

Carbon Dioxide Capture and Utilization through Aqueous Carbon Fixation Process

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Many of the nations in the world are concerned about climate changes caused by massive emissions of greenhouse gases including carbon dioxide. Since carbon dioxide gas has significant impact on global warming due to its massive emission, many developed nations have developed carbon capture and storage(CCS) technology. In CCS, captured carbon dioxide gas is compressed in high pressurized tank. And then, they are transported to underground or deep ocean to be disposed. However, there exist some problems. Stored carbon dioxide suddenly can be released to atmosphere by unstable crust activity such as earthquake and can destroy ocean ecosystem when it is disposed and dissolved in deep ocean. In order to prevent these drawbacks and to earn economic profits, ways of using captured carbon dioxide have been studied and they are called Carbon Capture and Utilization(CCU). In this research, captured carbon dioxide was converted to calcium carbonate by reacting with solution containing calcium ions. In order to verify formed solid was precipitated calcium carbonate(PCC), instrumental analysis were performed and the results were consistent with assumptions.