煤炭学报 2013, 38(07) 1254-1259 DOI: ISSN: 0253-9993 CN: 11-2190

论文

恒温下煤粉/生物质混燃特性及NO释放规律

王春波，王金星，雷 鸣

华北电力大学 能源动力与机械工程学院，河北 保定 071003

摘要：

利用自制的恒温热重测量实验台研究生物质掺混比、煤种、生物质种类及温度等因素对煤粉/生物质混燃特性及NO释放规律的影响。结果表明：生物质掺混比增大后，燃烬时间提前，NO析出率降低；生物质掺烧后对难燃煤种的燃烧特性影响较大，对含灰量高的煤种降低NO排放作用较小。生物质种类在反应初期对试样的燃烧特性曲线影响不大，但随着燃烧的进行，含灰量高的生物质对混燃特性的改善作用逐渐减弱。掺混高含氮量生物质，试样的NO析出率下降较大，但对于含氮量相差不多的生物质，含灰量越高，NO析出率下降越明显。温度在反应初期对燃烧特性的影响不明显，但对反应后期的燃烧特性影响显著。在所选的温度区间内，温度越高，NO析出率越高。

关键词： 煤粉；生物质；混燃；热重；NO排放

Co-combustion characteristics and NO emission characteristics of pulverised coal and biomiss blends at constant temperature

Abstract:

The co combustion characteristics and the NO emission characteristics of pulverized coal/biomass blends at constant temperature were studied using a newly designed experimental system that can obtain the sample weight and the NO concentration at the same time.In particular，the effect of blending ratio，coal type，biomass type and temperature on the co combustion characteristics and the NO emission characteristics were investigated.The results show that with the increase of blending biomass ratio，the burnout time moves forward and the NO emission ratio reduces.Blending biomass has an obvious effect on the combustion characteristics of nonflammable coal，but has little effect on the NO emission characteristics of coal with high ash content.At the initial stage of combustion process，the influence of biomass types on the combustion characteristics is not high.During the co combustion process，the effect of blending biomass with high ash content on the combustion characteristics decreases gradually.The reduction of NO emission rate is significant when coal blends with high nitrogen content biomass.However，if the biomass has similar nitrogen content，the more ash content，the more the reduction of NO emission rate.The effect of temperature can be negligible at the initial stage of combustion process，but become obvious at the end of combustion process.In the temperature range of the experiments，with the increase of temperature，the NO emission rate increases gradually.

Keywords: pulverized coal；biomass；co-combustion；TG；NO emission

收稿日期 2012-07-10 修回日期 2012-09-05 网络版发布日期 2013-07-26

DOI:

基金项目:

中央高校基本科研业务经费资助项目（13MS92）

通讯作者: 王春波

作者简介: 王春波（1973—），男，河北唐山人，教授，博士

作者Email: hdwchb@126.com

参考文献：

本刊中的类似文章