

Supporting information

Table S1. Conversion of DMO

Time(h)	Conversion of DMO(%)				
	Cu/CA	Cu/0.1B-CA	Cu/0.3B-CA	Cu/0.5B-CA	Cu/1B-CA
12.0	87.28	90.13	87.48	46.06	65.07
18.0	93.70	95.14	97.44	85.62	66.45
36.0	98.68	97.73	100.00	65.27	67.69
48.0	100.00	100.00	100.00	70.26	75.09
60.0	100.00	100.00	84.56	73.80	73.77
84.0	100.00	100.00	86.84	60.35	71.33
108.0	100.00	100.00	59.03	51.96	72.02
132.0	100.00	96.35	48.94	42.16	64.86
144.0	100.00	96.48	58.93	42.58	65.35
158.0	97.93	95.12	56.72	38.26	61.08
170.0	98.88	97.23	55.12	28.63	51.38
182.0	97.26	94.21	44.43	25.63	40.54

Reaction conditions: 230°C, 2.4 MPa, LHSV =1 h⁻¹, H₂/DMO=180, 30wt% DMO/methanol as feed.

Table S2. Selectivity of EG

Time(h)	Selectivity of EG(%)				
	Cu/CA	Cu/0.1B-CA	Cu/0.3B-CA	Cu/0.5B-CA	Cu/1B-CA
12.0	34.75	56.97	45.79	0.00	0.00
18.0	26.48	54.36	54.11	28.57	6.03
36.0	49.23	56.25	53.77	39.92	8.03
48.0	65.28	60.53	48.45	40.01	7.25
60.0	70.99	68.38	45.16	41.67	9.29
84.0	69.1	64.22	40.42	27.08	9.67
108.0	68.05	61.84	35.5	21.43	10.02
132.0	60.21	67.44	30.21	17.41	11.20
144.0	60.05	65.79	11.34	0.00	11.02
158.0	61.11	64.96	0.00	0.00	12.01
170.0	54.61	63.46	0.00	0.00	8.68
182.0	39.77	58.74	0.00	0.00	8.62

Reaction conditions: 230°C, 2.4 MPa, LHSV =1 h⁻¹, H₂/DMO=180, 30wt% DMO/methanol as feed.

Table S3. Selectivity of MG

Time(h)	Selectivity of MG(%)				
	Cu/CA	Cu/0.1B-CA	Cu/0.3B-CA	Cu/0.5B-CA	Cu/1B-CA
12.0	33.75	16.57	12.21	21.55	20.89
18.0	58.79	19.73	8.39	28.52	40.52
36.0	32.33	29.18	17.32	24.05	60.53
48.0	18.92	22.58	33.28	30.96	65.41
60.0	13.02	14.84	37.33	37.24	65.90
84.0	16.46	17.78	41.28	47.03	63.42
108.0	19.38	19.82	45.94	53.71	62.51
132.0	22.91	21.61	50.09	50.72	55.36
144.0	25.29	23.68	67.81	53.82	46.97
158.0	25.33	22.19	67.81	59.46	48.03
170.0	24.91	23.05	66.59	66.28	50.99
182.0	24.66	25.79	65.68	68.25	50.97

Reaction conditions: 230°C, 2.4 MPa, LHSV =1 h⁻¹, H₂/DMO=180, 30wt% DMO/methanol as feed.