Methane hydrate crystal growth simulation using Monte-Carlo

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Recently, the interest in the methane and CO2 hydrates has turned from a problem in gas pipelines for the oil and gas industry to a promising energy resource and a possible way of sequestering CO2.

However, there are a lot of technical and economical problems to produce it as resources. It is very important to know the process of the methane hydrate crystal growth under different condition of temperature and concentration.

In this study, we have simulated the growth of MH at four different concentration under 273(K) by using cellular automata and Monte-Carlo method.