

Electronic Supporting Information (ESI)

For the article:

**A Mechanistic Investigation of Low Salinity Water Flooding
Coupled with Ion Tuning for Enhanced Oil Recovery**

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Table S1: Physical parameters of crude oil

API @15°C	23.40
Density (g/cm ³) @60°C	0.8849
Acid number (mg KOH/g)	0.6
Saturates (%)	52.9
Aromatics (%)	29.5
Asphaltenes (%)	7.8
Resins (%)	9.7
Viscosity (cp)	5.1

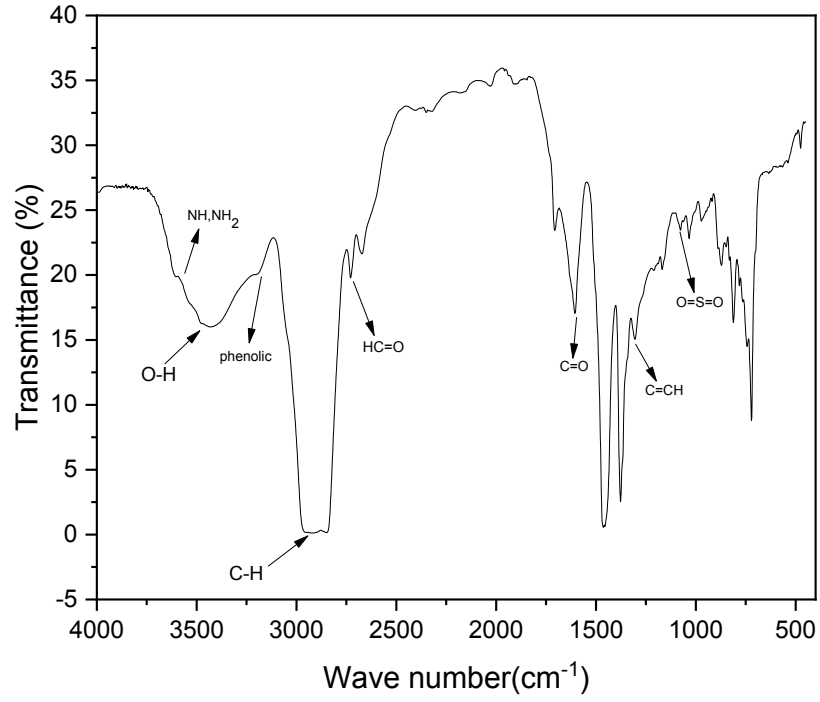


Fig. S1. FTIR Characteristics of Crude Oil used in this study

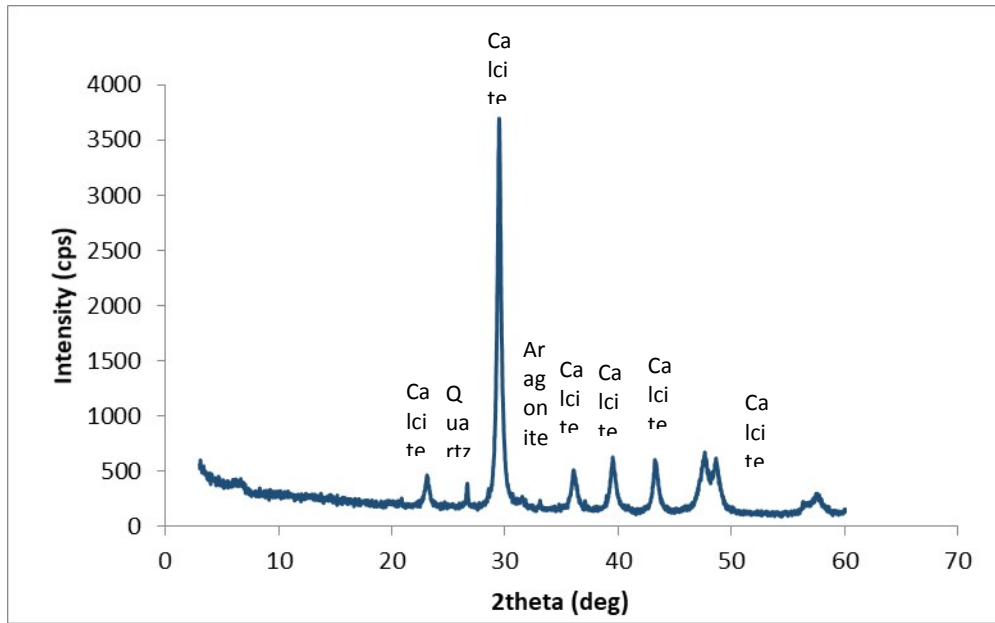


Fig. S2. XRD of carbonate rock

Table S4 - Petrophysical properties of cores

Core Number	Length (cm)	Dia (cm)	Porosity (vol %)	Brine Permeability (md)	Connate Water Saturation (%)
1.	7.5	3.84	16.20	1.32	25.30
2.	7.5	3.84	15.83	1.87	18.69
3.	7.5	3.84	16.80	1.55	20.03
4.	7.5	3.84	16.43	1.52	24.83
5.	7.5	3.84	16.01	1.48	21.46

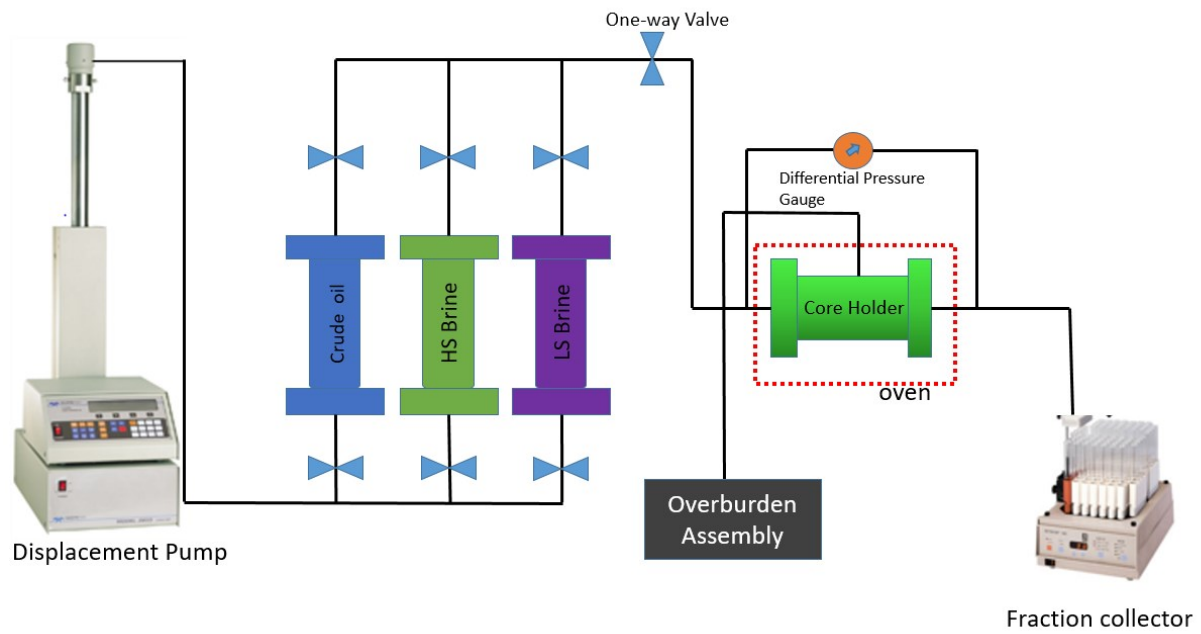


Fig. S3. Core Flooding Setup

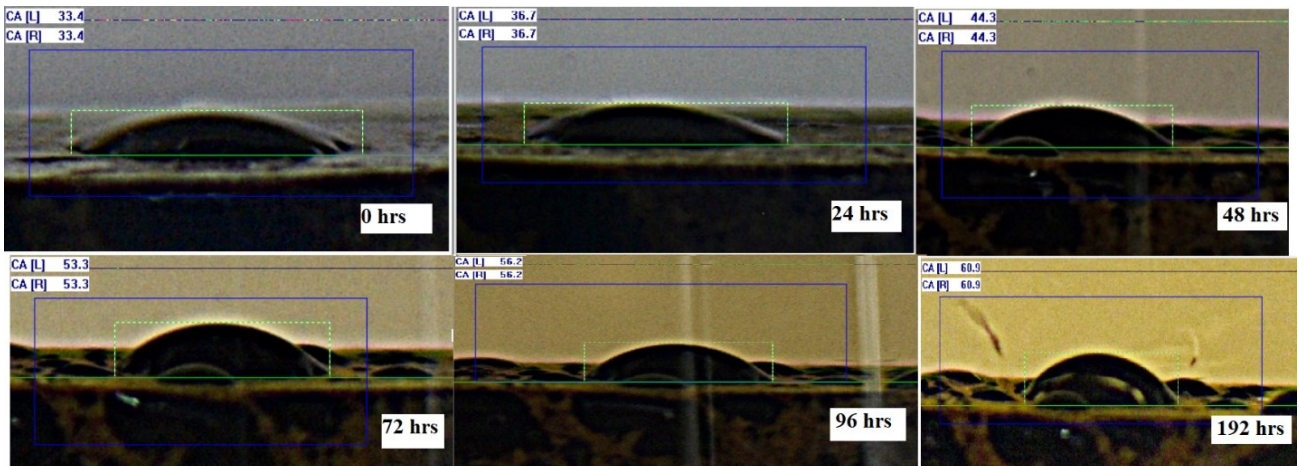


Fig. S4. Time variant contact angle of 20dSW (optimum salinity) at 90°C