

# Experimental Study on Optimizing Steam Solvent Co-Injection Process in Akan Carbonate Oilfield

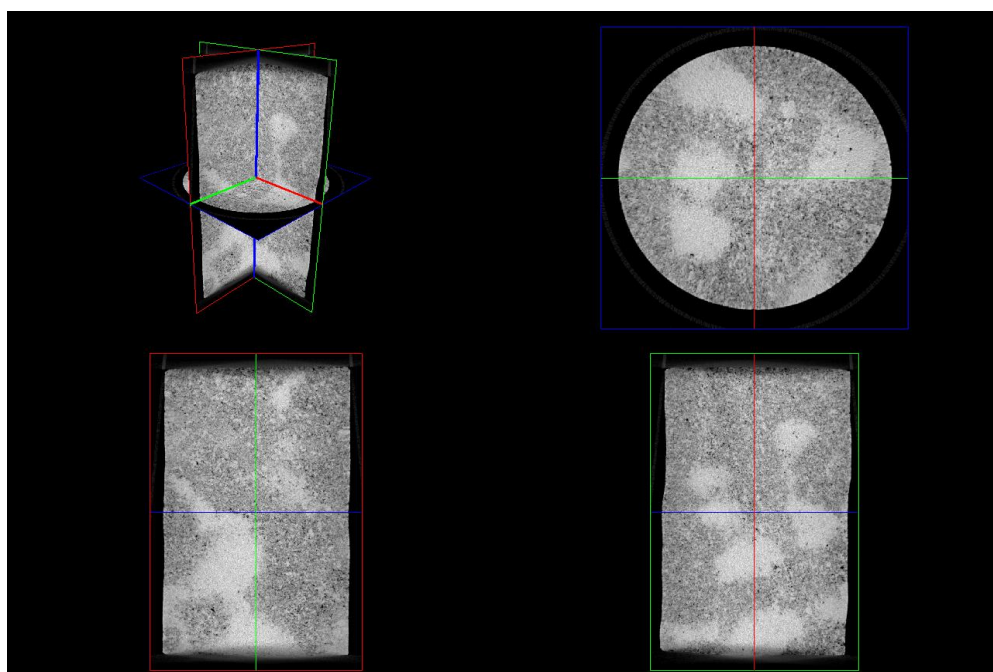
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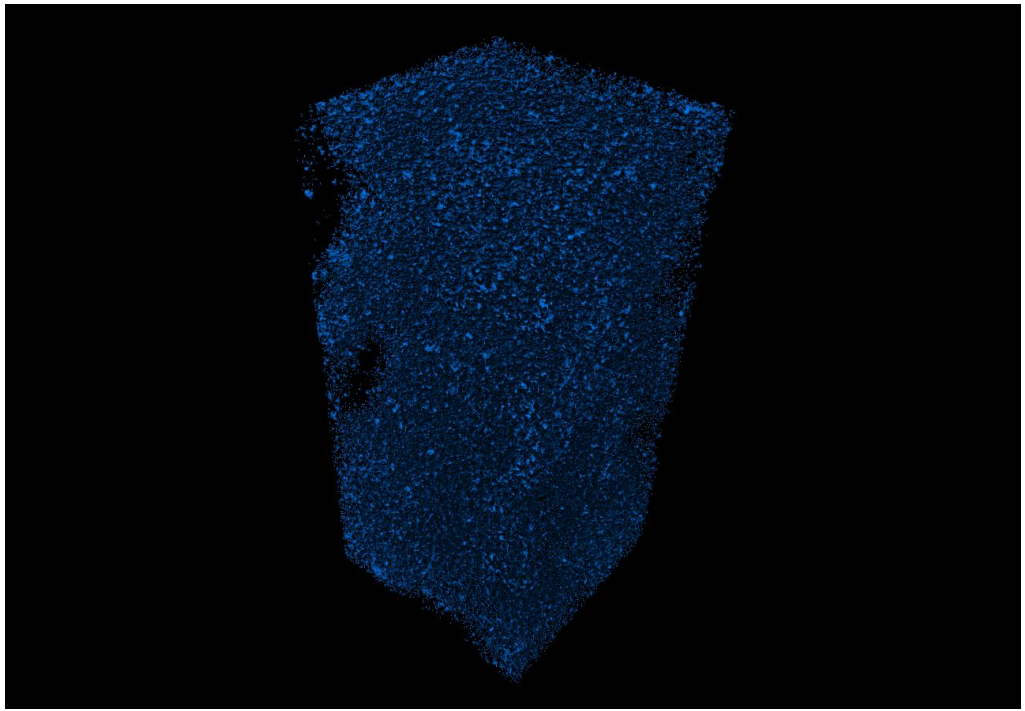
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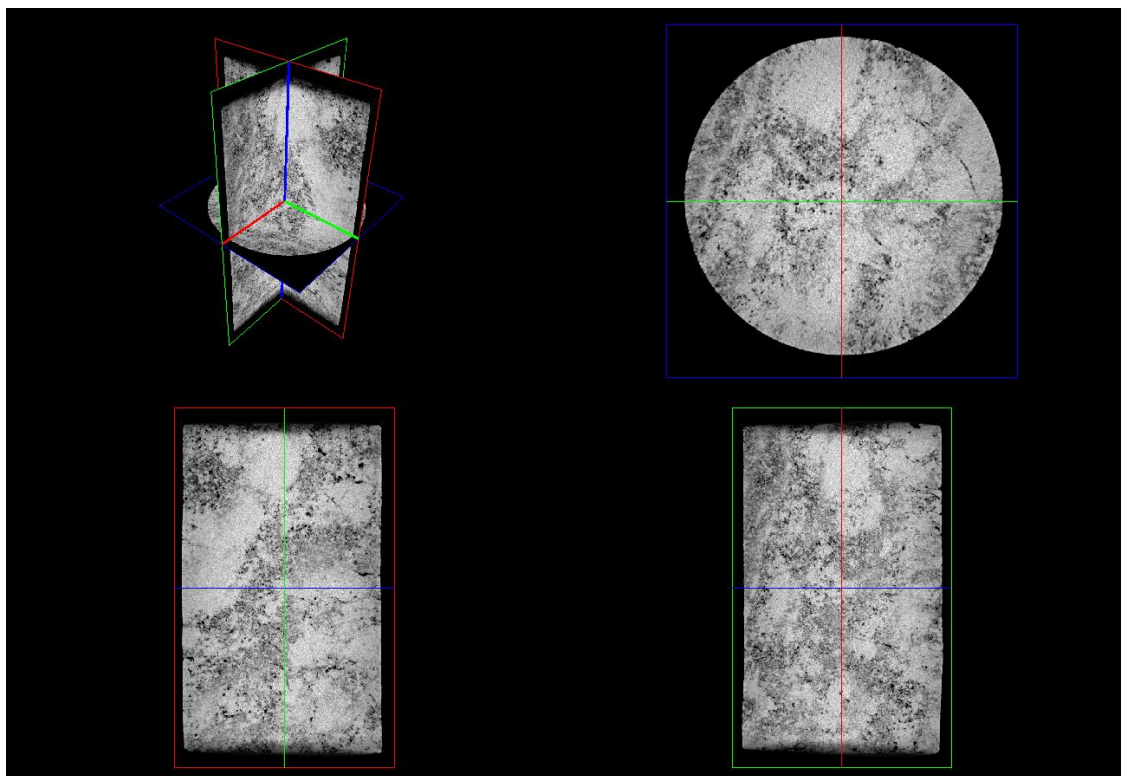
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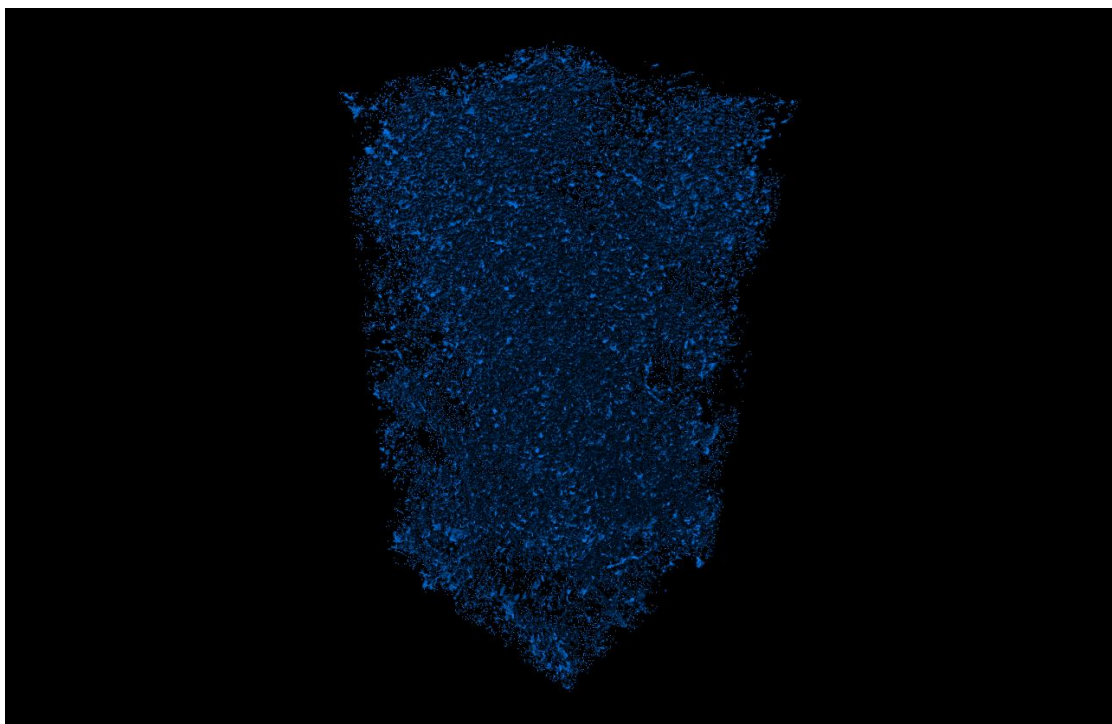
Sample 1C



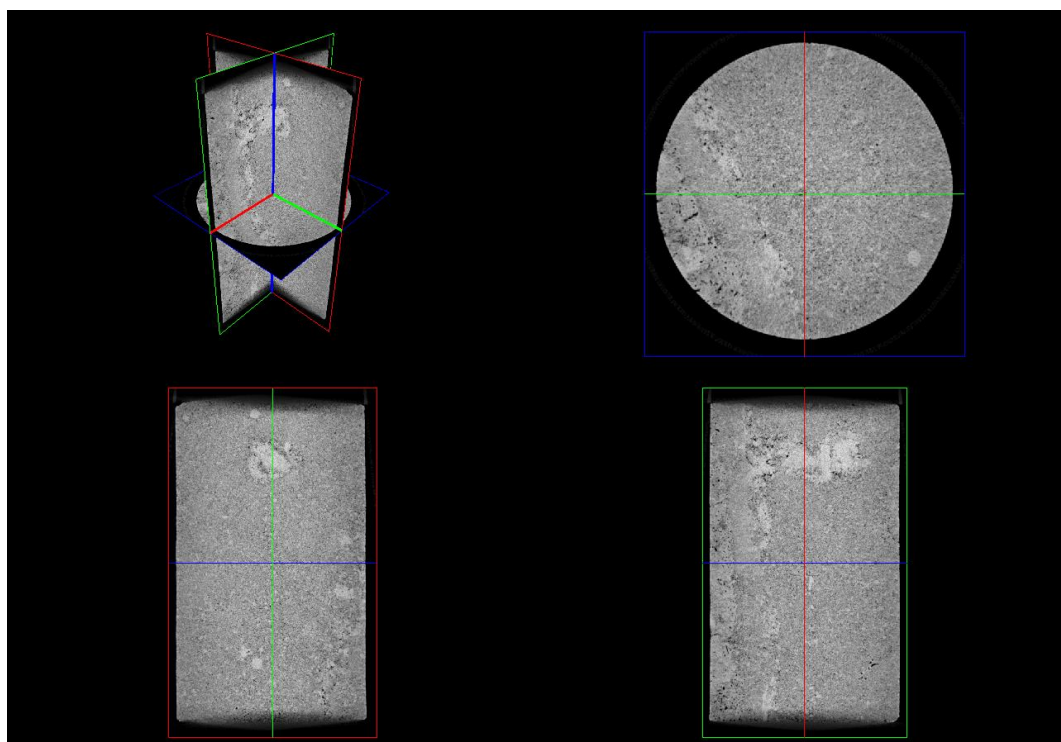


Sample 4C





Sample 8C



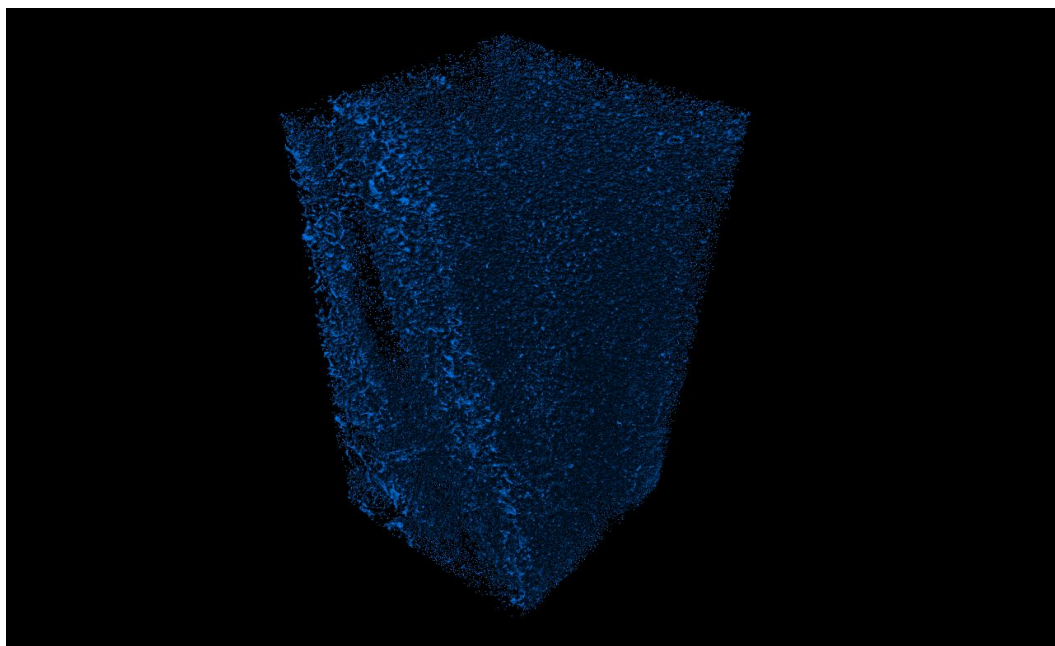


**Figure S1.** Orthogonal X-ray density sections and three-dimensional visualization of the shape of the void space of the samples

**Table S1-** Appearance of the solution (solvent + oil) before and after soaking

| № | Core sample, 30x50 | solvent | Core sample, 30x50                                                                  |                                                                                       |
|---|--------------------|---------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|   |                    |         | Solution appearance (fluid + oil)                                                   |                                                                                       |
|   |                    |         | Core samples at the beginning of soaking                                            | After soaking (7 days)                                                                |
| 1 | 1c                 | water   |  |  |

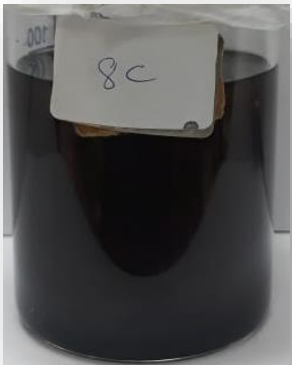
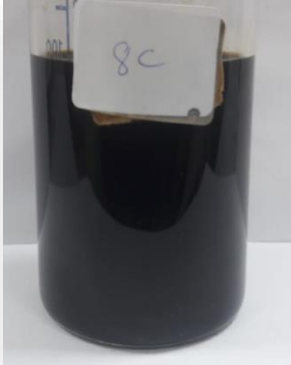
|   |    |         |                                                                                    |                                                                                      |
|---|----|---------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 2 | 4c | toluene |   |   |
| 3 | 8c | xylene  |  |  |

**Table S2.** The oil-saturated core model before and after soaking

| № | Core sample, 30x50 | solvent | Initial core                                                                        | Core after soaking                                                                    |
|---|--------------------|---------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 | 1c                 | water   |    |    |
| 2 | 4c                 | toluene |  |  |
| 3 | 8c                 | xylene  |  |  |

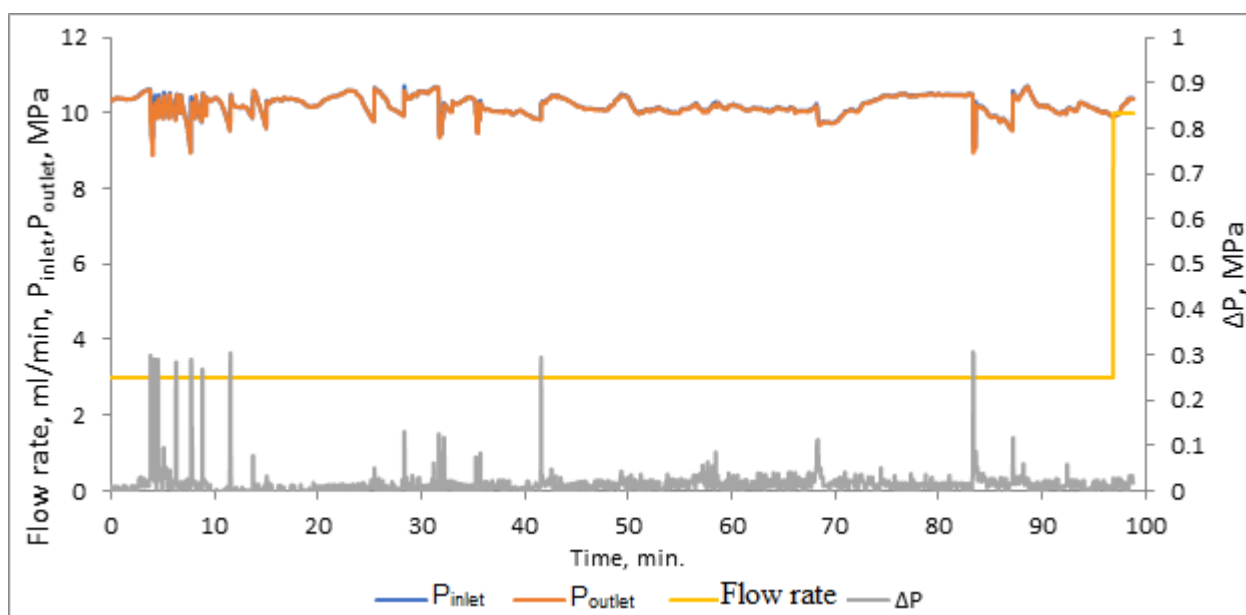


**Figure S2.** Pressure profiles at the inlet, outlet of the model, pressure drop and water flow in the control experiment (steam)

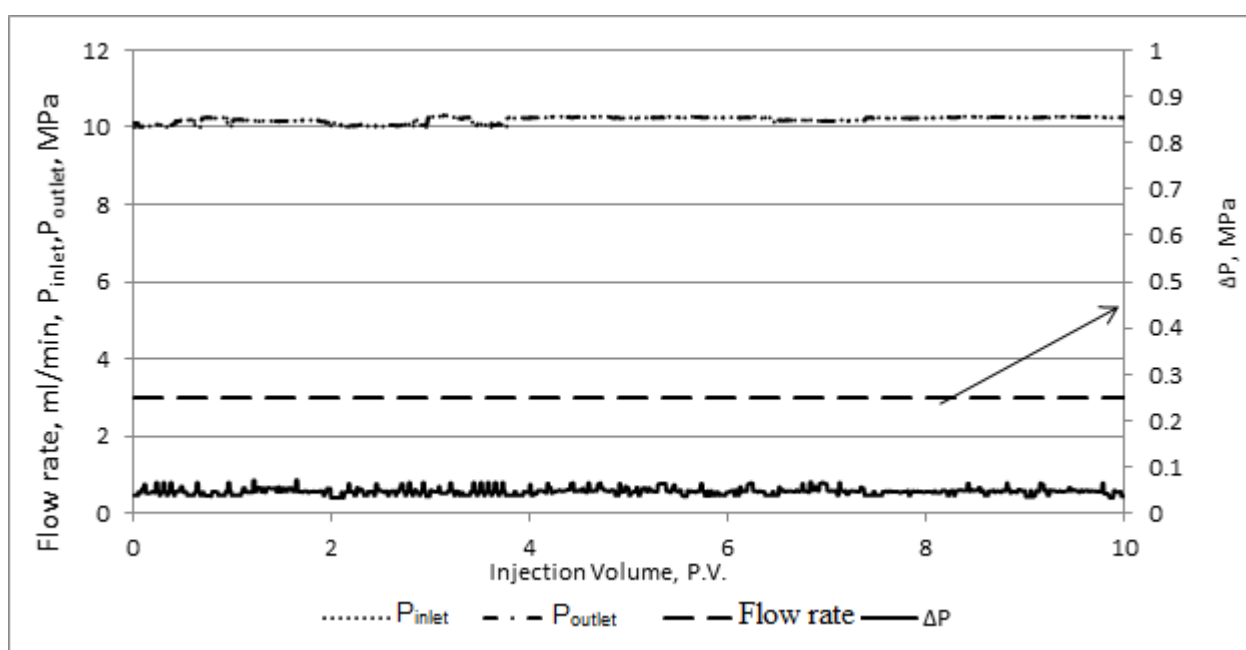


**Figure S3.** Pressure profiles at the inlet and outlet of the model, pressure drop and water flow in the experiment (steam with a solvent was supplied in slug)

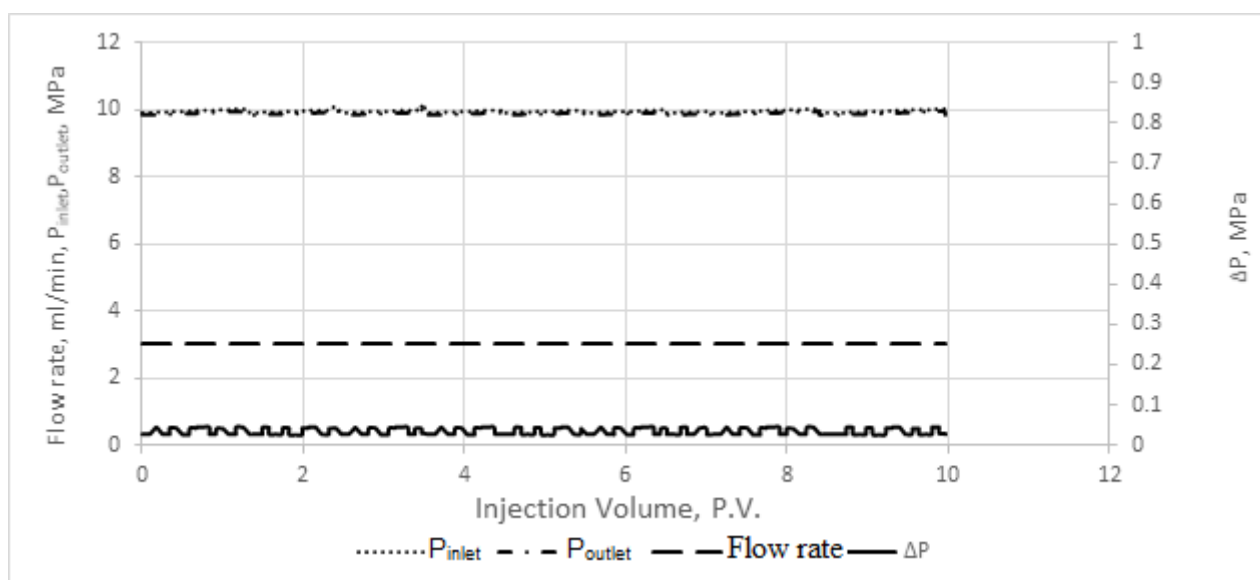


**Figure S4.** Pressure profiles at the inlet and outlet of the model, pressure drop and water flow in the experiment (steam with the solvent was supplied in a mixed mode)