

Supporting Information for

Carbonated Water Injection and *In situ* CO₂ Exsolution in Oil-wet Carbonate: A Micro-scale Experimental Investigation

Ziqiang Qin*, Maziar Arshadi, Mohammad Piri

Center of Innovation for Flow through Porous Media, Department of Petroleum Engineering, University of Wyoming, Laramie, Wyoming 82071, United States

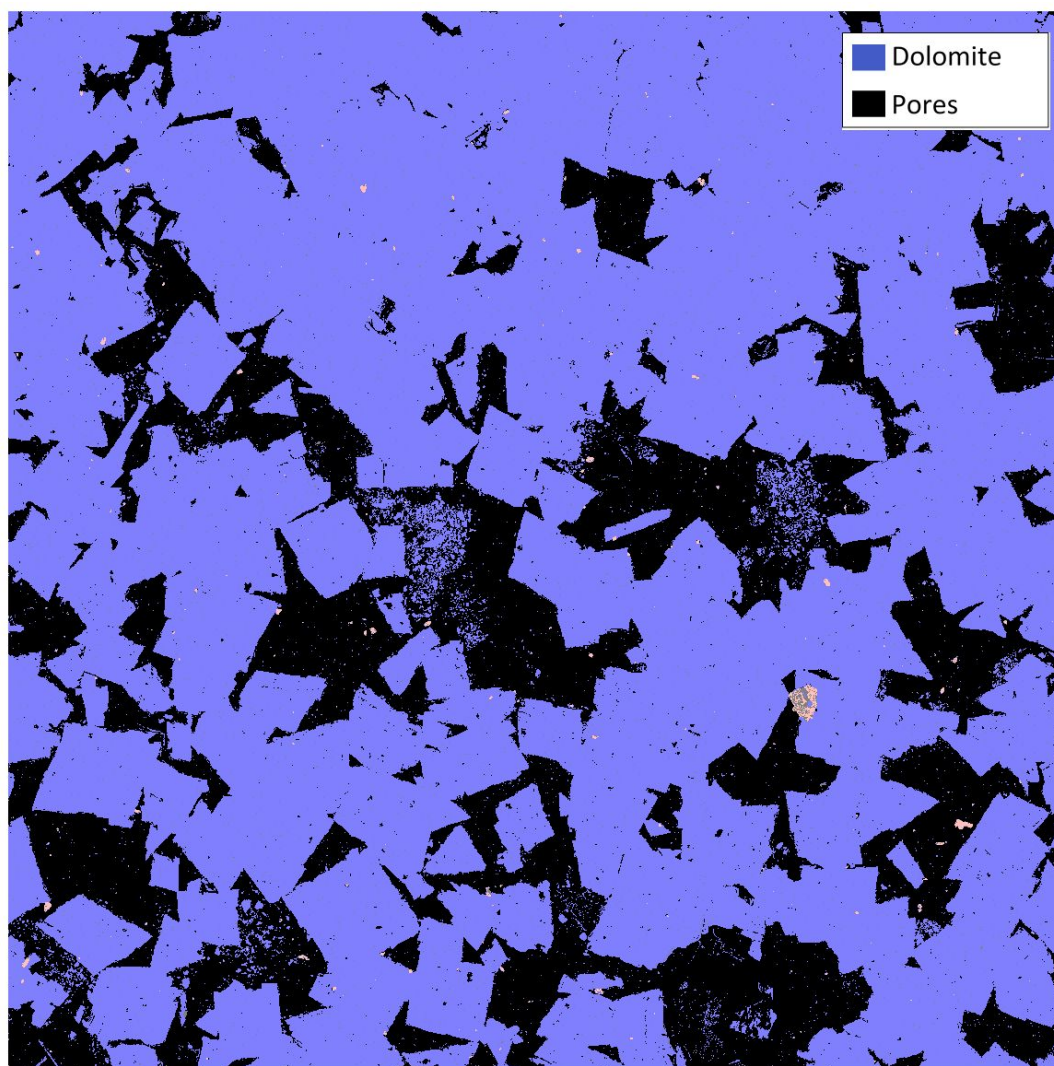


Figure S1: Mineral map of Fond du Lac sample obtained using Quantitative Evaluation of Minerals by SCANning electron microscopy (QEMSCAN) imaging technique. Reproduced from [Mirchi, V.; Sabti, M. J.; Piri, M.; Goual, L. Microscale investigation of the impact of surfactant structure on the residual trapping in natural porous media. *Industrial & Engineering Chemistry Research* **2019**, 58, 9397-9411.]. Copyright [2019] American Chemical Society.

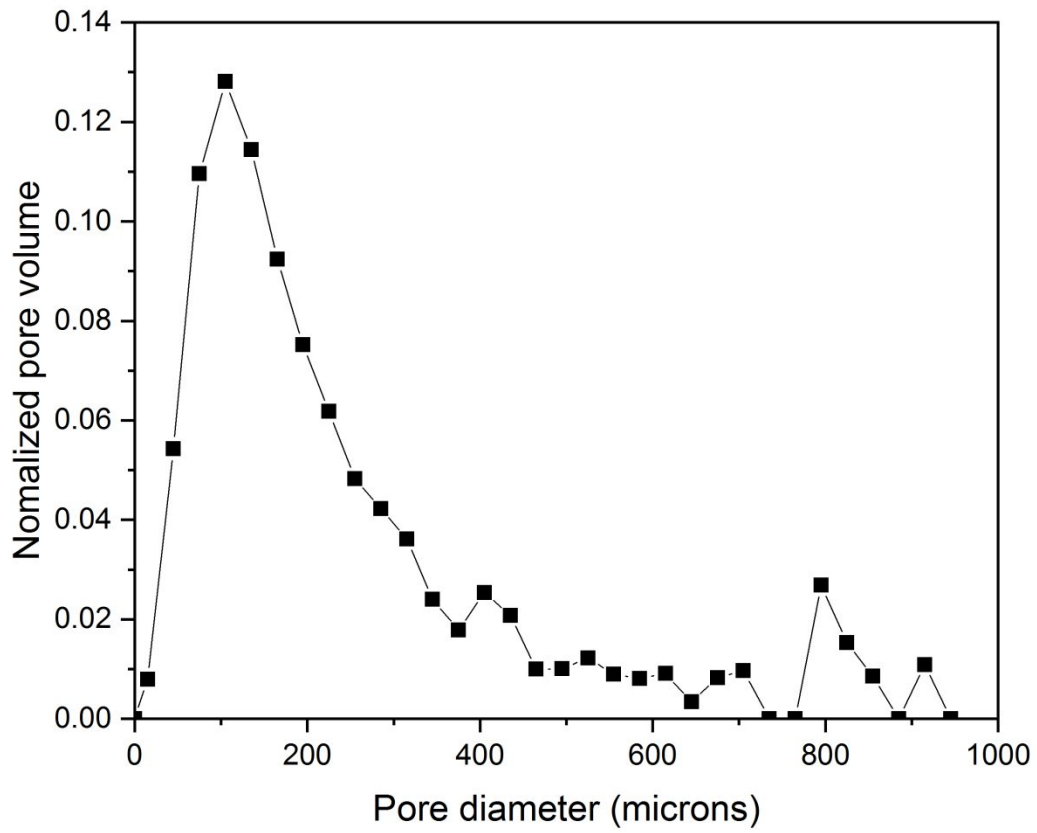
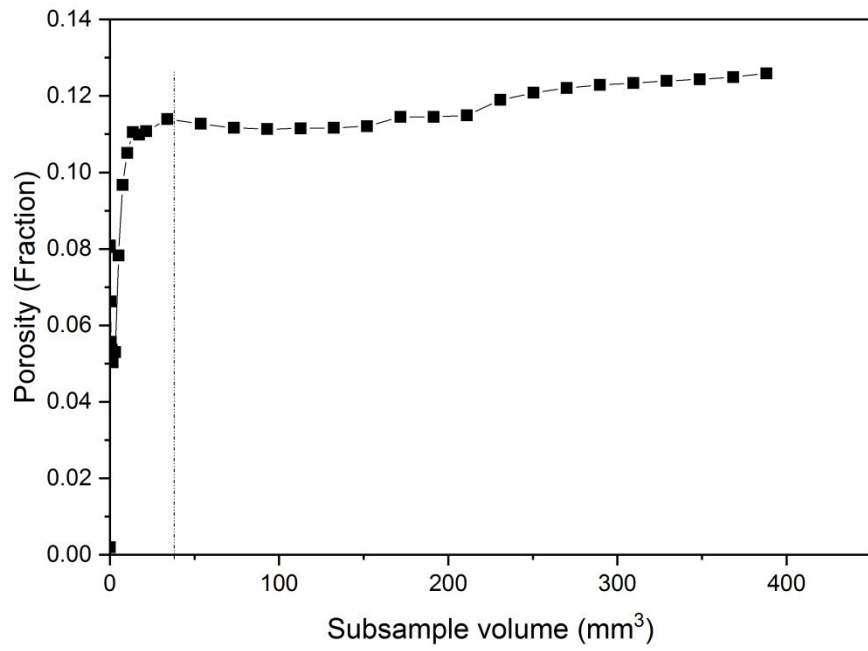
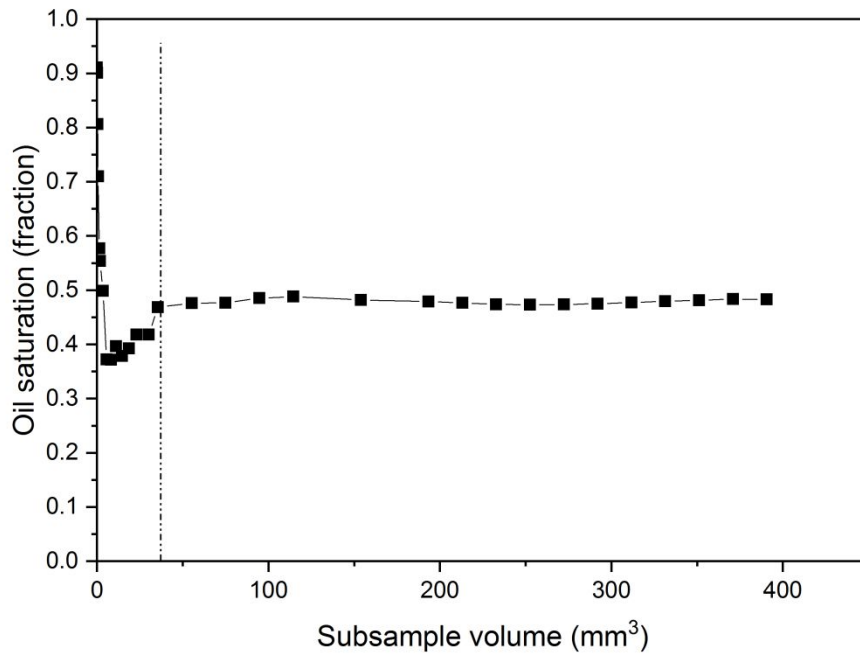


Figure S2: Pore size distribution of the Fond du Lac rock used in the flow experiments



(a)



(b)

Figure S3. Variation of (a) porosity and (b) saturation values with different sub-sample volumes.