

Nanopore Characteristics of Micro and Mesoporous Materials Probed with CO₂ Adsorption Measurement at 273K

선민호, 김탁희, 이 준, 장영배, 조성준*
전남대학교 신화학소재공학과
(sjcho@chonnam.ac.kr*)

The CO₂ adsorption measurement at 273K was employed to examine as a possible alternative technique for the characterization of the pore system. The adsorption isotherm of CO₂ on microporous solid such as sodium exchanged zeolite A and Y was the typical Langmuir type while on mesoporous solid such as SBA-15, silica gel, ion exchange resin, the adsorption isotherm was proportional to the applied pressure, following the Henry's law. Such distinctive difference between the adsorption isotherms provided the reasonable basis to discriminate the pore characteristics in the sample otherwise it was difficult to obtain it. Also, it was possible to get the surface property of polymeric material such as conduction polymer using CO₂ adsorption measurement at 273 K while the N₂ adsorption isotherm measurement at 77 K did not give the meaningful data because of the collapse of the weak pore structure.