

Phase equilibria for water + carbon dioxide + nitrogen in gas hydrates

김선형, 이재을, 서명도, 이철수, 강정원*
고려대학교 화공생명공학과
(jwkang@korea.ac.kr*)

Phase equilibria involving gas hydrates and the effect of nitrogen on phase equilibria have been studied by several researchers. The studies on 4-phase equilibria with aqueous, liquid carbon dioxide, vapor, and hydrate are rare.

The new indirect method^{*1} used for measurement of solubility of carbon dioxide in water was used in present study. Predetermined composition of water, carbon dioxide, and nitrogen was injected to variable volume view cell in water bath. The temperature of system was measured for 4-phase equilibrium. The results were analyzed by CSMGem^{*2}.

[1] Kim, Y. S., B. D. Lim, et al. (2008). "Solubilities of Carbon Dioxide, Methane, and Ethane in Sodium Chloride Solution Containing Gas Hydrate." J. Chem & Eng Data 53(6): 1351-4.

[2] Sloan, E. D. and C. A. Koh (2008). Clathrate hydrates of natural gases. Boca Raton, FL, CRC Press.