Adsorptive Removal of Sulfur Compounds in Diesel Oil Using the Activated Carbon Based Adsorbents

Ho Hoang Phuoc, 이은진, 김가형, 손홍록[1], 김낙현[1],
송민경[2], 우희철*
부경대학교; [1]포스코에너지 연료전지연구소;
[2]부경대학교 청정생산기술연구소
(woohc@pknu.ac.kr*)

During the past decades much attention has been considered the desulfurization of diesel oil which is important as a source for the fuel cells to prevent the sulfur poisoning of both diesel steam reforming catalyst and electrode of fuel cell. Although alternative desulfurization techniques have been investigated, desulfurization for ultra-low-sulfur diesel (ULSD) is still changing. Therefore, this research focuses on the desulfurization of commercial ULSD for molten carbonate fuel cell. In this study, the performance of three commercial activated carbons (and their modifications) for desulfurization of ULSD for MCFC were investigated. The effects of porosities and functional groups which existed on the surface of the adsorbents to the adsorption capacity of sulfur were evaluated using saturation test. Ultra trace sulfur analyzer (NSX-2100V) was used to analyze total sulfur concentration in each fuel sample. In results, the correlation between the sulfur performance of activated carbons and their phys-chem properties were discussed.