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Investigation of the mechanism of dissolution enhancement by using CO2 microbubbles in geological sequestration

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CO_2microbubble injection is a novel technology for CO_2geological sequestration. Currently most of CO_2geological sequestration projects are focused on large-scale emission sources, while there is a practical need to inject $CO_2$from small- to middle- scale emission sources. CO_2microbubble injection is suitable for storing CO_2in aquifers with non-anticline (monotonic) structure in a low-cost concept. Inlaboratory experiments, CO_2microbubbles were generated by injecting CO_2through micro porous filtersand the behaviors of CO_2microbubbles were recorded by a high speed video camera system. Our results suggest that more microbubbles generated by filters with smaller pore and CO_2dissolution enhanced byCO_2microbubbles. We are working on quantifying the CO_2 microbubbles size and the volume of dissolved CO_2.

Keywords: CO2 geological sequestration, microbubble, dissolution