Ping-hu, WANG Hong (24)
- Analysis on improving DAP appearance quality and its countermeasures ..... WANG Yong-hong (28)
- Feasibility analysis of increasing total nitrogen content by adding urea in DAP product ..... ZHANG Gen-suo, DUAN Fu-gang (32)
- Transformation of cooling DAP by encapsulated cylinder ..... QIN Qing-guo, GAO Ti-fei, LIN Zan-hua, WEI Li (35)
- Practice of adopting raffinate of WPA for production of GMAP ..... HU Zeng-yi, CHEN Qing-xian, QIN Qing-hai, TAO Zhi (37)
- Reason analysis on the dust content of tail gas from DAP over standard and its countermeasures ..... LI Lao-bo, XU Jing-cai (40)

### Nitrophosphate

- Recovery in ammonia of condensate from nitrophosphate plant by stripping technology ..... ZHANG Hong-bing (42)

### Phosphorus Chemical Industry

- Research on the defluorination agent of sodium silicate and potassium chloride by hydrochloric acid method  
for dicalcium phosphate production ..... ZHAI Yuan-zheng, LANG Feng-xia (45)
- Improvement of the tail gas washing system in calcium phosphate process ..... ZHAO Xiao-lin, YANG Zheng-mao, WU De-wei (47)

### Compound Fertilizer & New Type Fertilizers

- Study on industrial production of urea-based compound fertilizer with urea sulfate ammoniation ..... SHI Xue-yong, ZHANG Yan-xu, WANG Jin-ming (48)
- Differential prilling sprayer with rapid self-cleaning device ..... KONG Yi-zhou (51)
- A new method of anti-caking for compound fertilizer ..... LI Xiao-bo, HAN Chun-jin, LI Jin-rong (53)
- Nitrocompound fertilizer production technology and its prospect in agricultural application ..... WANG Jun (55)
- Analysis on the accident of inlet pipelines sinkage or collapse of urea solution pump and its technical transformation ..... MA Zhi-ying (57)

### Utilization of By-product

- Application of FC-compartment calcinations technique in phosphogypsum powder production ..... LI Yu-shan, ZHANG Xian-hui (58)

### Comprehensive Utilization of Phosphorus Resource

- Choice of material in industry production of iodine recycling equipment from phosphate rock ..... LUO Xian-song (62)

### Three Wastes Treatment & Environmental Protection

- Treatment of high concentration fluoride-containing sewage and its application ..... ZHAN Qi-jun (64)

### Analysis & Test

- Determination of iron in polymer with boron and potassium by atomic absorption spectrophotometry ..... YANG Ming-yan, JI Ru-quan (67)
- Determination of biuret in urea by HPLC ..... CHEN Fang, MAO Hong-xiang, ZHANG Shu-juan, CHEN Meng, WANG Lei (69)

### Fertilizer Application

- Fertilizer operational analysis on the direct seeding rice and its agrochemical countermeasure ..... WEN Zhang-hui (71)
- Application of BB fertilizer coated humic acid in the cultivation of high-yielding rice ..... CHEN Shao-rong, WU Jin-fa, SUN Ling-li, XING Jia-yu (74)

### Miscellanies

- Production and consumption of iodine resources and iodine chemical industry in China ..... ZHANG Hong-ying, LEI Xue-lian (76)

Chief Editor XU Xiu - cheng

Published in every odd-numbered month by

Editorial Department of PHOSPHATE & COMPOUND FERTILIZER

— a division of China Phosphate Fertilizer Industry Association

Zhengzhou University (North Campus)

97 Wenhua Lu, Zhengzhou, Henan 450002, P. R. China

Tel: (+86 371) 6388 7037, 6778 1991 Fax: (+86 371) 6388 6796

E-mail: lfyff@126.com

Website: http://www.lfyff.com

ISSN 1007 - 6220 CODEN LYFUF7

Printed in China by

Henan Rui Guang Printing Co., Ltd.

Subscription enquiries and payment to

China National Publishing Industry

Trading Corporation.

P. O. Box 782,

Beijing 100011

Tel: (+ 86 10) 6426 6648