

Interchangeability of coke oven gas with mixtures of fuels

조길원*, 조한창
포항산업과학연구원
(kwcho@rist.re.kr*)

The interchangeability coke oven gas (COG) to mixtures of blast furnace gas (BFG) and commercials such as BPG(BFG+ LPG), CBL (COG+ BFG+ LNG) and BNG (BFG+ LNG) were examined theoretically and experimentally. In theoretical analyses, Prigg-Gilbert's and Weaver's methods were used to evaluate fuel interchangeability. In combustion experiments, various burners were tested to measure flame stability and CO emission for different fuels. COG burners were found to be tenable for the fuel conversion to CBL in the whole range of BNG fraction. The conversion from COG to BNG or BPG showed poor interchangeability without burner modification. By adopting a multi-hole fuel nozzle to increase air/fuel mixing, flame stability and quality could be improved. In case of burners using oxygen as oxidant was little affected by fuel change compared with air burners. It was found that the flame stability was strongly influenced by fuel injection velocity and air/fuel mixing.