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Status and prospect on CO₂ capture and sequestration in China

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The paper presents the research achievements of CO₂ Capture, Utilization, and Sequestration in China. Criteria of CO₂ capture and geological sequestration (CCGS), CO₂ capture and utilization sequestration (CCUS) both are established in China, including screening criteria of the sites of CO₂ storage and storage security and risk assessment. Also, in order to study CO₂ storage capacity at different reservoirs and regions in China, the paper modifies existing evaluation methods, and shows clearly what problems existing in the previous methodologies. China's CO₂ storage potential in saline aquifers, depleted oil and gas reservoirs, deep brine-saturated formations and CO₂-flooding enhanced-oil-recovery (CO₂-EOR) and enhanced coal-bed methane recovery (ECBM) are evaluated by means of the modified method. Various trapping mechanisms of CO₂ storage are discussed in the paper. In addition, CCGS and CCUS technologies have been used to CCGS and CCUS (CO₂-EOR) projects, CO₂ geological storage project of Shenhua group in Erdos basin, and CO₂-EOR project of Jilin, Daqing, Shengli and Yanchang, both categories are introduced respectively. Final, prospect on China's CCUS will be sighted, CO₂ capture from coal-chemical plants where CO₂ has high purity and its price is relative cheap, thus offering a good opportunity for implementing CO₂-EOR. It is practice verified that CO₂-EOR as a practical CCUS technology is a good practical and economical way for reducing CO₂ emissions and enhancing oil recovery. The authors point out strategy of the CCUS technology R&D, innovation and low cost CO₂ use technologies to deal with the present low oil crude price.

Biography

Dou Hongen is a senior Petroleum Engineer at Research Institute of Petroleum Exploration and Development (RIPED), Petro-China, Beijing, China. He has worked in the R&D area of oil and gas development and production since joining RIPED in June 1998. He was senior visiting scholar at the University of Tulsa in March to November 2010. He has published over 70 papers (including Chinese and English). He holds MS and PhD degree from the graduate school of RIPED, Beijing, China, and was a Post-doctoral researcher at Beijing University of Aeronautics and Astronautics from 1998 to 2000. He serves as Technical Editor for *SPEJ*, and also as Technical Reviewer for *Journal of Petroleum Science and Engineering*. He won 2012 SPE Outstanding Technical Editor award. He is as a committee member of SPE CO₂ capture, utilization and Storage (CCUS) from 2013 to present.

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