

2026 年度有色金属工业科学技术奖提名项目公示内容

一、项目名称：钙硅基固废多元素梯级提取与低碳胶凝材料制备关键技术及应用

二、推荐单位：武汉理工大学

三、提名类型：科技进步奖

四、提名等级：一等奖

五、主要知识产权目录

专利、软件著作权等授权情况

授权项目名称	知识产权类别	国（区）别	授权号
一种高效回收精制磷酸氟资源的装置及其方法	发明专利	中国	ZL 202211113405.7
一种利用无害化磷石膏进行矿山生态重构的方法	发明专利	中国	ZL 202310416150.X
一种利用黄磷炉渣脱除湿法磷酸中硫酸根的方法	发明专利	中国	ZL 202210705935.4
一种磷石膏原位深度净化生产高品质建筑石膏的方法	发明专利	中国	ZL 202210728725.7
一种利用磷石膏分解渣捕集二氧化碳的方法	发明专利	中国	ZL 201711008313.1
一种磷石膏分解渣提纯制备氧化钙的方法	发明专利	中国	ZL 201210206847.6
一种磷石膏直接制备高纯度碳酸钙的方法	发明专利	中国	ZL 201310186911.3
一种利用工业固废制备墙体保温材料的方法	发明专利	中国	ZL 202010975354.3

一种高强度磷石膏基再生骨 料及其制备方法	发明专利	中国	ZL 202210513995.6
一种公路水稳料及其制备 方法	发明专利	中国	ZL 202011623841.X
一种湿法磷酸浓缩降蒸汽消 耗的装置	实用新型专利	中国	ZL 202422148317.1
一种磷石膏深度逆流净化 系统	实用新型专利	中国	ZL 202421151039.9
一种高强石膏生产烘干一体 化设备	实用新型专利	中国	ZL 202323360983.3
一种提高带式真空过滤机洗 涤磷石膏白度的装置	实用新型专利	中国	ZL 202323055916.0
一种大规模磷石膏高效除杂 装置及应用方法	发明专利	中国	ZL 202210946646.3
矿物表面气泡成核及气泡生 长过程的观测装置和方法	发明专利	中国	ZL 202010019381.3
一种颗粒与可调节气泡相互 作用的观测装置和方法	发明专利	中国	ZL 202010018698.5
一种基于调控界面微纳米气 泡的加压溶气调浆装置及 方法	发明专利	中国	ZL 202110512989.4
一种基于界面微纳米气泡的 全程负压浮选装置	发明专利	中国	ZL 202410805452.0
一种用于矿物浮选的全程负 压调控界面微纳米气泡群 方法	发明专利	中国	ZL 202410805457.3

調整可能な循環式スラリー 調整装置および方法	发明专利	日本	特许第 2024-133319 号
バリウムスラグの無害化回 収処理プロセスおよびその 処理装置	发明专利	日本	特许第 2021-210006 号
一种基于花岗岩废料和燃煤 渣的免烧透水砖及其制备 方法	发明专利	中国	ZL 202110974026.6
一种基于花岗岩废料和燃煤 渣的烧结透水砖及其制备 方法	发明专利	中国	ZL 202210762007.1
一种活化燃煤渣及应用其制 备水硬性胶凝材料的方法	发明专利	中国	ZL 202110974024.7
一种预测碱热活化地聚合物 原料活性硅铝比的方法	发明专利	中国	ZL 202111356972.0
一种利用花岗岩石粉低温焙 烧制备磷酸基地聚合物的 方法	发明专利	中国	ZL 202211546074.6
一种基于多种固体废弃物的 胶凝材料及其制备方法	发明专利	中国	ZL 201910819562.1
一种利用花岗岩石粉和燃煤 渣制备一体化胶凝材料的 方法	发明专利	中国	ZL 202110974810.7
一种基于多固废的地聚合物 胶凝材料及其制备方法	发明专利	中国	ZL 202211546068.0
基于燃煤渣和废旧聚丙烯纤 维的胶凝材料及其制备方法	发明专利	中国	ZL 202311217621.0
一种利用低活性固体废弃物 制备磷酸基地聚合物的方法	发明专利	中国	ZL 202210737429.3

在低寒气候下快速成型的地聚合物修复材料及其制备方法	发明专利	中国	ZL 202311217613.6
配方设计方法、装置以及计算机可读存储介质	发明专利	中国	ZL 202511459498.2
一种流态化干法搅拌磨机	发明专利	中国	ZL 202311189038.3
一种立式辊磨机的风道结构以及立式辊磨机	发明专利	中国	ZL 202410192744.1
超细复合矿物掺合料用高性能助磨剂及其制备方法	发明专利	中国	ZL 202311827707.5
一种充填搅拌桶的内部柔性搅拌装置	实用新型专利	中国	ZL 202423260693.6
一种提高充填效率的多向阀装置	实用新型专利	中国	ZL 202423209002.X
膏体充填环管输送试验装置	实用新型专利	中国	ZL 202322484235.X
一种基于页岩提钒尾渣的地聚合物胶凝材料及制备方法	发明专利	中国	ZL 201910819560.2
一种淤泥和电石渣基新型轻质陶砖及其制备方法	发明专利	中国	ZL 202310966112.1

六、代表性论文目录

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9. Highly dispersed and stable NiSn subnanoclusters encapsulated within Silicalite-1 zeolite for efficient propane dehydrogenation[J]. Fuel, 2024, 357: 130069.
10. Simultaneous removal of Al³⁺, Mg²⁺ and F-from wet-process phosphoric acid achieved by a co-precipitation strategy[J]. Separation and Purification Technology, 2024, 341: 126855.
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