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Sustainable porous materials for gas adsorption applications: A concise review

Abstract

Many new sustainable porous materials were developed for gas adsorption applications. Common materials such as activated carbon, clay materials and metal organic framework (MOF) that utilized as potential porous adsorption materials were studied. The article was also discussed on the fabrication methods of porous materials. Adsorptions of flue gas using porous materials were reviewed. It was found that the adsorption properties of porous materials were highly dependent on surface area, selectivity and impregnation. Low cost porous adsorbents such as clay and fly ash were also reviewed as potential and cost effective materials to be used in industries.

Keywords

Activated carbon; Adsorbent; Adsorption; Carbon dioxide; Clay; Metal organic framework; Nitrogen oxide; Porous ceramics