Novel Method of Carbon Dioxide Utilization Using Pre-treated Brine Solution

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To prevent climate change caused by carbon dioxide emission from industrial processes, many nations and researchers have been performing research concerned about carbon capture. However, some problem arose when disposing captured carbon dioxide. When captured carbon dioxide is disposed at underground, it can leak into the atmosphere and it can be stimulated when the ground is unstable. Also, when captured carbon dioxide are stored in deep ocean, it can destroy peripheral ecosystem. Hence, research about developing method for utilizing carbon dioxide have been performed. There are many forms of converted carbon dioxide such as plastic, oil, carbonate, and so on. In this research, captured carbon dioxide was converted into calcium and magnesium carbonate. For fast conversion rate, aqueous solution of monoethanolamine was used. To converted captured CO2 into precipitated calcium carbonate(PCC) and magnesium carbonate, pretreated brine solution was used. Through this carbon fixation process, captured carbon dioxide is converted to stable material and can be utilized for various industrial purposes. Conversion ratio and performance of conversion solution are introduced in this presentation.

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