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Evaluation of elemental mercury removal by different adsorbents**Hsing-Wang Li, Chyi-Woei Young, Wen-Chang Chen and Chi-Liang Chen**
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Mercury is regarded as the hazardous air pollutant and it exists in coal combustion flue gas in different forms, such as particle-bound mercury, oxidized mercury and elemental mercury (Hg^0) that is difficult to collect by existing air pollution control devices due to its highly volatile and nearly insoluble in water. Adsorption has excellent potential for Hg^0 removal from flue gases. This study aims to evaluate Hg^0 removal by two types of adsorbents in a lab-scale reactor. At influent Hg^0 concentration of 0.89~0.91 $\mu g/m^3$, the Hg^0 removal was 28.4% by molecular sieve at a Space Velocity (SV) of 12,000 hr^{-1} , while 45.3% Hg^0 removal under the condition of 9,000 hr^{-1} . On the other hand, the Hg^0 removal by activated carbon increased from 97.9% to 99.3% as SV decreased from 12,000 to 9,000 hr^{-1} . Therefore, the SV played an important role on the Hg^0 adsorption. In summary, the Hg^0 removal by activated carbon at a low SV can achieve over 99%.

Biography

Hsing-Wang Li is currently working as an Air Pollution Control Engineer at China Steel Corporation. His work is to reduce air pollutant emission from any possible sources during the production line.

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