Supplementary Information

Table S1: Values for measurement of CO_2 loading in 10% aqueous MEA determined using pressure drop method (Equation 2)[1]

T (K)	V_{GV} (L)	z_1	P_1 (bar)	z_2	P_2	V_{STR} (L)	z	P_{STR} (bar)	V_{MEA} (L)	$n_{MEA,0}$ (mol)	α (mol/mol)
303.15	0.6	0.811	32.8	0.834	29.2	1.4	0.995	1.0	0.22	0.365	0.225
	0.6	0.834	29.2	0.844	27.7	1.4	0.995	1.0	0.22	0.365	0.369
	0.6	0.845	27.7	0.857	25.7	1.4	0.995	1.0	0.22	0.365	0.550
	0.6	0.857	25.7	0.869	23.4	1.4	0.995	1.0	0.22	0.365	0.751
	0.6	0.869	23.4	0.887	20.6	1.4	0.988	2.3	0.22	0.365	0.823
	0.6	0.887	20.6	0.896	18.7	1.4	0.984	3.0	0.22	0.365	0.883
	0.6	0.897	18.7	0.940	11.3	1.4	0.968	6.1	0.22	0.365	1.042
	0.6	0.834	29.2	0.879	21.9	1.4	0.947	10.0	0.22	0.365	1.156
	0.6	0.762	40.3	0.861	25.0	1.4	0.892	19.8	0.22	0.365	1.219
	0.6	0.660	53.1	0.768	39.2	1.4	0.829	30.0	0.22	0.365	1.342
	6.6	0.564	63.0	0.573	62.2	1.4	0.763	40.1	0.22	0.365	1.465
	6.6	0.568	62.2	0.579	61.2	1.4	0.684	50.3	0.22	0.365	1.504
313.15	0.6	0.811	36.6	0.832	33.0	1.4	0.995	1.0	0.22	0.365	0.222
	0.6	0.830	33.4	0.838	31.9	1.4	0.995	1.0	0.22	0.365	0.359
	0.6	0.838	31.9	0.849	29.9	1.4	0.995	1.0	0.22	0.365	0.540
	0.6	0.850	29.9	0.861	28.0	1.4	0.995	1.0	0.22	0.365	0.706
	0.6	0.859	28.0	0.865	27.0	1.4	0.994	1.3	0.22	0.365	0.754
	0.6	0.865	27.0	0.876	25.0	1.4	0.990	2.2	0.22	0.365	0.812
	0.6	0.876	25.0	0.889	22.5	1.4	0.985	3.2	0.22	0.365	0.888
	0.6	0.889	22.5	0.922	16.0	1.4	0.971	6.0	0.22	0.365	1.029
	0.6	0.770	43.9	0.794	39.6	1.4	0.955	9.3	0.22	0.365	1.042
	0.6	0.757	45.9	0.856	28.7	1.4	0.902	20.0	0.22	0.365	1.204
	0.6	0.716	52.1	0.811	36.7	1.4	0.849	30.0	0.22	0.365	1.304
	0.6	0.645	62.2	0.739	48.7	1.4	0.792	40.0	0.22	0.365	1.347
	6.6	0.630	64.4	0.638	63.0	1.4	0.730	50.0	0.22	0.365	1.491
323.15	0.6	0.795	44.1	0.811	40.9	1.4	0.996	1.0	0.22	0.365	0.191
	0.6	0.812	40.9	0.822	38.9	1.4	0.996	1.0	0.22	0.365	0.375
	0.6	0.822	38.9	0.831	37.0	1.4	0.996	1.0	0.22	0.365	0.549
	0.6	0.830	37.0	0.837	35.5	1.4	0.996	1.0	0.22	0.365	0.684
	0.6	0.838	35.5	0.843	34.7	1.4	0.994	1.3	0.22	0.365	0.720
	0.6	0.842	34.8	0.848	33.2	1.4	0.991	2.0	0.22	0.365	0.768
	0.6	0.850	33.2	0.858	30.9	1.4	0.986	3.2	0.22	0.365	0.809
	0.6	0.861	30.9	0.891	24.3	1.4	0.974	6.0	0.22	0.365	0.986
	0.6	0.893	24.1	0.928	16.2	1.4	0.956	10.1	0.22	0.365	1.038
	0.6	0.803	42.8	0.883	26.2	1.4	0.911	20.1	0.22	0.365	1.102
	0.6	0.757	51.2	0.840	35.1	1.4	0.865	30.0	0.22	0.365	1.162
	0.6	0.733	55.6	0.823	38.6	1.4	0.816	40.0	0.22	0.365	1.210
	6.6	0.689	63.4	0.697	62.0	1.4	0.764	50.0	0.22	0.365	1.293

[1] Gas constant, R used for calculation is 0.083145 bar.L/(mol.K)