

Kinetics of CO₂ Absorption in an Ethylethanolamine Based Solution

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Table S1. The Physical Properties of the Nonaqueous EMEA + DEEA Solutions.

T	[EMEA]	[DEEA]	ρ	μ	H_{CO_2}	D_{CO_2}
(K)	(kmol m ⁻³)	(kmol m ⁻³)	(kg m ⁻³)	(mPa s)	(kPa m ³ kmol ⁻¹)	(10 ¹⁰ m ² s ⁻¹)
298	0.5	7.2	883.0	4.64	670	6.15
298	1.0	6.8	884.2	5.01	670	5.66
298	2.0	6.0	885.6	5.45	670	5.12
298	3.0	5.3	890.2	6.39	670	4.31
313	0.5	7.1	870.4	3.63	899	8.26

313	1.0	6.7	871.0	3.68	899	8.08
313	2.0	6.0	876.4	4.15	899	7.06
313	3.0	5.3	882.8	4.69	899	6.16
328	0.5	7.0	860.4	2.95	1170	10.66
328	1.0	6.6	863.2	3.22	1170	9.69
328	2.0	5.9	865.2	3.48	1170	8.82
328	3.0	5.1	866.8	4.10	1170	7.37

Table S2. The Physical Properties of the Hydrated EMEA + DEEA Solutions at 313

K.

H ₂ O volume ratio	[EMEA]	[DEEA]	ρ	μ	H_{CO_2}	D_{CO_2}
(%)	(kmol m ⁻³)	(kmol m ⁻³)	(kg m ⁻³)	(mPa s)	(kPa m ³ kmol ⁻¹)	(10 ¹⁰ m ² s ⁻¹)
0	3.0	5.3	882.8	4.69	899	6.16
1	3.0	5.2	879.2	5.93	935	5.80
5	2.9	5.0	892.6	8.32	1082	4.98
10	2.8	4.5	902.0	11.00	1269	3.45
20	2.5	3.9	917.2	14.15	1656	2.38
50	2.1	2.6	949.4	11.41	2881	2.44
70	1.8	1.6	952.2	8.45	3732	3.09
100	1.5	0.8	957.2	6.58	5036	3.72
120	1.4	0.4	964.6	5.24	5919	4.53
150	1.2	0.2	970.8	4.39	7255	5.23

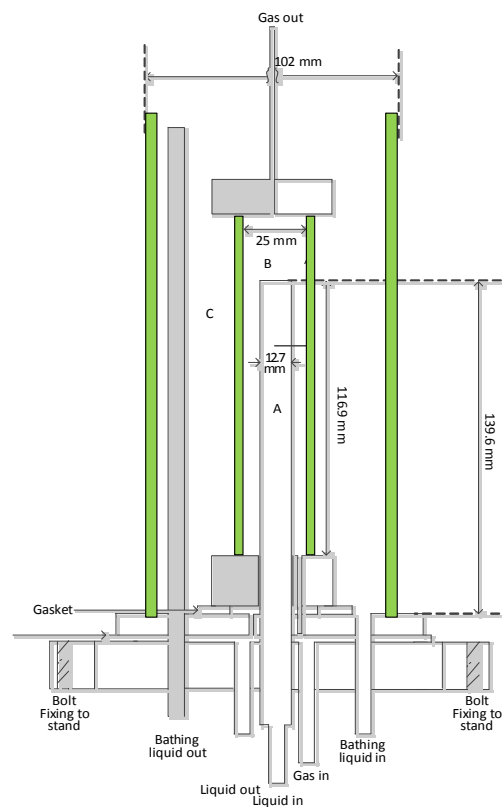


Figure S1. The structure of the wetted-wall column.

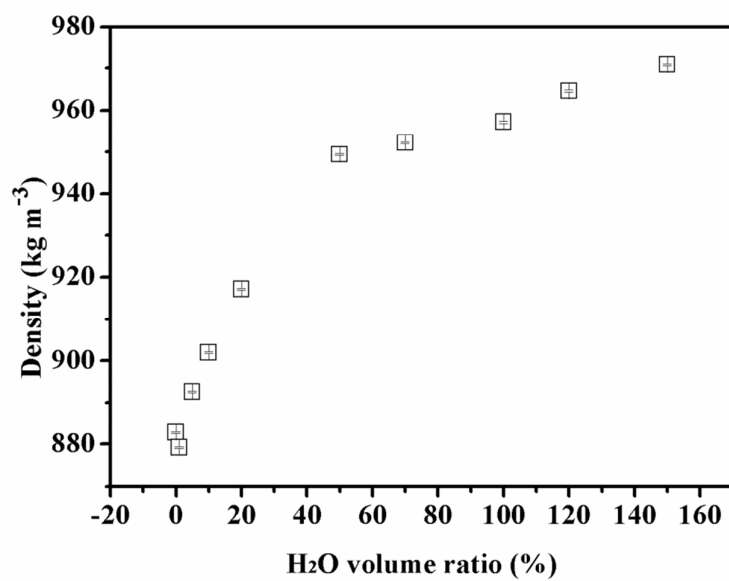


Figure S2. Variations of density with H₂O volume ration at 313 K for hydrated EMEA + DEEA solution.

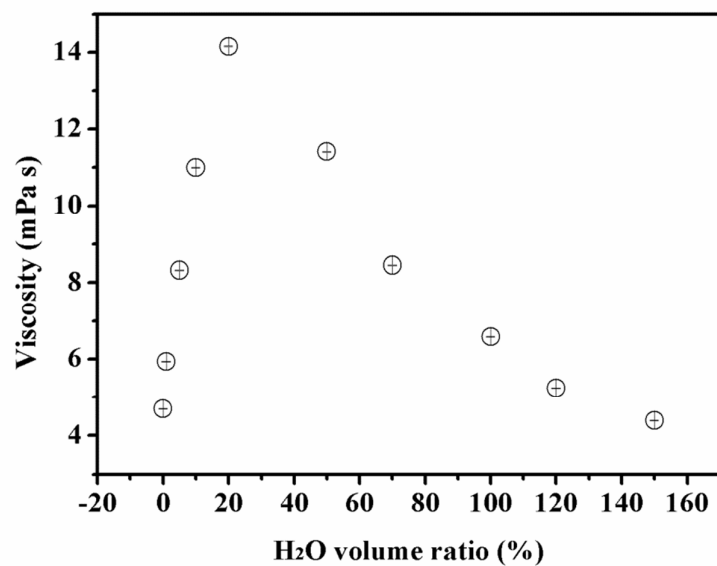


Figure S3. Variations of viscosity with H₂O volume ration at 313 K for hydrated
EMEA + DEEA solution.

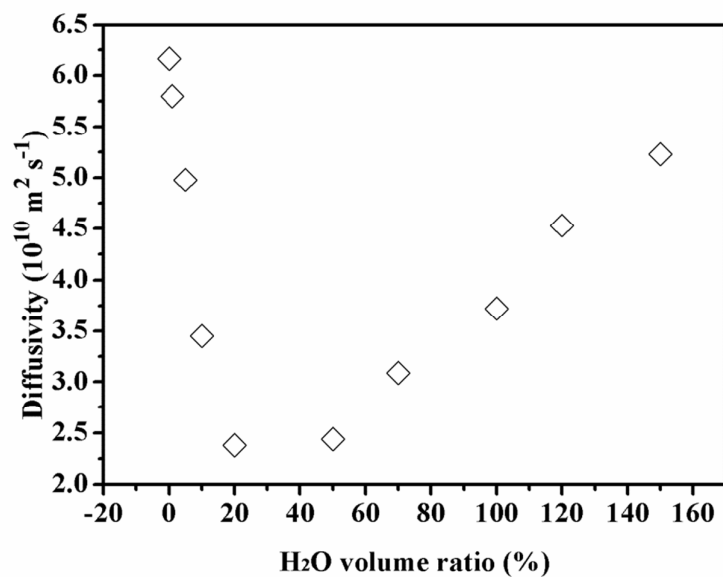


Figure S4. Variations of diffusivity with H₂O volume ration at 313 K for hydrated
EMEA + DEEA solution.

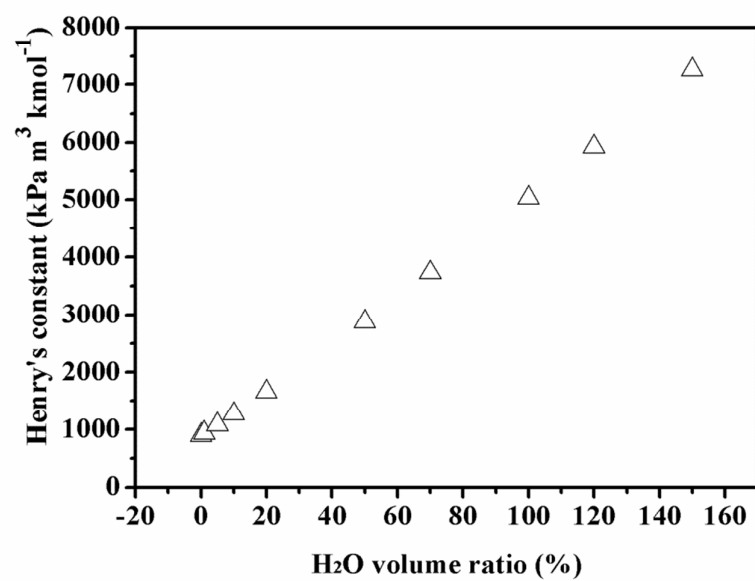


Figure S5. Variations of Henry's constant with H₂O volume ration at 313 K for hydrated EMEA + DEEA solution.