

Supporting Information

Effects of Paraffinic Group on Interfacial Tension Behavior of CO₂-Asphaltenic Crude Oil Systems

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Table S1. Experimental interfacial tension values, γ , for (CO₂/oil(A)) system, at different pressures and constant temperature 323 K.^a

Pressure/Mpa	γ/mNm^{-1}					
	A-0	A-1	A-2	A-3	A-4	A-5
1.72	20.52±0.09	18.16±0.08	16.85±0.08	15.08±0.08	13.61±0.11	13.24±0.10
2.07	19.79±0.09	17.32±0.08	16.15±0.08	14.34±0.08	13.12±0.11	12.49±0.10
2.41	18.74±0.09	16.59±0.08	15.22±0.08	13.79±0.08	12.37±0.11	11.72±0.10
2.76	18.14±0.09	15.85±0.08	14.66±0.08	12.93±0.08	11.72±0.11	11.04±0.10
3.10	17.37±0.09	14.88±0.08	13.80±0.08	12.21±0.08	11.13±0.11	10.44±0.10
3.45	16.49±0.09	14.14±0.08	13.02±0.08	11.29±0.08	10.46±0.11	9.69±0.10
3.79	15.69±0.09	13.51±0.08	12.2±0.08	10.68±0.08	9.85±0.11	8.99±0.10
4.14	15.01±0.09	12.79±0.08	11.35±0.08	9.96±0.08	9.14±0.11	8.69±0.10
4.48	14.10±0.09	11.70±0.08	10.75±0.08	9.29±0.08	8.40±0.11	7.88±0.10
4.83	13.61±0.09	11.18±0.08	10.11±0.08	8.67±0.08	7.87±0.11	7.20±0.10
5.17	12.77±0.09	10.14±0.08	9.07±0.08	7.97±0.08	7.11±0.11	6.77±0.10
5.51	11.99±0.09	9.52±0.08	8.33±0.08	7.29±0.08	6.49±0.11	5.88±0.03
5.86	11.09±0.09	8.79±0.08	7.54±0.08	6.87±0.08	5.79±0.02	5.63±0.03
6.20	10.28±0.09	8.21±0.08	6.83±0.08	6.21±0.03	5.57±0.02	5.52±0.03
6.55	9.49±0.09	7.21±0.03	6.15±0.02	6.05±0.03	5.46±0.02	5.44±0.03
6.89	8.63±0.09	7.05±0.03	6.01±0.02	5.84±0.03	5.31±0.02	5.25±0.03
7.24	7.94±0.09	6.89±0.03	5.74±0.02	5.66±0.03		
7.58	7.26±0.09	6.67±0.03	5.65±0.02	5.53±0.03		
7.93	6.52±0.09					
8.27	5.91±0.03					
8.62	5.76±0.03					
8.96	5.54±0.03					
9.31	5.37±0.03					

^a Standard uncertainties u in pressure and temperature measurement are $u(p) = 5 \times 10^{-2}$ MPa and $u(T) = 0.1$ K, respectively.

Table S2. Experimental interfacial tension values, γ , for (CO₂/oil (B & C)) system, at different pressures and constant temperature 323 K.^a

Pressure/Mpa	γ/mNm^{-1}			
	B-0	B-1	B-2	C
1.72	17.13±0.09	15.77±0.10	14.12±0.11	11.41±0.18
2.07	16.24±0.09	14.92±0.10	13.32±0.11	10.75±0.18
2.41	15.54±0.09	14.14±0.10	12.75±0.11	10.13±0.18
2.76	14.63±0.09	13.42±0.10	12.05±0.11	9.39±0.18
3.10	13.75±0.09	12.72±0.10	11.51±0.11	8.78±0.18
3.45	13.20±0.09	12.01±0.10	10.72±0.11	8.09±0.18
3.79	12.39±0.09	11.33±0.10	9.91±0.11	7.48±0.18
4.14	11.75±0.09	10.59±0.10	9.25±0.11	6.86±0.18
4.48	11.03±0.09	9.85±0.10	8.59±0.11	6.45±0.18
4.83	10.39±0.09	9.18±0.10	7.91±0.11	5.80±0.18
5.17	9.71±0.09	8.55±0.10	7.31±0.11	5.09±0.18
5.51	8.90±0.09	7.81±0.10	6.55±0.11	4.44±0.18
5.86	8.22±0.09	7.01±0.10	5.78±0.11	3.77±0.18
6.20	7.47±0.09	6.32±0.10	5.06±0.11	3.20±0.18
6.55	6.99±0.09	5.54±0.03	4.51±0.04	2.66±0.18
6.89	6.30±0.03	5.35±0.03	4.39±0.04	2.06±0.18
7.24	6.14±0.03	5.10±0.03	4.21±0.04	
7.58	5.83±0.03	4.92±0.03	4.11±0.04	
7.93	5.62±0.03	4.73±0.03	3.98±0.04	

^a Standard uncertainties u in pressure and temperature measurement are $u(p) = 5 \times 10^{-2}$ MPa and $u(T) = 0.1$ K, respectively.