Institute of Chemical Engineering

Adsorption isotherms of water vapour over zeolite adsorbents used in the separation of CO2 from flue gases

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Abstract: Experimental results are presented of the adsorption equilibria of water vapour over zeolite molecular sieves 13X (Molsiv and Grace) which may be used in the separation of CO_2 from flue gas streams. It is found that water vapour is the strongest adsorbing species among the main components of the flue gas. It is also concluded that the H_2O isotherms are strongly non-linear, so that even very small amounts of water vapour in a separated flue gas stream may significantly reduce CO_2 sorption capacity of the two adsorbents studied.

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