

## Structural and Compositional Identifications of Natural Gas Hydrates

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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 Site 1249 on ODP Leg 204 at Hydrate Ridge offshore Oregon (U.S.A.) and investigated by Gas Chromatography, PXRD, <sup>13</sup>C NMR spectroscopy. From the results of PXRD, structure of natural gas hydrate sample was confirmed as sI. <sup>13</sup>C 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. Cage occupancies of small and large cages were also examined.