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ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

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烧结烟气半干法脱硫灰理化特性

郭斌，卞京凤，任爱玲，刘仁平，张铮

(河北科技大学 环境科学与工程学院，河北 石家庄，050018)

摘 要：以钢铁厂烧结烟气半干法脱硫灰为研究对象，采用国标水泥化学分析方法、国标石膏化学分析方法及碘量法，利用SEM，BET，XRD以及粒径分布仪、差热热重分析仪和红外分光光度计对脱硫灰的理化特性进行跟踪监测分析。分析结果表明：脱硫灰在常温干燥的环境下较稳定，其物理特性及化学成分均无明显变化；化学组成中亚硫酸钙和三氧化硫的含量比电厂脱硫灰含量高，为高钙高硫灰；脱硫灰颗粒表面光滑，结构疏松，呈多孔状；晶相成分主要有亚硫酸钙、硫酸钙、碳酸钙、刚玉及莫来石，另外，还含有无定形物质玻璃体和未燃碳份等；脱硫灰粒径主要分布在3.42~13.77 μm，中位径为4.18 μm，比表面积为7.94 m^2/g，颗粒粒径较小。
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关键字：烧结烟气；脱硫灰；理化特性

Physical and chemical properties of semi-sintering flue gas desulfurization ash

GUO Bin, BIAN Jing-feng, REN Ai-ling, LIU Ren-ping, ZHANG Zheng

（College of Environmental Science and Engineering, Hebei University of Science and Technology, Shijiazhuang 050018, China）

Abstract: Some samples of desulfurization ash was taken from a semi-dry flue gas desulfurization processing sinter gas which was released in iron and steel industry. Scanning electron microscope(SEM) and X-ray diffraction (XRD) were employed to identify the samples in order to investigate the physical and chemical characteristics of ash. The results show that desulfurization ash is stable, and the physical and chemical characteristics of the ash have no significant change in the dry environment at room temperature. The contents of asia calcium sulfate and sulfur trioxide in the desulfurization ash from sinter gas are higher than that from power plant. The desulfurization ash has smooth surface, loose structure and contains many small holes. It consists of asia calcium sulfate, calcium sulfate, calcium carbonate, corundum and mullite, et al. The diameter of the ash rangs from 3.42 μm to 13.77 μm, the mean particle diameter is 4.18 μm and specific surface area is 7.94 m^2/g.

Key words:sintering flue gas; desulfurization ash; physical and chemical characteristics

地 址：湖南省长沙市中南大学 邮编： 410083
电 话： 0731-88879765 传真： 0731-88877727
电子邮箱： zngdxb@mail.csu.edu.cn 湘ICP备09001153号