# Dissolution of $CO_2$ Drop in Water at 20.0 MPa and 3.8℃

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Since the 1997 Kyoto protocol on climate change, every nation is trying to reduce $CO_2$ emission that is considered as the main cause of the global warming. To reduce $CO_2$, various researches are going on to decrease the consumption of fossil fuels by achieving higher efficiency for lights, engines, power generators, and so on. But currently the amount that can be reduced by these methods is very little and there are many problems to deal with for these methods to be widely used. But the direct disposal of $CO_2$ into the deep sea can remove huge amount of $CO_2$. By capturing $CO_2$ from flue gas that is emitted from power plants, iron mills or refineries, a large amount of $CO_2$ can be reduced from being emitted to the atmosphere. To dispose of $CO_2$ into the deep sea, the behavior and thermodynamic properties of $CO_2$ in the deep sea are important. In this experiment the picture of $CO_2$ drop was taken at every unit step under the deep sea condition(20.0 MPa, 3.8℃). This experiment found out the difference between the solubility of $CO_2$ with hydrate layer and that without hydrate layer. The rate of dissolution is calculated by FDM.