# Methane hydrate formation in various clays

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Clay minerals are important components of the marine sediments with clathrate hydrates. Most 2:1 clay minerals widespread in the world wide marine and also have many types of clays with different chemical compositions. When the hydrate form between the interlayer of the 2:1 clay minerals, the structure of clays did not change seriously. In this work, we found the experimental proof of the hydrate formation within the the interlayer of 2:1 clay minerals. For the anlaysis of forming hydrate, we used the solid state $^{13}C$ NMR recorded on a Bruker DMX 400 MHz NMR spectrometer.