

Composition and Structure Analysis of Natural Gas Hydrates Collected at U-1328 on IODP Expedition

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On purpose to identify the structure and composition of natural gas hydrate in the deep ocean sediments, spectroscopic analysis on natural gas hydrate sample was performed. The natural gas hydrate sample was mined from U-1328 site on IODP Expedition at Hydrate Ridge offshore Oregon (U.S.A.) and investigated by gas chromatography (GC), powdered x-ray diffraction (PXRD), Raman and ¹³C nuclear magnetic resonance (NMR) spectroscopy. From the results of PXRD, structure of natural gas hydrate sample was confirmed as sI. Raman and ¹³C NMR spectroscopic studies verified that the major components of natural gas hydrate sample was methane gas which was captured in large and small cages of structure I hydrate.