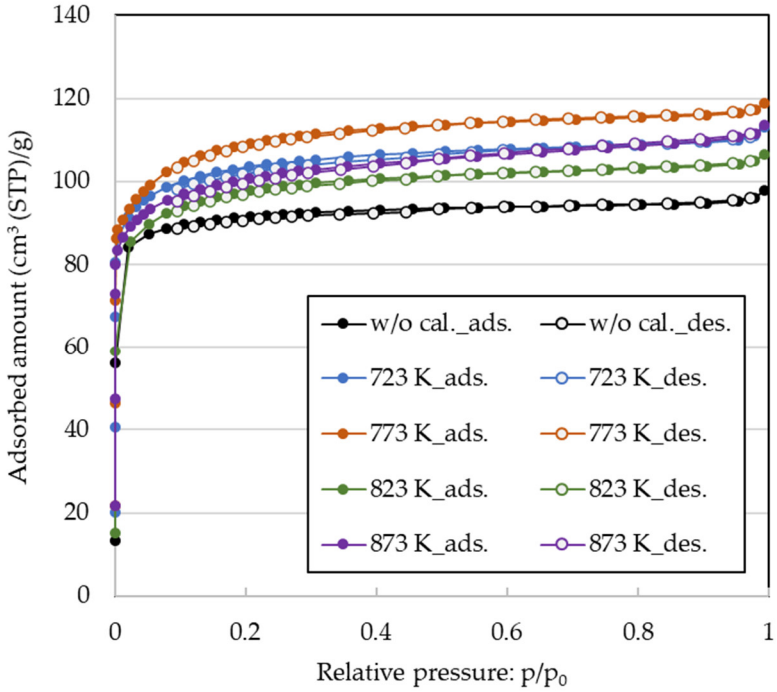

Figure S1. N_2 adsorption–desorption isotherms for 840NHA (MFI) at 77 K.

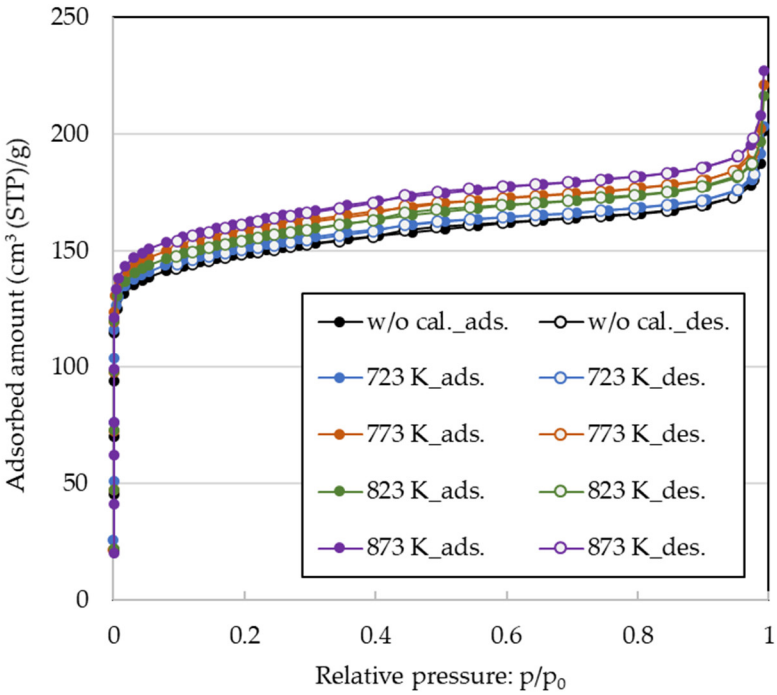

Figure S2. N_2 adsorption–desorption isotherms for 940HOA (BEA) at 77 K.

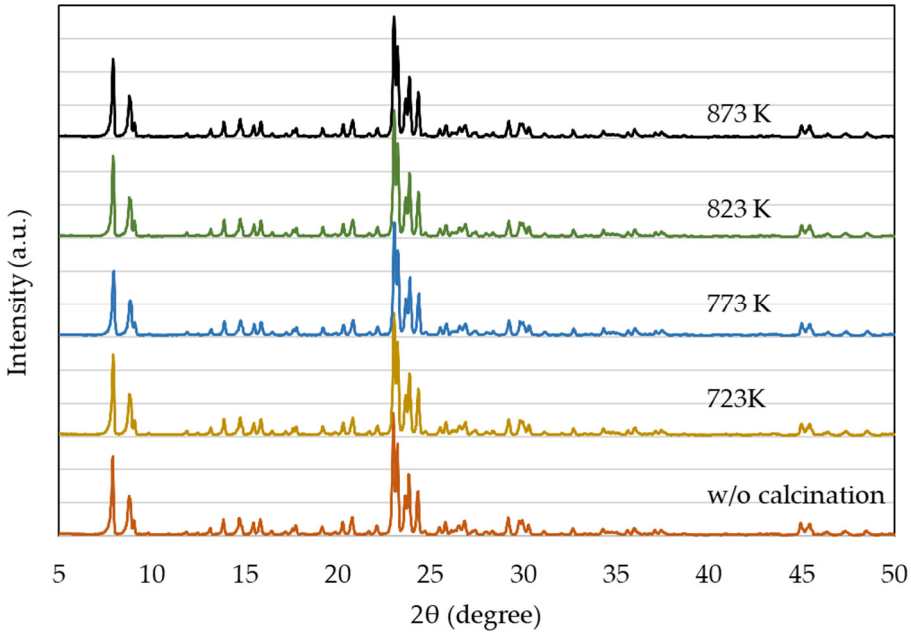

Figure S3. XRD patterns of 840NHA (MFI) at different calcination temperatures.

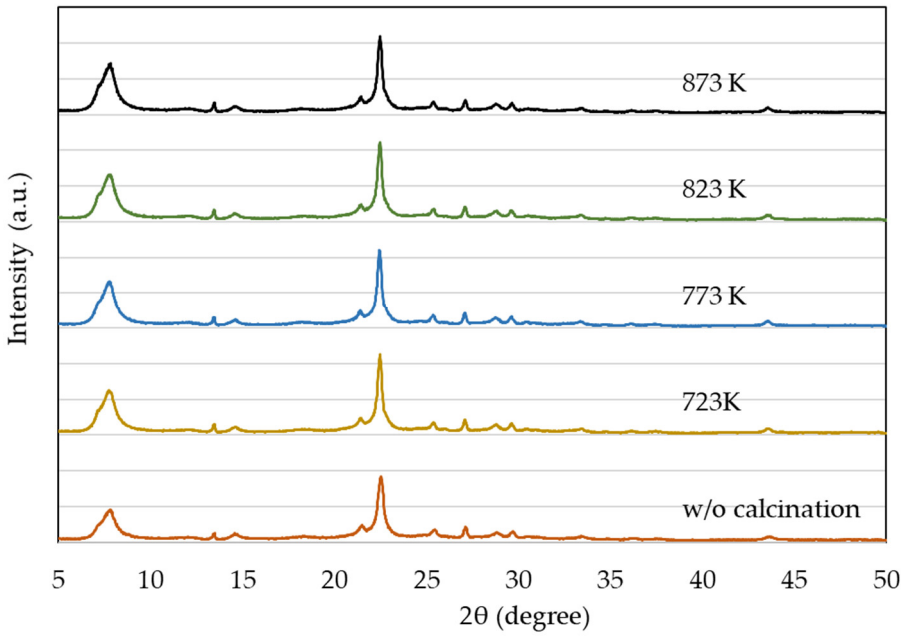

Figure S4. XRD patterns of 940HOA (BEA) at different calcination temperatures.

Table S1. Supplementary table for multiple regression analysis.

Material	Calcination temp. (K)	Micro surface area ($m^2\ g^{-1}$)	External area ($m^2\ g^{-1}$)	Total pore volume ($cm^3\ g^{-1}$)	Micropore volume ($cm^3\ g^{-1}$)	Weak acid (mmol/g)	Strong acid (mmol/g)	*n*-butene (C-mol%)
		x_1	x_2	x_3	x_4	x_5	x_6	y
720NHA	723	352	28	0.37	0.11	1.358	1.369	22.3
	773	460	27	0.37	0.14	1.406	1.373	27.6
	823	436	27	0.33	0.13	1.386	1.288	26.7
	873	474	29	0.38	0.14	1.297	0.999	6.8
840NHA	723	519	3	0.17	0.17	0.774	0.749	18.7
	773	525	4	0.18	0.17	0.774	0.747	13.4
	823	458	3	0.16	0.16	0.760	0.713	13.0
	873	495	8	0.17	0.16	0.735	0.675	4.2
940HOA	723	758	15	0.30	0.25	0.498	0.268	7.8
	773	789	16	0.33	0.26	0.486	0.255	5.7
	823	768	18	0.32	0.25	0.463	0.243	6.9
	873	804	19	0.34	0.26	0.469	0.231	3.7
Average		570	17	0.29	0.18	0.867	0.743	13.1
Standard deviation		162	10	0.09	0.06	0.386	0.440	8.7

Correlation coefficients (r_{ij})

x_i \ x_j	x_1	x_2	x_3	x_4	x_5	x_6	y
x_1	1.000						-0.676
x_2	-0.137	1.000					0.310
x_3	0.128	0.953	1.000				0.156
x_4	0.993	-0.226	0.042	1.000			-0.701
x_5	-0.836	0.618	0.395	-0.887	1.000		0.766
x_6	-0.908	0.464	0.229	-0.940	0.974	1.000	0.836
y	-0.676	0.310	0.156	-0.701	0.766	0.836	1.000