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Geotechnical properties of CO₂ hydrate bearing sediments for CO₂ storage in shallow-sea sediments

Lee Kang-Ryel¹, Kim Kyoung-Yul¹, Lee Dae-Soo¹, Oh Woo-Sang¹

¹*Korea Electric Power Research Institute, Korea*

Carbon dioxide capture and storage (hereafter CCS) had received attention which may reduce CO₂ in the use of fossil fuels. CCS technology was anticipated to contribute 19% of CO₂ emission reduction. The cost of CO₂ reduction was increased 70% without applying CCS technology. Currently, CCS was required to be a low cost for less than of \$30/tCO₂ and to be stored in large quantities. Therefore, the innovative storage technology using CO₂ hydrate bearing sediments in the role of cap rock was introduced for solving the problem of high storage-cost and the limit of geological conditions (cap rock). In other words, a fluid-permeability was decreased more than 4~800 times as forming gas hydrate in sediments and these characteristic were used to CO₂ geological storage with CO₂ hydrate bearing sediments for replacing cap rock. This study presents geotechnical properties of CO₂ hydrate bearing sediments using elastic wave and electrical resistivity.