

NO decomposition mechanism by Ni-impregnated ACF

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In the present study, decomposition of NO over a rayon-based activated carbon fiber after the impregnation of Ni were investigated using as an ACF packed flow reactor to observe the breakthrough curves of NO. The adsorption capacity of non-treated ACF was poor in NO adsorption. However, NO was successfully decomposed to N₂ with the 20wt% Ni-impregnated ACF at 300°C. As metal contents were increased, decomposition of NO was increased. The 10wt% Ni-impregnated ACF was the most efficient at 350°C and 400°C. But, CO and CO₂ were generated as the results of NO decomposition. Also, weight of ACF was decreased. Therefore, Ni-impregnated ACF have problem in utility.