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APPENDIX

Table A-1 Adsorption of *p*-xylene and toluene on the *KBaX* zeolite at 40°C.

equilibrium concentration	%loading of *p*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.834	1.699	0.5531	0.5256	4.9551	1.675	0.0046	0.0045	0.7959
1.689	3.361	0.5443	0.5878	8.0062	3.198	0.0089	0.0090	1.1833
3.130	7.708	0.7105	0.6888	3.0511	6.113	0.0182	0.0181	0.3927
8.241	7.970	0.2798	-	-	6.315	0.0186	-	-
18.755	8.261	0.1149	-	-	6.793	0.0234	-	-

Table A-2 Adsorption of *p*-xylene and toluene on the *KBaX* zeolite at 65°C.

equilibrium concentration	%loading of *p*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.933	1.295	0.3757	0.3244	13.6644	0.921	0.0025	0.0023	8.4253
1.988	2.131	0.2913	0.3575	22.7430	1.850	0.0051	0.0058	12.1839
3.634	5.888	0.4480	0.4074	9.0786	4.884	0.0140	0.0135	3.7647
8.746	6.028	0.1909	-	-	5.212	0.0158	-	-
19.019	6.187	0.0903	-	-	5.685	0.0195	-	-

Table A-3 Adsorption of *p*-xylene and toluene on the *KBaX* zeolite at 90°C.

equilibrium concentration	%loading of *p*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.086	0.671	0.1666	0.1568	5.9035	0.544	0.0015	0.0014	6.5325
2.154	1.447	0.1820	0.1990	9.3145	1.313	0.0036	0.0040	9.5740
4.044	4.153	0.2817	0.2721	3.4109	3.393	0.0099	0.0096	3.0481
9.121	4.258	0.1282	-	-	3.447	0.0110	-	-
19.298	4.298	0.0612	-	-	3.641	0.0115	-	-

Table A-4 Adsorption of *m*-xylene and toluene on the *KBaX* zeolite at 40°C.

equilibrium concentration	%loading of *m*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.895	1.444	0.4371	0.4295	1.7282	1.212	0.0033	0.0036	7.4314
1.824	2.832	0.4245	0.4357	2.6348	3.387	0.0094	0.0084	10.7584
3.635	5.911	0.4516	0.4475	0.9066	6.453	0.0186	0.0192	3.3205
8.876	5.572	0.1743	-	-	6.532	0.0199	-	-
19.227	5.473	0.0791	-	-	6.914	0.0238	-	-

Table A-5 Adsorption of *m*-xylene and toluene on the *KBaX* zeolite at 65°C.

equilibrium concentration	%loading of *m*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.933	0.912	0.2401	0.2560	6.6096	0.823	0.0022	0.0024	8.1988
1.988	2.257	0.3132	0.2825	9.8038	2.857	0.0079	0.0070	12.1629
3.634	4.659	0.3269	0.3373	3.1942	5.012	0.0157	0.0163	3.9574
8.746	4.572	0.1389	-	-	5.472	0.0170	-	-
19.019	4.529	0.0646	-	-	5.591	0.0171	-	-

Table A-6 Adsorption of *m*-xylene and toluene on the *KBaX* zeolite at 90°C.

equilibrium concentration	%loading of *m*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.086	0.681	0.1697	0.1790	5.4380	0.510	0.0014	0.0016	11.4540
2.154	1.563	0.1991	0.1831	8.0483	2.152	0.0060	0.0049	17.9655
4.044	2.959	0.1869	0.1917	2.6103	3.542	0.0101	0.0108	6.5044
9.121	2.944	0.0855	-	-	3.808	0.0118	-	-
19.298	3.164	0.0443	-	-	3.899	0.0130	-	-

Table A-7 Adsorption of ethylbenzene and toluene on the The *KBaX* zeolite at 40°C.

equilibrium concentration	%loading of ethylbenzene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.025	0.918	0.2419	0.2784	15.0655	0.828	0.0023	0.0025	11.4808
1.759	3.102	0.4832	0.3776	21.8562	4.169	0.0116	0.0094	19.4505
3.404	6.852	0.5598	0.5978	6.7908	6.190	0.0178	0.0192	7.9619
8.595	6.785	0.2197	-	-	6.228	0.0202	-	-
18.921	6.777	0.0996	-	-	6.639	0.0214	-	-

Table A-8 Adsorption of ethylbenzene and toluene on the *KBaX* zeolite at 65°C.

equilibrium concentration	%loading of ethylbenzene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.128	0.500	0.1195	0.1325	10.9108	0.495	0.0014	0.0015	12.9593
2.017	2.049	0.2771	0.2312	16.5788	3.477	0.0097	0.0076	21.7134
3.752	5.410	0.3985	0.4211	5.6680	5.257	0.0152	0.0165	8.7455
8.926	5.241	0.1622	-	-	5.297	0.0159	-	-
19.143	5.540	0.0801	-	-	5.489	0.0188	-	-

Table A-9 Adsorption of ethylbenzene and toluene on the KBaX zeolite at 90°C.

equilibrium concentration	%loading of ethylbenzene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.159	0.367	0.0854	0.0976	14.3246	0.048	0.0001	0.0001	11.8983
2.177	1.364	0.1700	0.1339	21.2423	1.766	0.0049	0.0040	18.7241
4.304	3.076	0.1954	0.2090	6.9177	3.355	0.0100	0.0107	6.8120
9.387	3.092	0.0901	-	-	3.494	0.0111	-	-
19.530	3.153	0.0441	-	-	3.676	0.0114	-	-

Table A-10 Adsorption of *o*-xylene and toluene on the The *KBaX* zeolite at 40°C.

equilibrium concentration	%loading of *o*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.513	2.974	1.5801	1.1232	28.9145	2.560	0.0070	0.0073	3.6923
1.650	3.536	0.5881	0.8420	43.1695	4.448	0.0124	0.0117	5.7892
3.979	4.558	0.3167	0.2716	14.2550	6.621	0.0191	0.0195	2.0923
9.118	4.566	0.1385	-	-	6.828	0.0208	-	-
19.377	4.751	0.0677	-	-	6.896	0.0236	-	-

Table A-11 Adsorption of *o*-xylene and toluene on the *KBaX* zeolite at 65°C.

equilibrium concentration	%loading of *o*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.812	1.783	0.5965	0.5222	12.4460	1.913	0.0052	0.0055	4.0605
1.907	2.490	0.3566	0.4220	18.3415	3.531	0.0098	0.0092	6.3254
4.237	3.448	0.2237	0.2105	5.8955	5.229	0.0156	0.0159	2.2603
9.289	3.669	0.1085	-	-	5.395	0.0158	-	-
19.531	3.642	0.0512	-	-	5.431	0.0184	-	-

Table A-12 Adsorption of *o*-xylene and toluene on the *KBaX* zeolite at 90°C.

equilibrium concentration	%loading of *o*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.088	0.665	0.1651	0.1646	0.3337	0.829	0.0023	0.0026	16.9304
2.204	1.289	0.1591	0.1599	0.4986	3.428	0.0095	0.0067	29.3780
4.459	2.461	0.1507	0.1505	0.1649	3.585	0.0109	0.0123	12.4417
9.589	2.227	0.0634	-	-	3.828	0.0117	-	-
19.675	2.497	0.0346	-	-	3.873	0.0122	-	-

Table A-13 Adsorption of *p*-xylene and toluene on the *KY* zeolite at 40°C.

equilibrium concentration	%loading of *p*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.882	1.497	0.5348	0.6499	21.5180	1.298	0.0041	0.0042	2.9636
1.313	4.908	1.1967	0.8485	29.0970	4.197	0.0136	0.0130	4.6031
2.560	10.237	1.3129	1.4124	7.5790	8.421	0.0284	0.0288	1.6321
7.682	10.790	0.4627	-	-	9.016	0.0322	-	-
18.348	10.205	0.1834	-	-	9.662	0.0390	-	-

Table A-14 Adsorption of *p*-xylene and toluene on the *KY* zeolite at 65°C.

equilibrium concentration	%loading of *p*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.053	0.807	0.2409	0.3016	25.2298	7.743	0.0024	0.0026	5.7281
1.773	3.056	0.5489	0.5013	8.6650	7.025	0.0123	0.0111	9.0744
3.058	8.249	0.8790	0.8450	3.8653	7.450	0.0250	0.0259	3.3372
8.225	8.362	0.3311	-	-	3.780	0.0249	-	-
18.457	9.267	0.1643	-	-	0.760	0.0311	-	-

Table A-15 Adsorption of *p*-xylene and toluene on the *KY* zeolite at 90°C.

equilibrium concentration	%loading of *p*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.104	0.599	0.1703	0.2343	37.5681	6.048	0.0019	0.0019	4.9423
1.891	2.560	0.4296	0.3971	7.5638	6.089	0.0094	0.0087	7.6869
3.262	7.393	0.7343	0.6708	8.6421	6.067	0.0203	0.0209	2.7361
8.484	7.190	0.2745	-	-	2.912	0.0215	-	-
18.855	7.010	0.1204	-	-	0.584	0.0241	-	-

Table A-16 Adsorption of *m*-xylene and toluene on the *KY* zeolite at 40°C.

equilibrium concentration	%loading of *m*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.263	2.608	0.6704	0.6328	5.6016	3.637	0.0120	0.0170	42.1172
1.737	3.201	0.5894	0.6324	7.2827	5.513	0.0179	0.0124	30.8950
3.450	6.778	0.6416	0.6308	1.6811	9.872	0.0334	0.0296	11.2265
8.666	6.868	0.2595	-	-	10.210	0.0388	-	-
19.055	7.043	0.1210	-	-	10.818	0.0413	-	-

Table A-17 Adsorption of *m*-xylene and toluene on the *KY* zeolite at 65°C.

equilibrium concentration	%loading of *m*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.220	1.649	0.4311	0.3729	13.5028	1.938	0.0063	0.0074	18.4928
2.007	2.080	0.3287	0.3940	19.8756	3.327	0.0108	0.0086	19.6909
3.767	5.449	0.4687	0.4388	6.3728	8.141	0.0274	0.0277	1.1927
8.854	5.853	0.2146	-	-	8.462	0.0301	-	-
19.209	5.912	0.1000	-	-	8.511	0.0342	-	-

Table A-18 Adsorption of *m*-xylene and toluene on the *KY* zeolite at 90°C.

equilibrium concentration	%loading of *m*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.205	0.815	0.2149	0.1774	17.4615	1.417	0.0046	0.0049	7.3082
2.205	1.260	0.1805	0.2305	27.6807	2.364	0.0076	0.0070	8.2511
4.003	4.445	0.3577	0.3212	10.2192	6.921	0.0232	0.0234	0.9372
9.065	4.807	0.1710	-	-	6.961	0.0247	-	-
19.332	4.961	0.0828	-	-	6.973	0.0279	-	-

Table A-19 Adsorption of ethylbenzene and toluene on the *KY* zeolite at 40°C.

equilibrium concentration	%loading of ethylbenzene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.716	2.165	0.9590	0.9759	1.7610	3.180	0.0102	0.0099	2.2418
1.435	4.376	0.9793	0.9542	2.5696	5.692	0.0185	0.0192	3.3132
3.057	8.354	0.8997	0.9070	0.8085	11.008	0.0388	0.0384	1.0765
8.259	8.693	0.3469	-	-	11.433	0.0419	-	-
18.843	8.285	0.1445	-	-	11.659	0.0446	-	-

Table A-20 Adsorption of ethylbenzene and toluene on the *KY* zeolite at 65°C.

equilibrium concentration	%loading of ethylbenzene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.981	1.100	0.3536	0.3930	11.1360	1.847	0.0059	0.0056	4.1619
1.723	3.213	0.5945	0.4974	16.3352	4.108	0.0133	0.0141	6.0908
3.370	7.069	0.6853	0.7209	5.1993	9.606	0.0331	0.0324	1.9352
8.595	7.095	0.2694	-	-	9.635	0.0343	-	-
19.126	6.623	0.1129	-	-	9.786	0.0388	-	-

Table A-21 Adsorption of ethylbenzene and toluene on the *KY* zeolite at 90°C.

equilibrium concentration	%loading of ethylbenzene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.127	0.506	0.1412	0.1587	12.4034	0.939	0.0030	0.0024	18.0452
2.057	1.846	0.2839	0.2876	1.3067	2.297	0.0074	0.0093	25.1147
3.656	5.886	0.5226	0.4980	4.7063	8.302	0.0287	0.0267	7.0770
8.827	5.988	0.2201	-	-	8.320	0.0296	-	-
19.247	5.727	0.0965	-	-	8.530	0.0333	-	-

Table A-22 Adsorption of *o*-xylene and toluene on the *KY* zeolite at 40°C.

equilibrium concentration	%loading of *o*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
0.806	1.816	0.7142	0.6685	6.3974	3.333	0.0106	0.0104	2.3173
1.779	3.034	0.5453	0.5976	9.5879	5.537	0.0180	0.0186	3.4123
3.787	5.465	0.4703	0.4552	3.1905	10.349	0.0364	0.0360	1.1001
8.924	5.772	0.2107	-	-	10.648	0.0381	-	-
19.304	5.936	0.1000	-	-	10.755	0.0417	-	-

Table A-23 Adsorption of *o*-xylene and toluene on the *KY* zeolite at 65°C.

equilibrium concentration	%loading of *o*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.005	1.012	0.3178	0.3211	1.0628	2.280	0.0073	0.0072	0.4527
2.009	2.097	0.3321	0.3268	1.5917	4.630	0.0150	0.0151	0.6796
4.076	4.239	0.3364	0.3382	0.5289	9.043	0.0308	0.0307	0.2325
9.127	4.765	0.1690	-	-	9.128	0.0326	-	-
19.563	4.377	0.0722	-	-	9.154	0.0363	-	-

Table A-24 Adsorption of *o*-xylene and toluene on the *KY* zeolite at 90°C.

equilibrium concentration	%loading of *o*-xylene	The distribution coefficient		%error	%loading of toluene	The distribution coefficient		%error
		experiment	model			experiment	model	
1.103	0.607	0.1730	0.1628	5.8696	1.296	0.0041	0.0039	5.9707
2.198	1.303	0.1875	0.2047	9.2078	3.050	0.0099	0.0107	8.6836
4.186	3.743	0.2880	0.2784	3.3382	7.717	0.0265	0.0258	2.7195
9.289	3.938	0.1364	-	-	7.839	0.0278	-	-
19.597	3.892	0.0638	-	-	7.881	0.0308	-	-

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