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APPENDICES

APPENDIX A Temperature Profiles

Table A1 Temperature profiles of pyrolysis without a catalyst

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	31.6	27.3	32	415.6	505.6	62	384.1	499.4	92	360.4	500
4	51.5	46.2	34	418.4	500.8	64	389.8	499.6	94	360.4	500.8
6	78.2	74.2	36	419	505.4	66	381.2	500.1	96	360.6	500.6
8	113.7	116.9	38	417.6	501.4	68	379.3	499.9	98	362.6	500.1
10	155	167	40	413.3	492.5	70	378.1	500.4	100	358.3	499.1
12	203	228	42	406.1	501.9	72	379.8	500.4	102	356.8	501.6
14	257	294	44	405.6	506.3	74	375.6	501.1	104	357.3	500.3
16	314.3	354.6	46	401.3	501.9	76	374.5	500	106	356.9	499.8
18	350.1	425.6	48	399.1	495.5	78	373	500.2	108	353.2	500
20	372.4	472.5	50	400.3	492.5	80	369.8	500.3	110	352.6	500
22	396	499.7	52	392.9	496.3	82	367.9	500	112	354.7	500.4
24	399.6	500.2	54	394.5	499.7	84	367.6	500.1	114	354.1	500.3
26	401.8	499.9	56	394.4	500.6	86	368.6	498.2	116	354.4	502.7
28	404.7	500.4	58	391.7	500.1	88	365.2	499.6	118		
30	407.7	489.7	60	389.1	500.2	90	366.8	499.5	120		

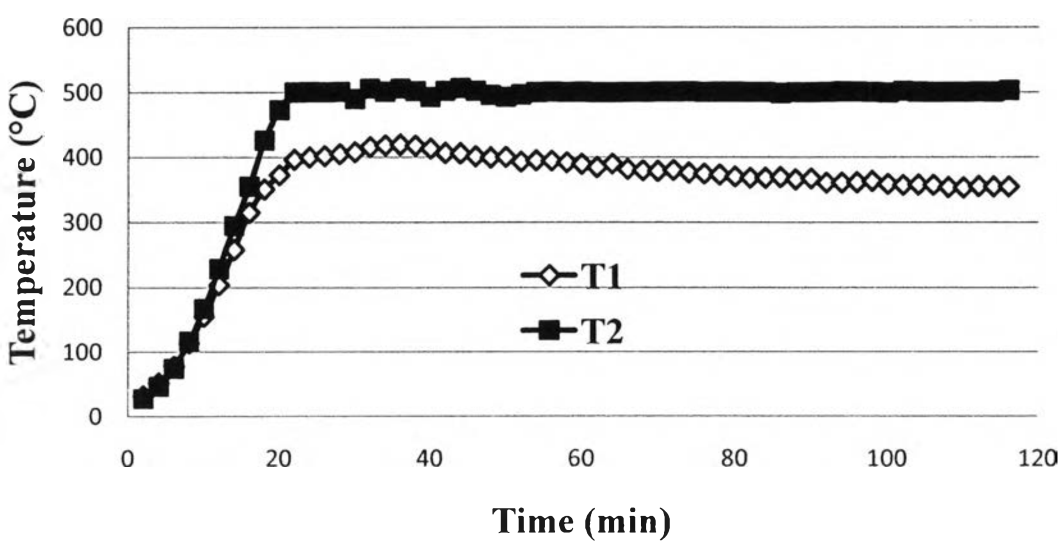


Table A2 Temperature profiles of pyrolysis with Y-zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	26.9	31.1	**32**	306.2	505.3	**62**	348.3	493.2	**92**	325.5	500.2
4	35.8	52.8	**34**	322.6	502.8	**64**	346.3	497.5	**94**	324.2	500.2
6	47.8	81.3	**36**	329.2	496.4	**66**	344.9	499.2	**96**	322.9	501.6
8	61	114.8	**38**	335.5	487.7	**68**	343.3	501.1	**98**	321.4	499.7
10	84.8	173.7	**40**	342.7	476.3	**70**	342.4	498.2	**100**	320	499.3
12	112.8	237.8	**42**	345.1	469.4	**72**	340.8	500.5	**102**	319	499.8
14	147.9	300.9	**44**	353.4	460.8	**74**	339.1	500.5	**104**	317.3	500.1
16	188.7	359.9	**46**	352.5	453.7	**76**	337.6	500.3	**106**	316.4	500.1
18	189.1	425.8	**48**	352.2	449.9	**78**	335.3	500.3	**108**	315.4	500.2
20	271.8	462.8	**50**	352	461.2	**80**	334	499.1	**110**	314.2	499.3
22	320.4	518	**52**	352.5	492.9	**82**	332.6	501	**112**	314	499
24			**54**	352.7	508	**84**	330.8	500.3	**114**	312.8	499.4
26	311.7	518	**56**	352.7	501.1	**86**	329.2	500.2	**116**	311.5	500.4
28	315.6	506.4	**58**	351.2	505.4	**88**	328	500.9	**118**	309.6	501.4
30	336.4	501.8	**60**	350.5	498.5	**90**	326.8	500.5	**120**	308.3	499.7

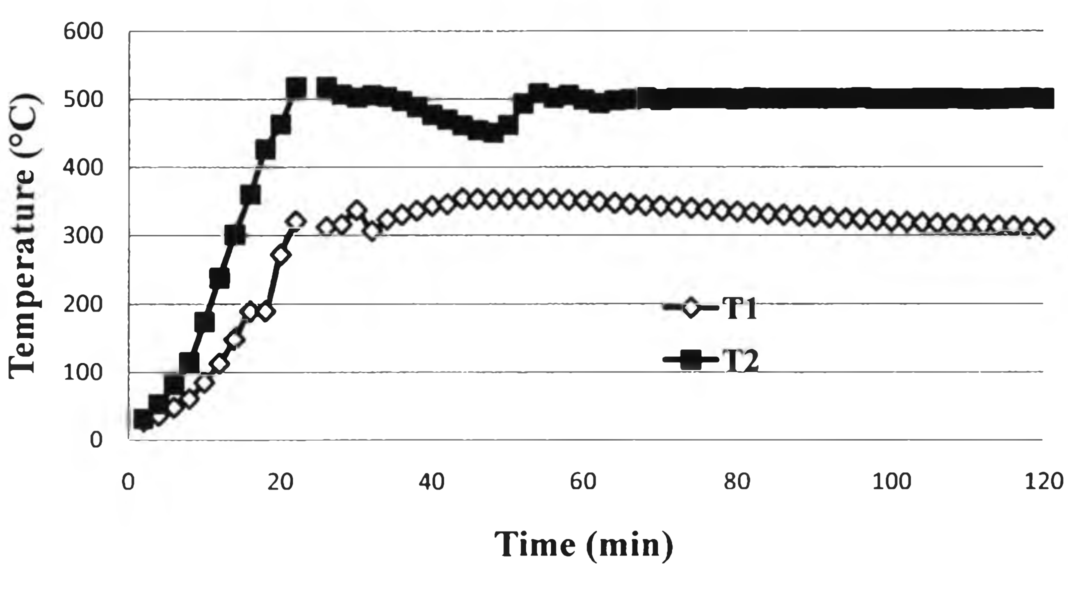


Table A3 Temperature profiles of pyrolysis with 1%Ag/Y zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	28	30.1	**32**	303.5	503.2	**62**	329	496.5	**92**	322.5	500.2
4	33.3	44.7	**34**	309.9	491.2	**64**	328.6	500.3	**94**	325.7	500.2
6	45.3	73.2	**36**	312.8	482.9	**66**	328.3	499.8	**96**	325.4	500.8
8	62.2	109.8	**38**	315.7	473	**68**	327.8	499.9	**98**	325.8	498.2
10	86.4	165.7	**40**	318.3	465.2	**70**	327.6	499.7	**100**	324.6	500
12	109.5	220.7	**42**	321.5	455.2	**72**	327	500.4	**102**	323.9	500.8
14	137.6	279.7	**44**	324.1	445.6	**74**	326.4	499.1	**104**	322.5	500.2
16	179.7	347.8	**46**	325.2	440.7	**76**	326	500.4	**106**	321.4	499.3
18	221.4	415.7	**48**	326.2	438	**78**	325.8	499	**108**	320.3	501.3
20	305.7	455.6	**50**	327.5	462.9	**80**	325	499.3	**110**	318.9	500.2
22	326.1	508.8	**52**	327.8	498.5	**82**	325	499	**112**	318.1	498.5
24			**54**	327.7	506.9	**84**	324.6	500.7	**114**	317.3	501
26	315.1	507.6	**56**	328.7	497.7	**86**	324.7	499.4	**116**	316.5	499.3
28			**58**	328.8	504	**88**	323.3	499.9	**118**	315.7	499.2
30	302.9	507	**60**	329.9	494.9	**90**	322.7	499.9	**120**	314.3	501.3

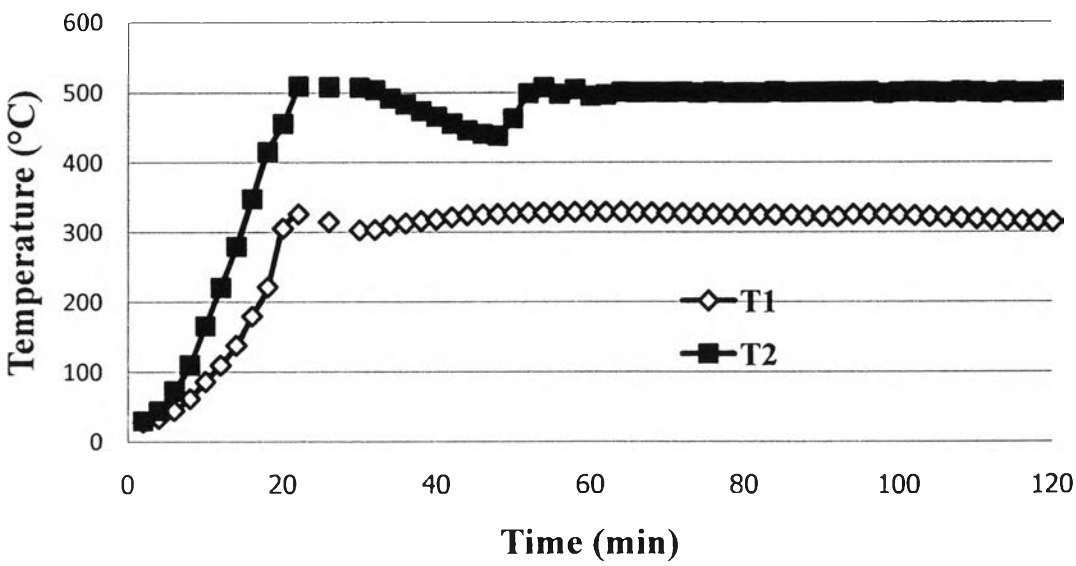


Table A4 Temperature profiles of pyrolysis with 2%Ag/Y zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	25.6	29.5	**32**	347.8	507.1	**62**	338.8	501.3	**92**	318	500.7
4	29.9	44.5	**34**	364.8	500.8	**64**	337.1	492.4	**94**	317.1	500.5
6	51.5	102	**36**	369.8	505.4	**66**	335.1	495.6	**96**	315.1	500.4
8	61.7	127.2	**38**	377.8	498.8	**68**	334.3	500.5	**98**	314.6	499.3
10	77.2	164.4	**40**	370.8	498.7	**70**	332.8	499.8	**100**	313.2	500.1
12	101.7	226.1	**42**	359.2	503.4	**72**	331	499.7	**102**	310.6	500.6
14	115.7	281.1	**44**	356.2	502.3	**74**	329.7	499.7	**104**	310.1	500.3
16	138.5	346	**46**	363.3	503.8	**76**	328.7	500.1	**106**	309.2	501
18	156.8	420.3	**48**	369.1	492.3	**78**	327	498.9	**108**	307.9	499.3
20	224.8	446.6	**50**	361.5	484.5	**80**	326	500.5	**110**	307	500.6
22	305.7	493	**52**	352.4	479.8	**82**	324.2	499.7	**112**	305.6	500.1
24	315.6	518.8	**54**	345.9	493	**84**	322.8	498.8	**114**	304.7	499.4
26	280.4	515.3	**56**	344.5	501.1	**86**	321.8	501.8	**116**	303.7	500
28	302.5	512.6	**58**	342.7	501	**88**	320.3	499.8	**118**	302.3	500.3
30	323.4	509.6	**60**	339.8	507	**90**	319.3	500.3	**120**	301.5	499.9

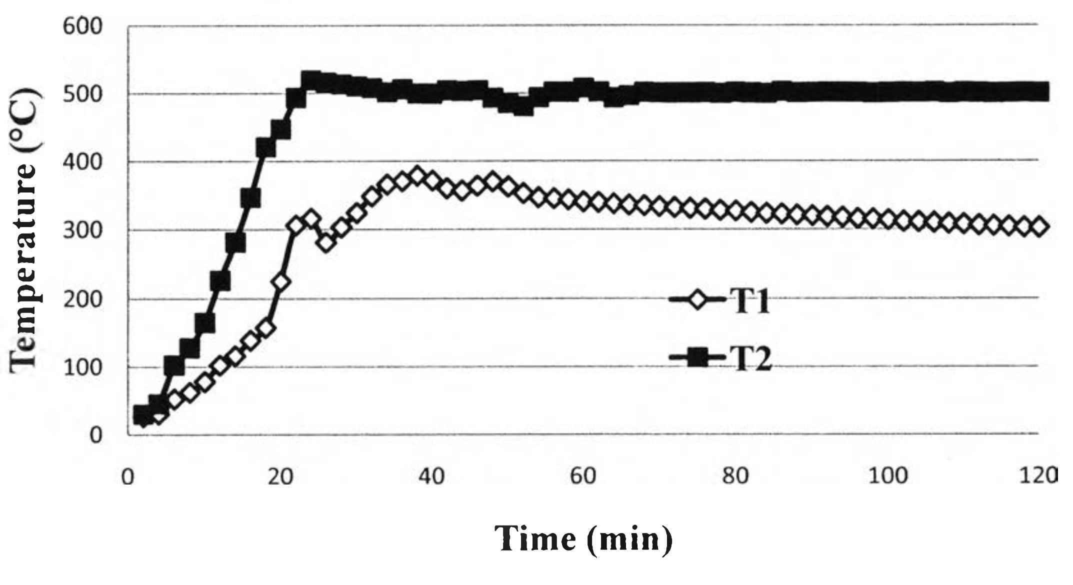


Table A5 Temperature profiles of pyrolysis with 3%Ag/Y zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	30	38.1	**32**	356.2	504.6	**62**			**92**	313.3	508.5
4	37.2	54.5	**34**	369.2	499.8	**64**	329.5	510.7	**94**	311.9	500.8
6	58.3	98.9	**36**	370	505.2	**66**	328.5	500.6	**96**	310.5	505.5
8	70.4	126.8	**38**	371.8	496.5	**68**	327.5	507.8	**98**	309.4	505.6
10	96.5	183.1	**40**	371.8	486.1	**70**	327	501.8	**100**	308.4	497.7
12	123.4	237.3	**42**	371.5	472.8	**72**	325.7	501	**102**	307	501.9
14	167.8	312.8	**44**	360.5	457.7	**74**	324.9	502.3	**104**	305.8	493.5
16	206.8	364.8	**46**	358.9	450.2	**76**	323.1	492.8	**106**	304.9	494.5
18	267.9	438.2	**48**	350.4	445.1	**78**	320.9	499.6	**108**	303.9	500.8
20	306.7	462.1	**50**	341.8	447.2	**80**			**110**	302.5	501.1
22	242.8	511.2	**52**	337.8	456.4	**82**	319.2	500.6	**112**	301.1	498.1
24	265.5	511.4	**54**	334.2	468.8	**84**	318.3	500.6	**114**	300.4	499.6
26	287	509.1	**56**	332.6	484.7	**86**	316.8	498.8	**116**	299.7	499.9
28	308.1	506.5	**58**	331.5	495.7	**88**	315.4	500.6	**118**	298.7	499.8
30	334.4	505.8	**60**	330.5	505.7	**90**	314.3	500	**120**	298	499.2

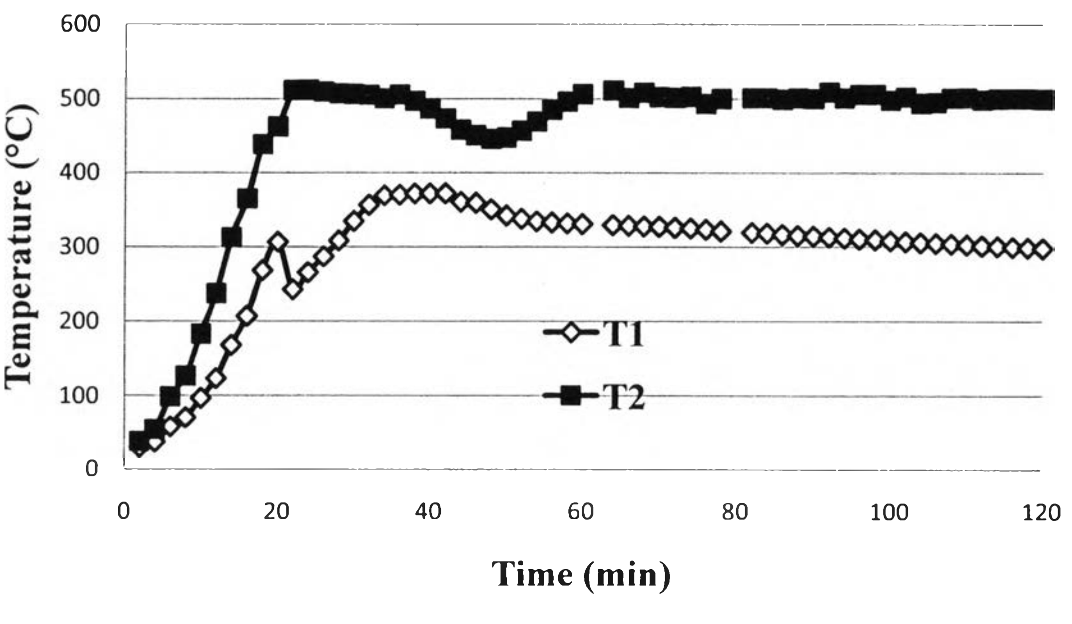


Table A6 Temperature profiles of pyrolysis with BETA zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	28.4	29.4	**32**	377.4	507.7	**62**	376	501.1	**92**	354.5	500.9
4	32.5	44.3	**34**	379.5	501.5	**64**	375.5	507.1	**94**	352.6	506.5
6	39.2	68.5	**36**	382.4	491.5	**66**	373	502.5	**96**	351.4	501.6
8	57.7	117.2	**38**	383.3	496.4	**68**	372.6	494.3	**98**	349.4	495.6
10	72.9	154.6	**40**	3847	507.7	**70**	370	507.5	**100**	348.3	509.7
12	95.7	207.7	**42**	385.9	498.8	**72**	369.4	502.6	**102**	347.2	499.6
14	122.6	273.4	**44**	385.8	507.8	**74**	367.3	505.7	**104**	346.2	505.4
16	154.3	341.4	**46**	385.1	501.5	**76**	366.4	502.5	**106**	345	498
18	194.5	417.6	**48**	384.1	492.1	**78**	363.8	493.3	**108**	344	506
20	259.3	451.8	**50**	383.2	501.3	**80**	362.9	508.7	**110**	343.5	498.9
22	327	508.9	**52**	382.3	502.3	**82**	361.7	501	**112**	342.1	506.8
24	358	512.7	**54**	381.5	497.5	**84**	359.2	507	**114**	341.9	499.8
26	368.5	507.4	**56**	380.1	505	**86**	358.6	500	**116**	340.6	508.9
28	370.1	505	**58**	379.3	499	**88**	356.7	493.9	**118**	339.7	501.6
30	373.1	499	**60**	378.2	506.8	**90**	355	509.6	**120**	338.7	506.5

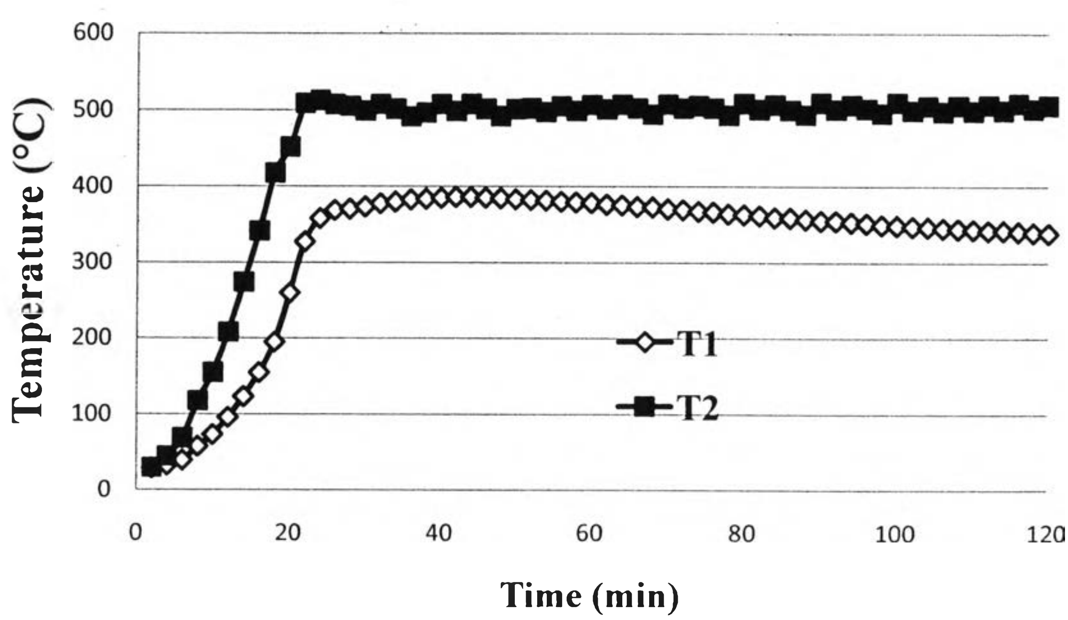


Table A7 Temperature profiles of pyrolysis with HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	27.9	29.9	**32**	383	502.9	**62**	382.5	498	**92**	361.3	501.6
4	30.1	45.9	**34**	385.4	493.8	**64**	381.6	505.5	**94**	360.2	506.5
6	38.3	71.4	**36**	387.5	505.9	**66**	380.4	501.6	**96**	358.3	502.8
8	51.5	109.3	**38**	389.6	504.7	**68**	378.5	505.6	**98**	356.4	495
10	71.6	158.4	**40**	389.3	498.6	**70**	377	496.4	**100**	355.5	507
12	100.4	223.5	**42**	390.1	505.5	**72**	376	507.3	**102**	354.1	501.4
14	123.6	280.2	**44**	390.2	496.5	**74**	374.6	500.5	**104**	353	507.5
16	150.7	338.2	**46**	390.1	507.6	**76**	372.7	505.8	**106**	352.9	502.3
18	188.5	406.4	**48**	390.3	502	**78**	371.3	500.9	**108**	350.6	495.9
20	242.4	444.4	**50**	389.7	502	**80**	370.2	507	**110**	349.7	506.7
22	315.1	497.4	**52**	388.5	501	**82**	368.1	501.7	**112**	348.4	506
24	352.1	515.5	**54**	387.6	494.6	**84**	367.1	507.6	**114**	347.9	504
26	367.3	507.2	**56**	386	507.7	**86**	365.3	500.8	**116**	346.6	502.7
28	373.5	497.6	**58**	385.7	500.5	**88**	363.5	494.7	**118**	345	496.6
30	378.8	508.4	**60**	384.6	507.4	**90**	362.6	508.2	**120**	344	508.9

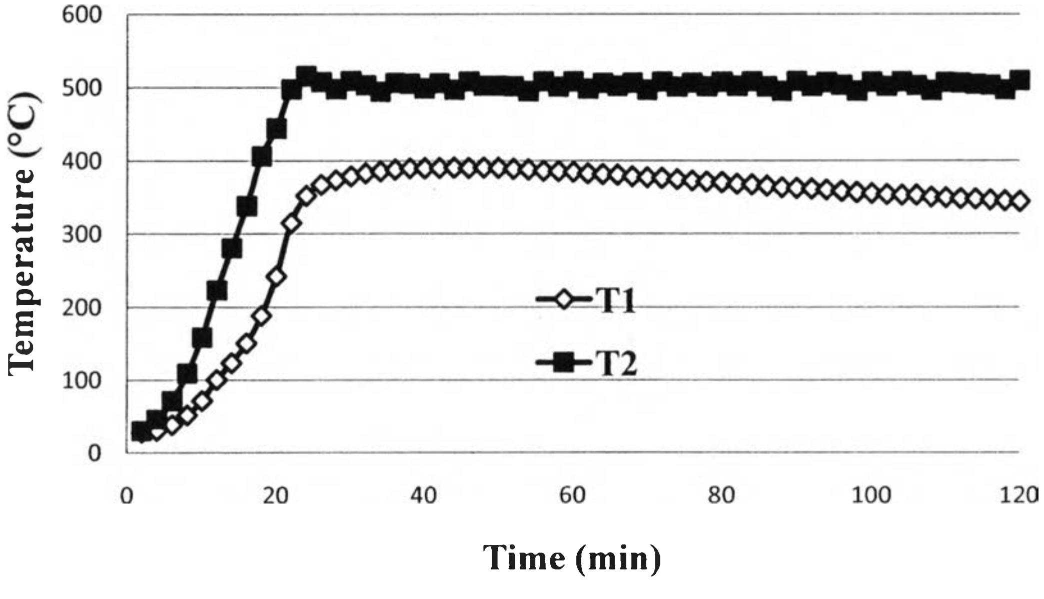


Table A8 Temperature profiles of pyrolysis with KL zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	28	27.5	**32**	366.9	498.1	**62**	387.6	506.5	**92**	362.4	498.7
4	33	31.7	**34**	371.6	506.3	**64**	386.6	498.4	**94**	361.7	506.6
6	49.7	45.4	**36**	376.5	502.1	**66**	384.9	504.5	**96**	358.8	497.7
8	70.8	72.9	**38**	379.8	498.4	**68**	383.4	499.5	**98**	357	508.4
10	88.3	98	**40**	383.1	487.2	**70**	381.3	494.3	**100**	356	501.3
12	98	120.6	**42**	387.5	502.1	**72**	378.4	501.6	**102**	354.7	506.5
14	120.4	189.5	**44**	389.9	506.1	**74**	376.5	505.5	**104**	353.6	500.4
16	145.5	241.7	**46**	390.4	498.1	**76**	374.6	497.8	**106**	351.5	493.6
18	166	284.4	**48**	391.7	504.7	**78**	372.3	493.6	**108**	350.7	508.8
20	195	320.2	**50**	391.2	496.4	**80**	371.2	507.9	**110**	348.8	500.9
22	211	386.3	**52**	391.5	507	**82**	370.4	501.3	**112**	347.5	507.6
24	245.7	440.2	**54**	391.1	502	**84**	368.1	505	**114**	346.3	501.5
26	293.1	486.5	**56**	390.9	502.6	**86**	366.1	497	**116**	345.2	495.4
28	336.4	516.2	**58**	389.6	501.5	**88**	365	501.9	**118**	344.1	505.3
30	351.5	505.5	**60**	388.4	495.9	**90**	363	506.7	**120**	343.2	499.2

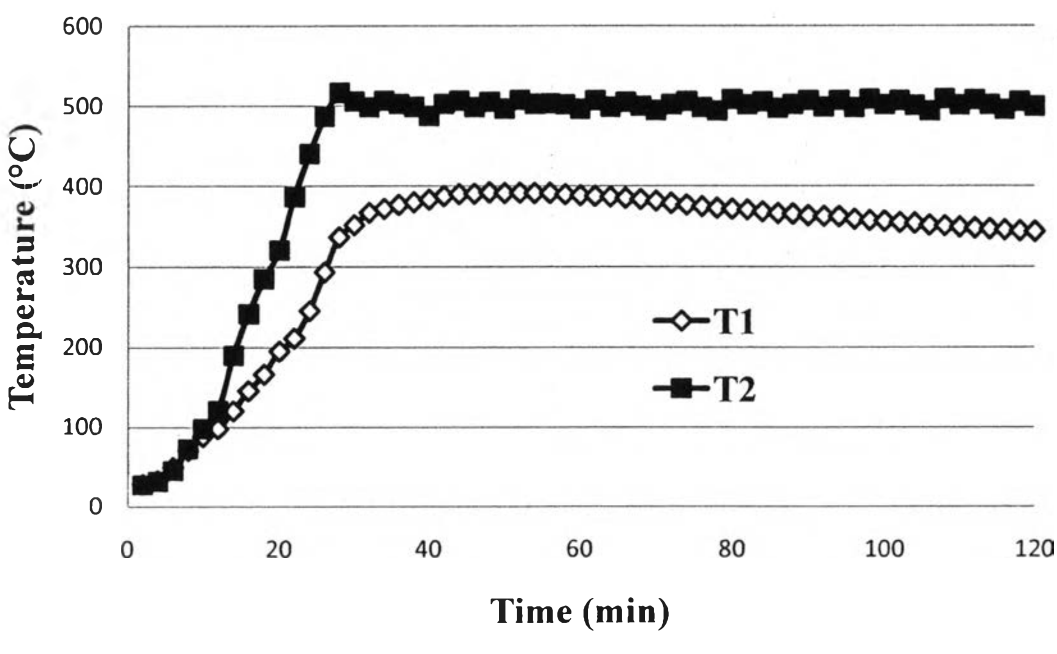


Table A9 Temperature profiles of pyrolysis with 1%Ag/BETA zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	28.9	31.7	**32**	375.1	501.6	**62**	376.5	502.2	**92**	351.7	503.4
4	32.7	45.8	**34**	378.2	496.7	**64**	374.6	492.4	**94**	349.6	495.9
6	41.6	72.5	**36**	380.1	506.6	**66**	372.5	508.1	**96**	348.9	506.8
8	55.9	112.3	**38**	382.1	504.5	**68**	370.8	502.4	**98**	347.5	504.3
10	75.5	167.5	**40**	383.4	498.8	**70**	369.9	501.3	**100**	346.4	500.6
12	102.4	236.7	**42**	384.5	502.4	**72**	367.3	502.6	**102**	344.2	502.7
14	124.7	282.1	**44**	384.2	497.8	**74**	365.4	495.6	**104**	343.1	495.3
16	161.6	350.4	**46**	384.8	504.8	**76**	363.1	509.8	**106**	342.4	507.4
18	211.7	434.6	**48**	383.4	504.6	**78**	362.1	500.4	**108**	340.2	502.2
20	270.2	454.1	**50**	382.6	499.1	**80**	360.1	505.9	**110**	339.4	508.6
22	334.4	509.5	**52**	382.4	503.2	**82**	359.4	501.5	**112**	338.5	504.2
24	351.1	506.7	**54**	381.1	496.5	**84**	357.5	494.1	**114**	337.1	495.9
26	358.9	501.4	**56**	380.4	506.1	**86**	355.3	506.3	**116**	336.5	509.8
28	366.5	497.2	**58**	377.5	497.7	**88**	354.2	501.1	**118**	335.3	502.9
30	371.3	509.1	**60**	377.3	505.4	**90**	352.4	509.1	**120**	334.6	505.3

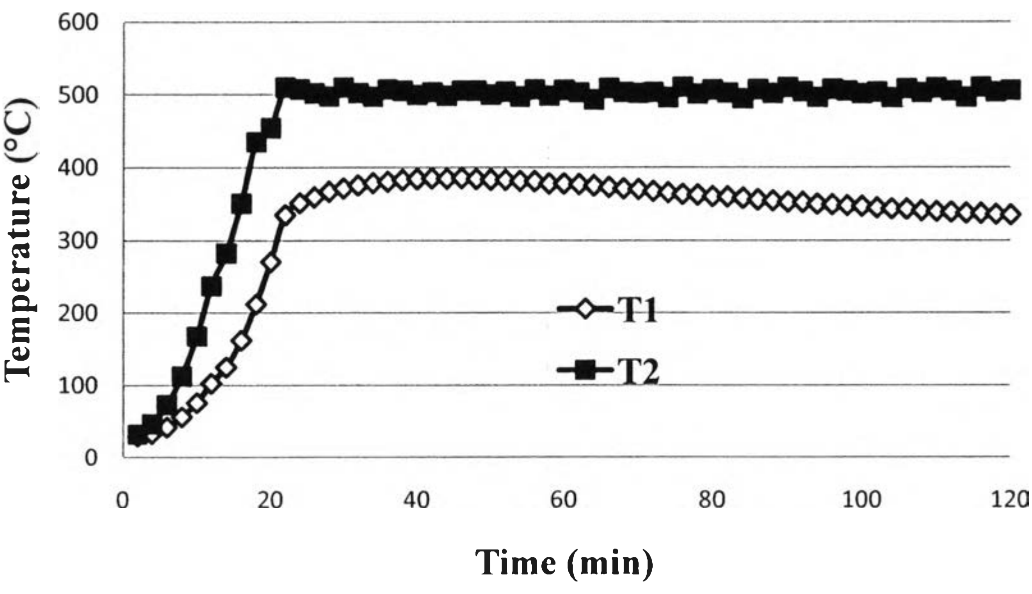


Table A10 Temperature profiles of pyrolysis with 1%Ag/KL zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	29.1	31.8	**32**	345.5	507.3	**62**	363.4	508.6	**92**	347.6	500.5
4	34.4	38.8	**34**	347.2	498.6	**64**	363.1	506.7	**94**	346.4	501.3
6	35.3	54.8	**36**	350.2	507.8	**66**	361.8	504.6	**96**	345.8	500.2
8	41.7	80.8	**38**	353.1	502.7	**68**	361.4	503.6	**98**	348	499.7
10	45.5	113.3	**40**	356.3	494.4	**70**	359.2	492.7	**100**		
12	70.5	163.4	**42**	359.5	509.5	**72**	357.4	497.8	**102**	343.6	499.3
14	134.7	225.4	**44**	361.9	504.4	**74**	357.9	501	**104**		
16	154.4	257.3	**46**			**76**	356.4	499.5	**106**	342.1	499.7
18	158.9	265.3	**48**	366.1	502.1	**78**	355.4	501	**108**	340.8	500.5
20	172.7	291.1	**50**	366.1	493.5	**80**	354.6	499.5	**110**	340.1	500
22	196.9	341.4	**52**	365.9	493.2	**82**	353.4	499	**112**	339.1	499.8
24	274.6	423.6	**54**	366.4	507	**84**	351.1	500	**114**	338	501.3
26	306.4	449.7	**56**	366.6	491	**86**	351.3	499.6	**116**	337.5	499.4
28	336.1	510.3	**58**	364.5	486.8	**88**	350.6	499.8	**118**	337.1	501.6
30	343.4	515.5	**60**	363.5	492.5	**90**	348.9	499.5	**120**	336.8	501.2

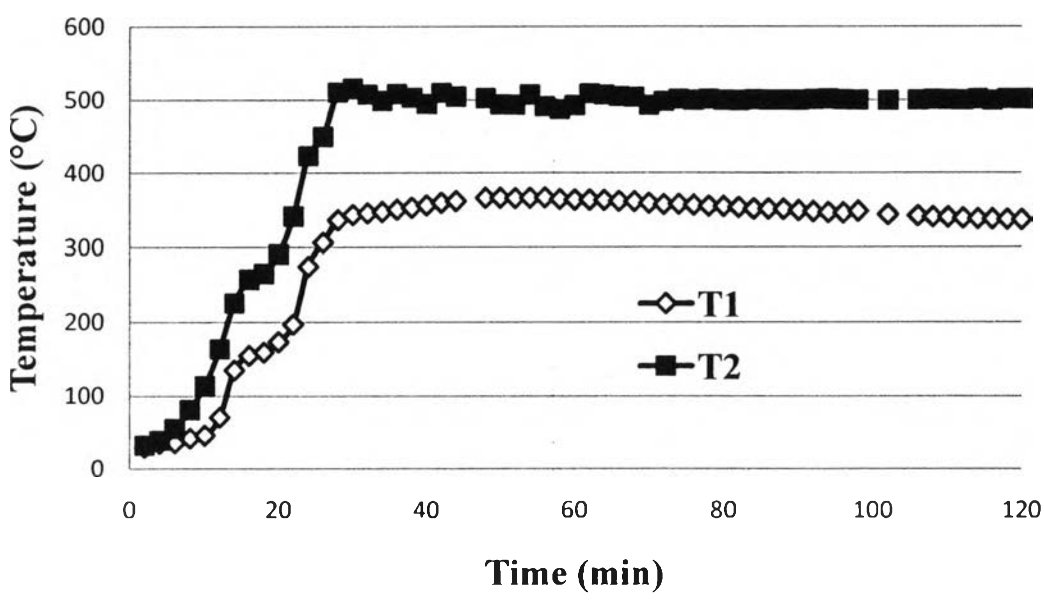


Table A11 Temperature profiles of pyrolysis with 1%Ag/HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	28.9	25.4	**32**	337.6	514.7	**62**	357.2	502.3	**92**	360.7	495.2
4	32.1	26.9	**34**	341.3	509.9	**64**	358.9	497.8	**94**	360.3	497.8
6	37.6	30.9	**36**	340	507.6	**66**	360.4	504.8	**96**	359.4	507.8
8	42.3	37.2	**38**	344.8	502.7	**68**	361.7	505.8	**98**	358.7	505.1
10	49.5	45.2	**40**			**70**	362.7	502.4	**100**	358.6	501.2
12	56.3	54.9	**42**	348.6	498.8	**72**	363.9	497.2	**102**	357.6	497.7
14	67.1	67.9	**44**	350.3	506	**74**	363	497.2	**104**	356	504.3
16	74.1	83.4	**46**	349.2	507.4	**76**	362.7	506.2	**106**	356.3	506.7
18	89.3	103.7	**48**	348.2	505.5	**78**	363	507.3	**108**	354.7	504.4
20	101.4	124.5	**50**			**80**	362.4	500.4	**110**	353.6	504.4
22	119.6	159.6	**52**	352.5	495.9	**82**	363.1	497.8	**112**	353.9	500.6
24	134.2	177.4	**54**	353.3	494.4	**84**	362.8	500.8	**114**	352.4	501.9
26	207.4	299.7	**56**	356.6	500.4	**86**	361.9	507.9	**116**	352	496
28	291.7	422.5	**58**	357.3	507.4	**88**	361.5	505.2	**118**		
30	338.9	499.8	**60**	356.4	506	**90**	361	500.8	**120**		

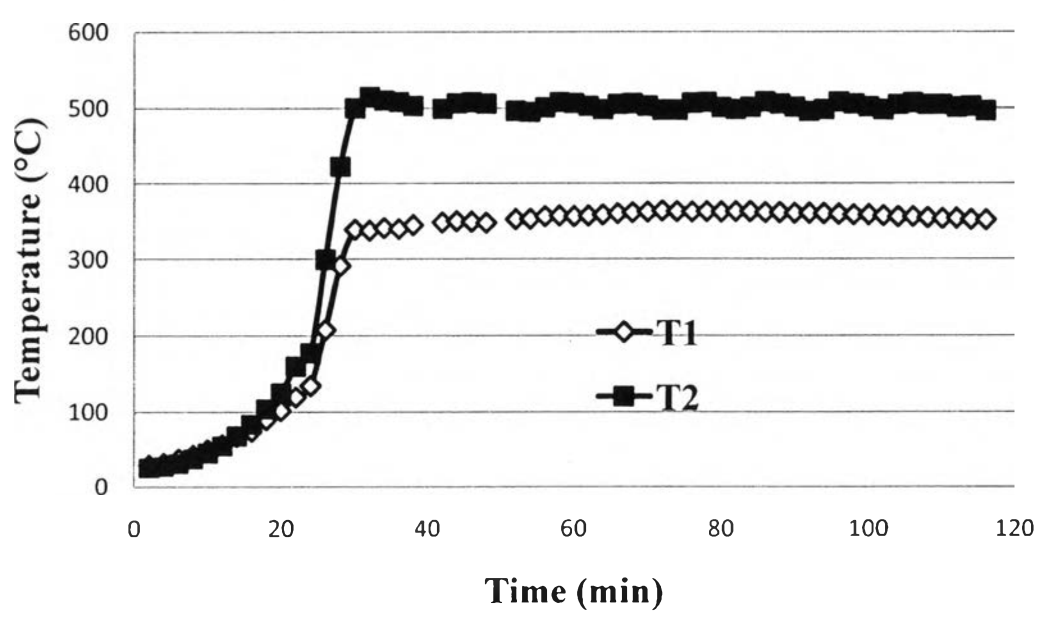


Table A12 Temperature profiles of pyrolysis with $Ag_{0.8}Pd_{0.2}$/HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	27.9	27.6	**32**	378.3	503.9	**62**	353.8	498.3	**92**	322.9	500.6
4	35.3	48.5	**34**	379.5	495.2	**64**	350.8	500.7	**94**	322.3	500.7
6	44.3	66.6	**36**	380.5	485.5	**66**	347.1	499.9	**96**		
8	71.6	108.7	**38**	380.7	506.9	**68**	343.3	500.3	**98**	320.1	499.4
10	117.2	161.8	**40**	380.5	503.9	**70**	339.9	499.7	**100**	318.5	499.5
12	150.8	209.9	**42**	380.0	496.8	**72**	337.2	498.1	**102**		
14	173.4	265.7	**44**	378.6	503.4	**74**	335.2	500.8	**104**	316.1	499.1
16	188.8	304.7	**46**	375.6	487.6	**76**	333.9	500.9	**106**		
18	233.9	406.1	**48**	371.6	475.7	**78**	332.2	499.4	**108**	314.7	499.4
20	278.8	436.6	**50**	369.5	477.7	**80**	330.7	499	**110**	313.9	499
22	318.8	440.4	**52**	366.3	506.9	**82**	329.1	500	**112**	313.3	500.3
24	350.1	505.1	**54**	362.2	500.5	**84**	328.1	500.1	**114**	312.2	499.2
26	363.1	500.3	**56**	360.4	502	**86**	327	501.1	**116**	311.9	500.7
28	371.8	491.8	**58**	357.7	493.3	**88**	325	501.2	**118**	310.7	499.8
30	375.9	509.6	**60**	356.0	495.5	**90**	324	499.6	**120**	310.3	499.8

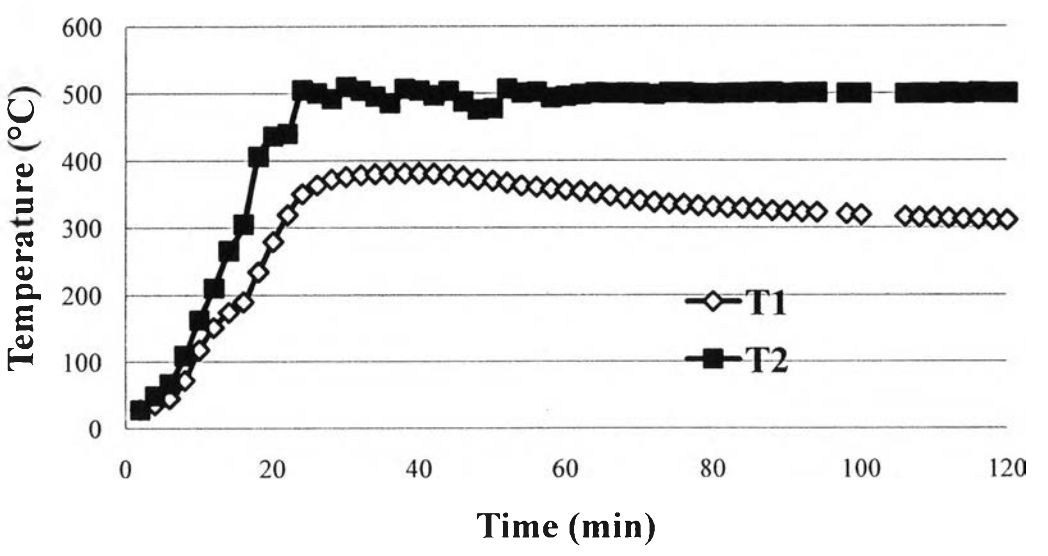


Table A13 Temperature profiles of pyrolysis with $Ag_{0.6}Pd_{0.4}$/HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	34.8	42.9	**32**	355.7	502.4	**62**			**92**	325.9	499.9
4	46.6	62.1	**34**	360.4	498.6	**64**	347.5	500.3	**94**	324.7	500.5
6	77.2	117.7	**36**	363.1	498.3	**66**	344.2	499.5	**96**	323.5	499.8
8	93.9	148.3	**38**	363	502.1	**68**	342.8	500.8	**98**		
10	121.8	201.8	**40**	361.7	498.8	**70**	340.9	500.6	**100**		
12	160.9	270.1	**42**	361.6	501.9	**72**			**102**	319.9	500.1
14	210.5	344.7	**44**	359.9	498.8	**74**	338.9	500.4	**104**		
16	286.5	428.6	**46**	359.2	500.9	**76**	337.6	500.1	**106**	318.3	499.3
18	322.6	456.8	**48**	357.4	499.3	**78**	334.7	499.8	**108**		
20	328.2	499.1	**50**	356.7	500.6	**80**	334.2	498.9	**110**	315.6	498.4
22			**52**	355.5	500.5	**82**	332.5	500.8	**112**	314.7	501.9
24	328.7	505.4	**54**	353.6	500.7	**84**			**114**	313.9	499.1
26	338.8	493.4	**56**			**86**	326.3	500.4	**116**	313.3	499
28	348.5	495.8	**58**	351.5	499.6	**88**			**118**	312.3	501
30	353.3	503.9	**60**	349.4	499.8	**90**			**120**	311.3	499

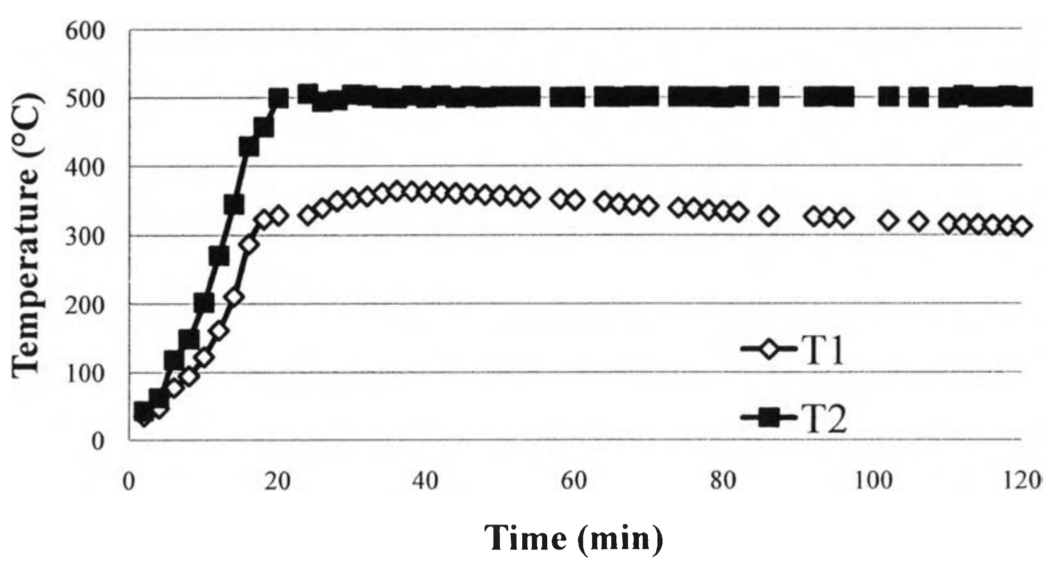


Table A14 Temperature profiles of pyrolysis with $Ag_{0.4}Pd_{0.6}$/HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	30.3	31.8	**32**	342.8	498.2	**62**	352.1	499.8	**92**	349.8	499.8
4	36.6	46.7	**34**	341.9	527.7	**64**	356.7	500.8	**94**	349.6	500
6	50.7	73.8	**36**	342.6	519.2	**66**	357	499.6	**96**	349	500.1
8	74.2	113.3	**38**	346.7	524.3	**68**	356.1	500.1	**98**	349.5	499.5
10	106	167.9	**40**	358.9	515.4	**70**	354.2	499.9	**100**	349.8	500.8
12	135.7	220.8	**42**	361.4	504.5	**72**	351.7	499.4	**102**	350.1	500.3
14	174.4	286.3	**44**	361.7	495.4	**74**	349.3	500.8	**104**	349.9	499.7
16	217	354.4	**46**	360.9	486.8	**76**	347.7	499.7	**106**	349.7	499.9
18	272	407.5	**48**	359.1	505.9	**78**	346.6	499.7	**108**	350.1	499.7
20	300.6	466.5	**50**	358.1	500.5	**80**	347.1	499.7	**110**	349.5	500
22	315.6	503.9	**52**	356.6	505.7	**82**	348.7	500.7	**112**	349.7	499.6
24	318.7	526.3	**54**	354.8	497.1	**84**	348.8	499.8	**114**	349.9	500.8
26	321.7	510.5	**56**	353.3	494.4	**86**	349.6	499.6	**116**	349.7	500.1
28	334.7	499.4	**58**	351.8	499.2	**88**	350.1	500.6	**118**	349.8	499.8
30	340.4	490.1	**60**	349.7	500.7	**90**	349.9	500.6	**120**	350	500.4

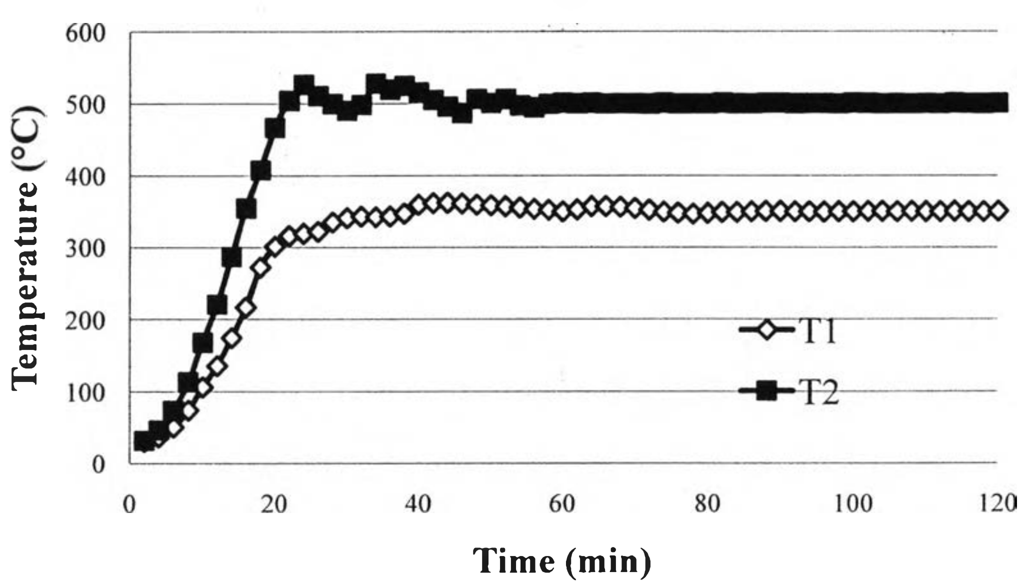


Table A15 Temperature profiles of pyrolysis with $Ag_{0.2}Pd_{0.8}$/HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	34.2	42.6	**32**	364.7	475.3	**62**	361.8	499	**92**	358.4	499.3
4	40.4	58.4	**34**	362.9	466.1	**64**	361.2	502.4	**94**	356.7	499.8
6	55.5	85.7	**36**	361.3	499.7	**66**	360.2	497.5	**96**	354.7	500
8	81.6	125.9	**38**	359.5	504.8	**68**	358.9	501	**98**	352.7	499.7
10	119.7	175.8	**40**	358.7	498.4	**70**	357.7	498.7	**100**	350.8	500.3
12	150.2	273.6	**42**	357.4	502.5	**72**	356.2	500.3	**102**	348.2	499.4
14	178.9	300.1	**44**	356	493.8	**74**	354.1	499.9	**104**	364.4	500.4
16	213.7	379.8	**46**	355	496.8	**76**	351.8	498.8	**106**	344.6	500.5
18	266.4	429.3	**48**	353.8	499.8	**78**	349.7	500.8	**108**	344.6	500.3
20	306	488.2	**50**	352.2	499.1	**80**	348.3	499.2	**110**	345.1	499.7
22	334.7	508.2	**52**	351	500.4	**82**	355.9	501.7	**112**	346	501
24			**54**	349.2	499.9	**84**	360.2	501.1	**114**	347.4	500.4
26			**56**	350	499.7	**86**	361.9	500	**116**	348.4	499.4
28	366.2	475.1	**58**	357.1	499.8	**88**	361.5	500.5	**118**	349.3	499.7
30	366.4	464.9	**60**	361.1	501.5	**90**	360.3	500.4	**120**	350.1	500.9

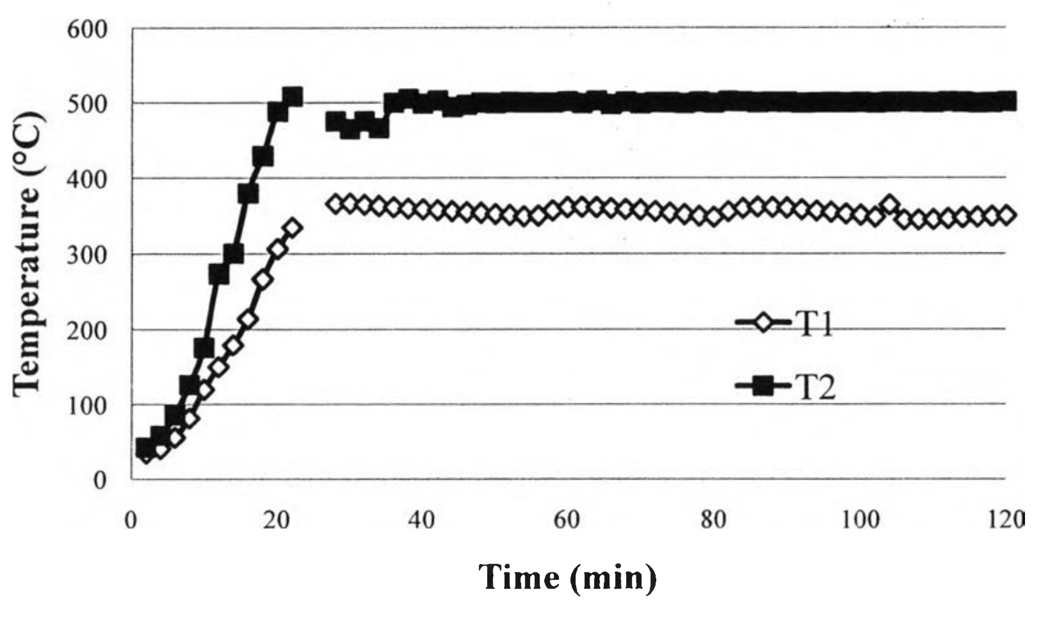


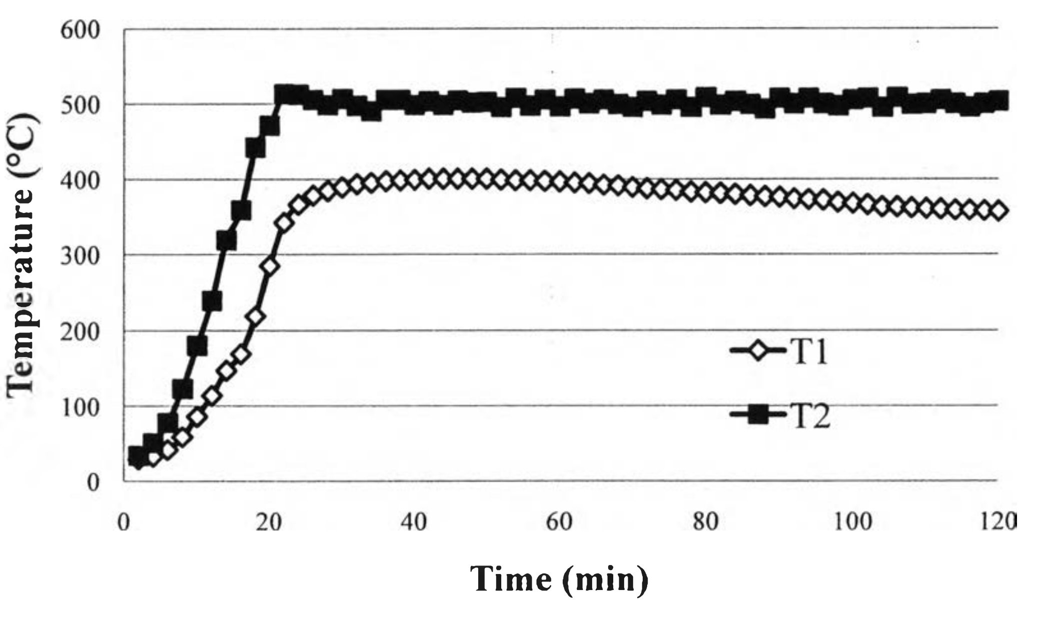
Table A16 Temperature profiles of pyrolysis with 1%Pd/HMOR zeolite

Tire = 30 g, N_2 flow = 25 ml/min

Catalytic temperature (T1) = 350 °C

Pyrolysis temperature (T2) = 500 °C

Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2	Time (min)	T1	T2
2	29	34	**32**	393	497	**62**	395	506	**92**	374	500
4	33	51	**34**	395	490	**64**	394	500	**94**	373	507
6	42	78	**36**	397	505	**66**	392	505	**96**	372	500
8	59	123	**38**	398	505	**68**	391	499	**98**	369	497
10	86	180	**40**	399	498	**70**	389	495	**100**	368	505
12	114	239	**42**	400	503	**72**	387	503	**102**	366	507
14	147	319	**44**	400	498	**74**	386	498	**104**	363	495
16	169	359	**46**	400	504	**76**	385	505	**106**	363	508
18	219	442	**48**	400	501	**78**	383	495	**108**	362	499
20	285	471	**50**	400	502	**80**	382	508	**110**	361	500
22	342	513	**52**	399	495	**82**	381	498	**112**	360	505
24	366	512	**54**	398	507	**84**	380	503	**114**	359	500
26	378	505	**56**	398	497	**86**	378	499	**116**	359	495
28	384	498	**58**	397	505	**88**	377	493	**118**	358	500
30	389	506	**60**	396	496	**90**	376	507	**120**	357	503



APPENDIX B Product Distribution of Pyrolysis

Table B1 Effect of amount of Ag loaded onto Y zeolite on product distribution (%wt)

Products	Non catalyst	Y zeolite	1%Ag/Y	2%Ag/Y	3%Ag/Y
Gas	11.03	22.37	26.07	14.58	24.10
Liquid	42.17	34.13	30.07	43.55	35.63
Solid	46.80	43.51	43.87	41.87	40.27

Table B2 Effect of amount of Ag loaded onto Y zeolite on composition of products

Products distribution (%yield)	Non catalyst	Y-zeolite	1%Ag/Y	2%Ag/Y	3%Ag/Y
Gas products					
Methane	1.99	4.19	4.99	4.32	4.31
Ethane	1.76	3.80	4.49	3.76	3.91
Ethylene	0.88	2.01	2.17	2.16	2.17
Propylene	1.03	2.81	2.93	2.86	3.07
light olefins	1.91	4.82	5.10	5.02	5.23
Cooking gas	3.06	7.24	8.77	7.69	7.84
Mixed-C5	0.30	2.06	2.33	1.85	2.32
C6-C8	2.01	0.25	0.39	0.51	0.49
Total	*11.03*	*22.37*	*26.07*	*23.15*	*24.10*
Petroleum products					
Full range naphtha	16.02	14.33	12.63	13.34	12.12
Kerosene	9.28	10.92	10.22	10.67	8.55
Light gas oil	8.43	5.46	4.21	6.00	7.13
Heavy gas oil	6.75	2.73	1.80	2.34	4.28
Long residue	1.69	0.68	1.20	1.00	3.56
Total	*42.17*	*34.13*	*30.07*	*33.36*	*35.63*
Residual					
Asphaltene	0.049	0.018	0.007	0.002	0.023
Solid	46.80	43.51	43.87	43.50	40.27
Total	*46.85*	*43.52*	*43.87*	*43.50*	*40.29*

Table B3 Effect of different zeolites on product distribution (%wt)

Products	BETA	HMOR	KL	Y
Gas	19.56	16.53	16.59	22.37
Liquid	31.30	34.57	33.27	34.13
Solid	49.14	48.90	50.14	43.51

Table B4 Effect of different zeolites on the composition of products

Products distribution (%yield)	BETA	HMOR	KL	Y
Gas products				
Methane	1.84	2.48	2.85	4.19
Ethane	0.85	0.78	1.18	3.80
Ethylene	1.66	2.31	2.57	2.01
Propylene	1.26	1.07	1.56	2.81
light olefins	2.92	3.39	4.13	4.82
Cooking gas	7.67	6.14	4.81	7.24
Mixed-C5	4.86	2.50	2.20	2.06
C6-C8	1.42	1.24	1.42	0.25
Total	*19.56*	*16.53*	*16.59*	*22.37*
Petroleum products				
Full range naphtha	16.96	16.64	17.67	14.33
Kerosene	7.54	9.01	8.34	10.92
Light gas oil	5.02	6.24	5.34	5.46
Heavy gas oil	0.94	1.63	0.67	2.73
Long residue	0.84	1.04	1.25	0.68
Total	*31.30*	*34.57*	*33.27*	*34.13*
Residual				
Asphaltene	0.007	0.016	0.003	0.018
Carbon black	49.14	48.90	50.14	43.51
Total	*49.15*	*48.92*	*50.14*	*43.52*

Table B5 Effect of different zeolites loaded with 1%Ag on product distribution (%wt)

Products	1%Ag/BETA	1%Ag/HMOR	1%Ag/KL	1%Ag/Y
Gas	33.23	25.97	30.41	26.07
Liquid	23.56	30.89	25.64	30.07
Solid	43.20	43.14	43.95	43.87

Table B6 Effect of different zeolites loaded with 1%Ag on the composition of products

Products distribution (%yield)	1%Ag/BETA	1%Ag/HMOR	1%Ag/KL	1%Ag/Y
Gas products				
Methane	6.10	4.41	5.58	4.99
Ethane	5.56	4.59	5.09	4.49
Ethylene	3.10	1.51	2.84	2.17
Propylene	3.56	2.36	3.26	2.93
light olefins	6.66	3.87	6.10	5.10
Cooking gas	9.79	11.04	8.96	8.77
Mixed-C5	4.66	1.87	4.26	2.33
C6-C8	0.47	0.19	0.43	0.39
Total	*33.23*	*25.97*	*30.41*	*26.07*
Petroleum products				
Full range naphtha	9.90	12.97	11.28	12.63
Kerosene	6.24	7.41	8.21	10.22
Light gas oil	4.12	2.47	3.59	4.21
Heavy gas oil	2.83	2.47	2.05	1.80
Long residue	0.47	5.56	0.51	1.20
Total	*23.56*	*30.89*	*25.64*	*30.07*
Residual				
Asphaltene	0.017	0.007	0.006	0.007
Carbon black	43.20	43.14	43.94	43.87
Total	*43.22*	*43.15*	*43.95*	*43.87*

Table B7 Effect of Pd –Ag/HMOR catalysts on products

Products distribution (%yield)	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
Gas products						
Methane	4.41	4.46	5.14	5.98	6.14	3.80
Ethane	4.59	3.82	4.66	5.09	5.10	4.75
Ethylene	1.51	1.37	1.41	1.69	1.22	1.00
Propylene	2.36	1.97	2.16	2.72	2.13	1.94
light olefins	3.87	3.34	3.57	4.41	3.36	2.94
Cooking gas	11.04	7.34	9.19	10.42	9.49	8.75
Mixed-C5	1.87	1.66	1.84	3.03	2.92	3.45
C6-C8	0.19	0.52	0.46	0.52	0.57	2.29
Total	*25.97*	*21.14*	*24.85*	*29.45*	*27.57*	*25.97*
Petroleum products						
Full range naphtha	12.97	13.38	12.00	10.80	12.08	18.11
Kerosene	7.41	10.12	10.70	9.38	9.36	7.98
Light gas oil	2.47	6.87	6.16	5.12	5.14	3.07
Heavy gas oil	2.47	3.98	2.27	1.99	2.72	0.61
Long residue	5.56	1.81	1.30	1.14	0.91	0.92
Total	*30.89*	*36.16*	*32.44*	*28.41*	*30.20*	*30.70*
Residual						
Asphaltene	0.007	0.004	0.0051	0.0012	0.001	0.0039
Carbon black	43.14	42.71	42.72	42.14	42.22	43.33
Total	*43.15*	*42.71*	*42.72*	*42.14*	*42.23*	*43.34*

Table B8 Effect of Pd –Ag/HMOR catalysts on product distribution (%wt)

Sample	α_{Pd}	α_{Ag}	**Selectivity (%)**		
			Solid	**Liquid**	**Gas**
Ag-Pd/HMOR	0	1	43.14	30.89	25.97
	0.2	0.8	42.71	36.16	21.14
	0.4	0.6	42.72	32.44	24.85
	0.6	0.4	42.14	28.41	29.45
	0.8	0.2	42.22	30.20	27.57
	1	0	43.33	30.70	25.97

APPENDIX C Chemical Composition in Maltenes

Table C1 Effect of amount of Ag loaded onto Y zeolite on liquid compositions

Liquid compositions (%weight)	Non catalyst	Y zeolite	1%Ag/Y	2%Ag/Y	3%Ag/Y
Saturated hydrocarbons	57.20	63.10	61.93	61.16	60.00
Mono-aromatics	14.81	15.78	19.03	15.22	15.88
Di- aromatics	12.98	7.75	7.10	7.61	10.00
Poly- aromatics	11.36	10.16	10.51	12.60	13.24
Polar- aromatics	3.65	3.21	1.42	3.41	0.88

Table C2 Effect of different zeolites loaded with 1%Ag on liquid compositions

Liquid compositions (%weight)	Saturated hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
Y	**63.10**	**15.78**	**7.75**	**10.16**	**3.21**
1%Ag/Y	61.93	19.03	7.10	10.51	1.42
HMOR	**58.46**	**11.79**	**12.56**	**13.08**	**4.10**
1%Ag/HMOR	70.95	10.03	9.77	7.71	1.54
BETA	**73.21**	**7.44**	**8.63**	**4.76**	**5.95**
1%Ag/BETA	56.47	6.62	16.72	13.88	6.31
KL	**65.69**	**11.52**	**9.56**	**9.07**	**4.17**
1%Ag/KL	60.74	12.47	15.92	9.81	1.06

Table C3 Effect of addition of Pd –Ag/HMOR catalysts on liquid compositions

Liquid compositions (%weight)	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
Saturated hydrocarbons	70.95	51.01	58.82	61.11	57.19	54.98
Mono-aromatics	10.03	17.29	16.72	22.65	17.99	14.94
Di-aromatics	9.77	12.97	5.26	7.69	2.52	13.07
Poly-aromatics	7.71	8.07	11.46	2.99	16.19	9.96
Polar-aromatics	1.54	10.66	7.74	5.56	6.12	7.05

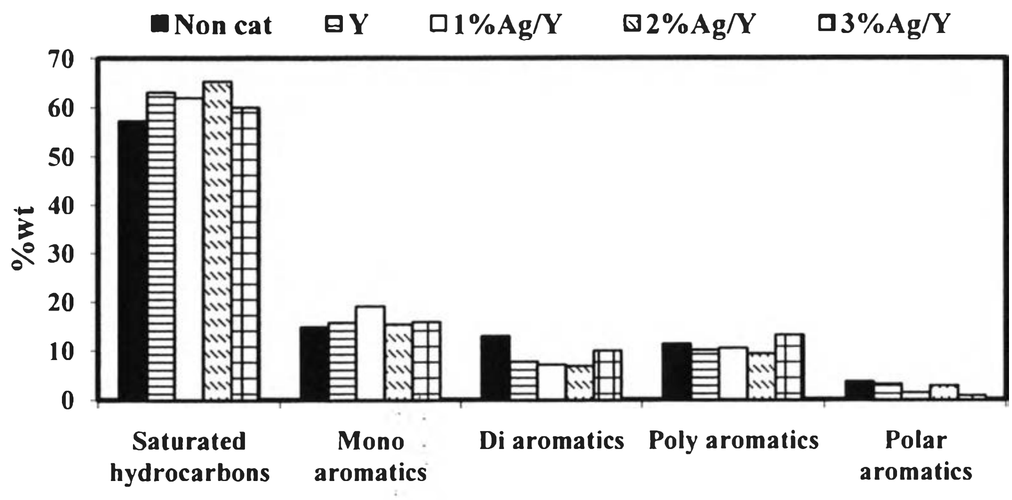


Figure C1 Effect of amount of Ag loaded onto Y zeolite on liquid compositions

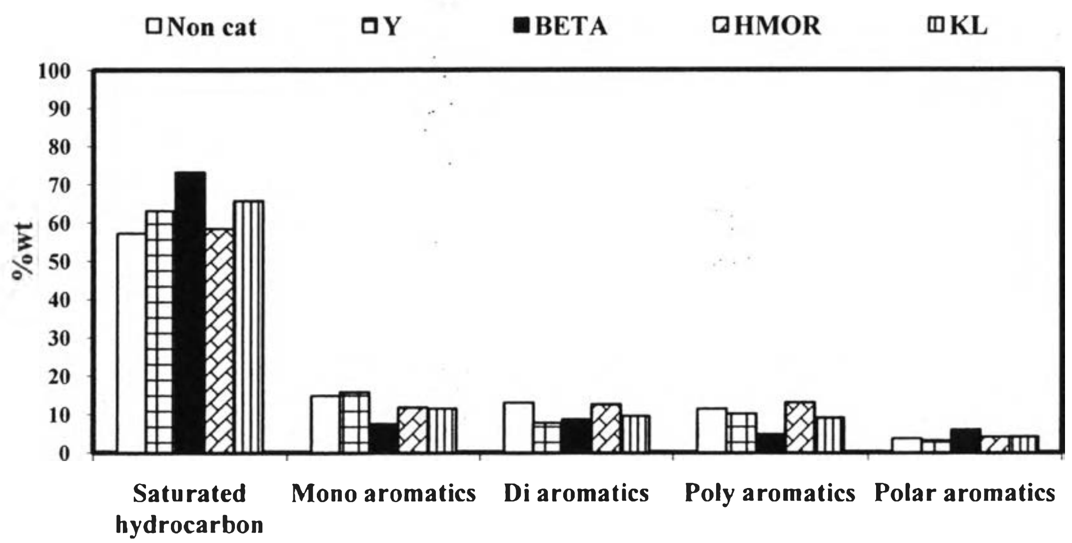


Figure C2 Effect of different zeolites on liquid compositions

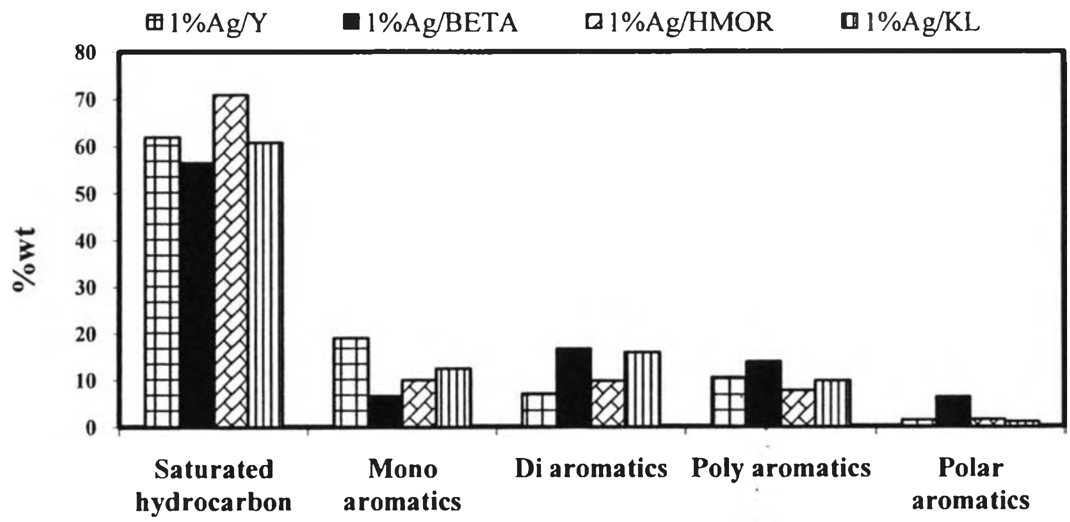


Figure C3 Effect of different zeolites loaded with 1%Ag on liquid compositions

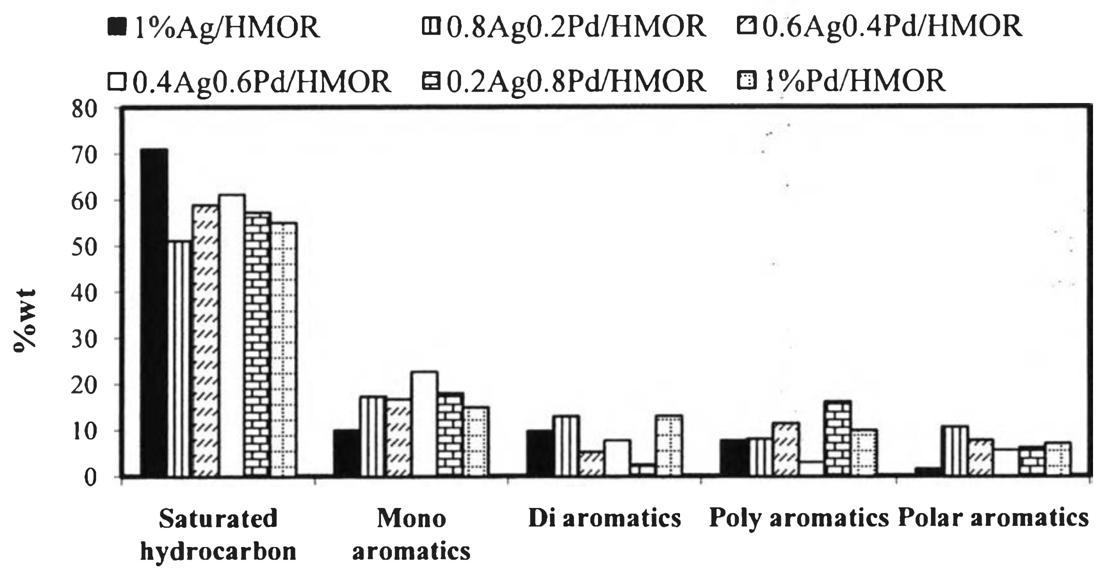


Figure C4 Effect of Pd –Ag/HMOR catalysts on liquid compositions.

APPENDIX D True Boiling Point Curves of Molecular Composition in Pyrolytic Oils

Table D1 True boiling point curves: - non catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	23.5	34.8	34.3	32.4	35.2	32.6
5	96.7	79.6	106.1	34.3	43.9	43.9
10	110	136.9	108	35.4	45	45
15	148.6	159.3	152.1	36.5	46	46
20	163	169.3	186.5	37.5	47.5	47.1
25	171.9	174.4	222.9	38.6	253.3	48.1
30	182.8	185.6	237.9	39.7	279	49.2
35	192.6	193	245.4	40.7	287.1	50.3
40	203.7	201.3	255.1	41.8	295.1	51.3
45	214.7	210.5	261	47.9	300	52.4
50	227.5	220.0	268.1	187.2	305.1	77.5
55	239.6	230.1	274.3	255.0	310	160.1
60	250.7	240.0	281.4	267.4	315.6	181.8
65	262.2	249.2	287.6	280.4	320.6	209.3
70	274.6	259.7	295.4	289.4	328.2	241.6
75	287.9	271.4	302.6	297.8	334.6	274.3
80	300.2	285.9	311.4	307.2	342.4	307.6
85	314.3	300.9	322.6	317.0	352.0	345.4
90	333.2	321.2	339.0	330.3	364.4	391.5
95	360.9	353.0	361.7	354.7	385.9	501.5
100	542.3	546.8	537.5	416.1	455.2	574.3

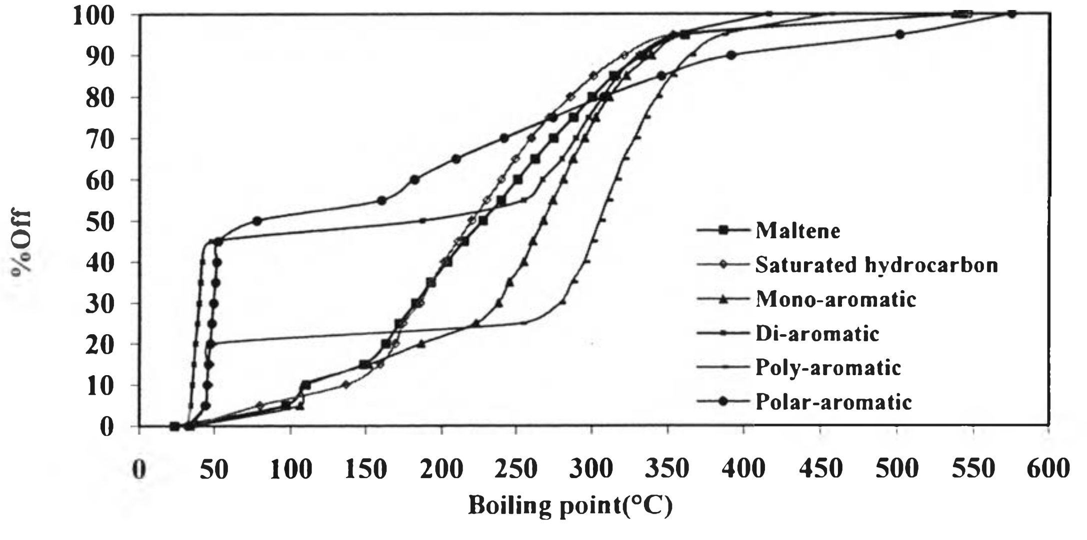


Table D2 True boiling point curves: - Y zeolite

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	42.6	35.2	26.5	42.8	64.7	20.5
5	149.2	71.5	71.1	167.6	65.8	46.9
10	153.5	74.5	74.1	186.7	66.8	72.6
15	166.7	78	78	208.8	67.9	187.4
20	170	155.5	213.4	252.4	69.0	199.3
25	176.4	170.3	230.9	274.1	69.4	212.3
30	183.6	179.4	236.1	286.6	69.7	219.7
35	190.2	184.7	246	293.3	70.1	229.8
40	197.2	190.8	252.4	302.2	70.9	255.2
45	203.5	196.9	255.7	308.0	72.3	287.7
50	211.1	203.2	264.3	315.7	154.2	306.9
55	217.1	208.3	270.5	322.4	178.2	340.4
60	223.7	213.4	273.9	329.9	229.3	376.9
65	231.5	219.2	280.1	337.4	318.0	384.4
70	240.3	224.6	286.5	346.3	342.4	385.0
75	251.4	231.8	292.3	355.4	359.8	385.3
80	263.9	238.5	300.6	366.7	375.1	385.8
85	278.4	249.0	311.2	380.4	390.0	386.3
90	298.8	260.4	325.7	396.1	408.5	387.4
95	332.9	276.3	346.4	417.8	436.5	411.5
100	398.5	309.7	393.6	473.6	540.8	466.9

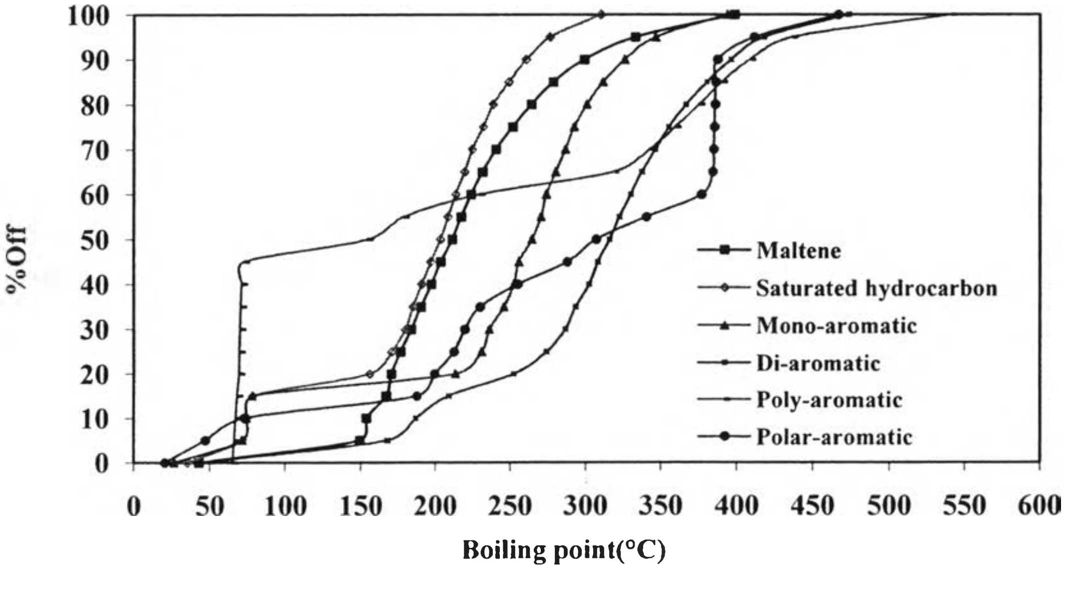


Table D3 True boiling point curves: - 1%Ag/Y catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	41.1	44.7	47.1	33.1	62.6	20.5
5	149.7	71.6	74.5	70.7	63.6	69.4
10	153.8	75.1	80.2	72.6	64.7	168.5
15	166.7	153.8	159.2	76.4	65.8	193.2
20	170	169.4	173.5	152.7	66.8	202.8
25	176.6	175.9	190.6	159.7	67.9	213.9
30	183.7	183.6	207.8	170.0	69.0	228.1
35	190.4	190.2	213.6	175.0	69.4	244.5
40	197.8	198.1	228	184.9	69.7	269.9
45	204	203.5	232.2	192.8	70.3	295
50	211.1	210.4	243.6	207.5	71.3	315
55	216	214.2	248.6	225.9	74.4	335.2
60	222.5	220.4	254.4	263.0	156.6	356.3
65	230.0	227.5	264.1	282.9	181.9	376.2
70	236.4	233.2	272.4	295.9	224.1	384.9
75	247.5	242.2	281.9	310.5	313.3	385.8
80	259.4	252.4	292.3	326.4	342.0	387.5
85	276.4	266.2	309.4	343.3	364.6	405
90	305.2	286.2	333.8	366.2	385.9	433.3
95	358.3	333.5	373.2	396.0	414.3	534.7
100	458.9	459.3	458.7	467.5	534.7	576.4

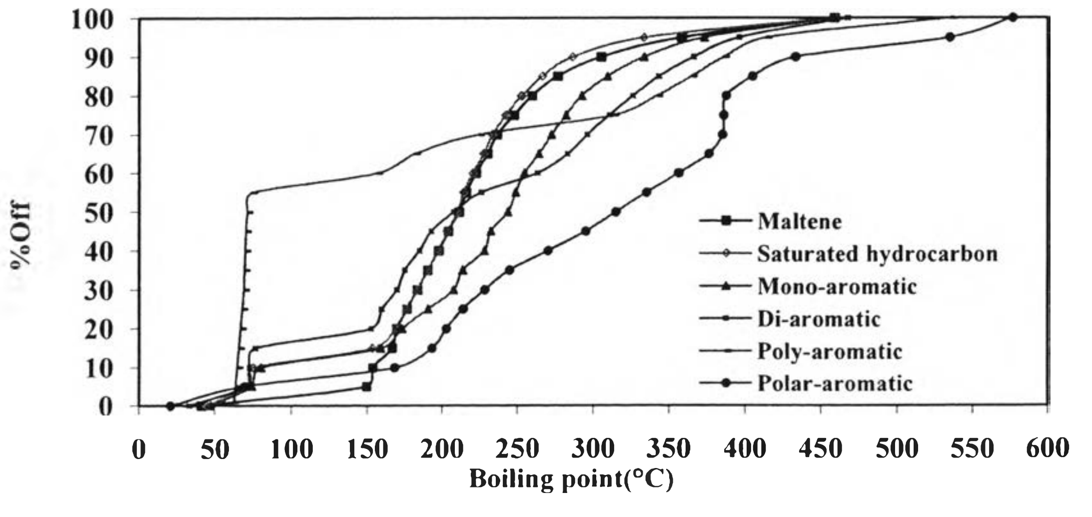


Table D4 True boiling point curves: - 2%Ag/Y catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	37.9	43.1	48.8	70.9	69.2	42.6
5	145.7	71.3	72.9	153.2	69.7	173.8
10	147.4	74.8	110.1	168.1	70.2	196.1
15	150.2	155.8	174.3	171.9	70.8	209.9
20	166.7	171.7	202.2	183.6	71.7	224.8
25	171.2	183.5	224.3	192.0	74.8	239.9
30	184.2	191.6	232.2	206.7	182.5	259.1
35	191.2	201.9	244.7	224.6	219.4	279.4
40	200.8	210	253.1	269.3	312.4	297.1
45	207.3	216.3	260	285.2	329.7	317.8
50	213.4	223.3	269.1	294.2	343.4	337.5
55	221.1	231.4	273.8	305.2	355.1	356.2
60	228.5	240.2	281.9	314.7	365.6	376.1
65	235.3	250.6	289	324.2	376.0	384.8
70	245.1	261.9	297.1	334.5	386.4	385.8
75	254.8	274.3	307.3	348.0	397.8	389
80	267	289.9	321.8	363.4	409.8	406.4
85	279.7	312.9	340.9	382.7	424.3	419.5
90	298.8	351.8	371.0	408.1	443.7	446.9
95	335.9	405.2	413.8	442.5	475.6	496.1
100	459.3	484.8	506.0	529.2	540.1	562.4

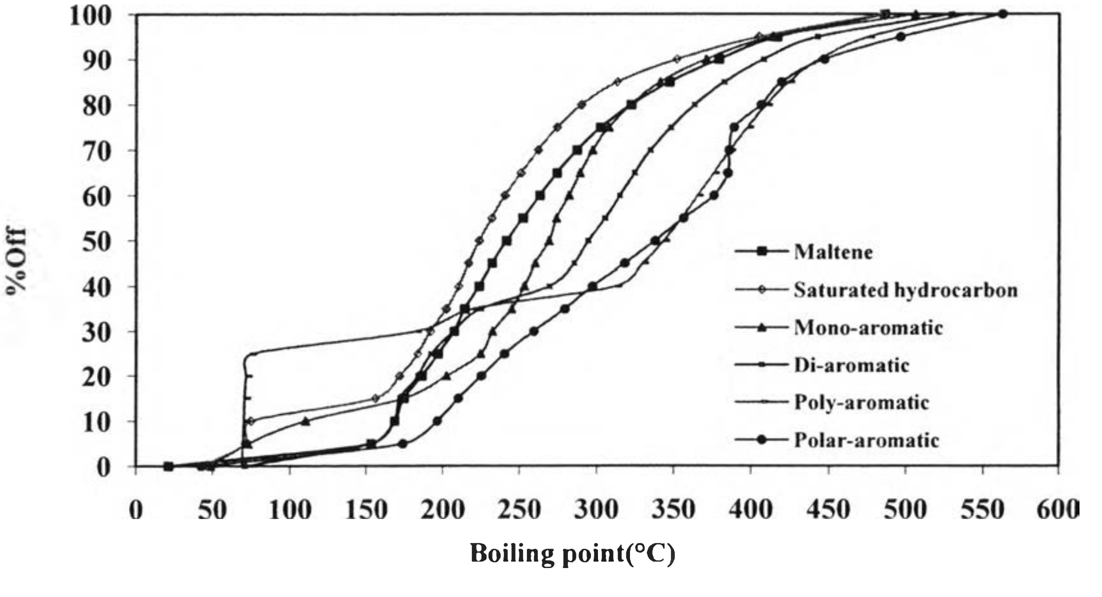


Table D5 True boiling point curves: - 3%Ag/Y catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	21	41.4	63.6	44.5	67.3	40.1
5	126	71.9	150.6	73.3	68.3	128.6
10	153.5	77.4	219.7	188.9	69.1	167.8
15	167.1	153.4	233.2	269.8	69.7	183.8
20	171.8	169.7	245.7	278.2	70.3	202.9
25	183.6	180.3	253.5	290.1	71.1	221.5
30	191.7	188.9	259.3	294.0	72.7	242.9
35	202.8	197.4	266.8	301.6	214.5	265.8
40	212	206.1	272.1	306.5	292.5	287.4
45	220.6	212.9	275.8	311.1	313.2	309.7
50	230.7	221	282.6	317.2	329.8	331.5
55	240.8	230.0	288	323.3	341.2	353.5
60	252.4	238.2	292.6	330.1	352.7	374.4
65	264.2	249.3	300.3	336.6	363.2	384.9
70	276.0	260.3	308.6	345.3	373.6	386.6
75	290.1	272.3	319.9	354.9	384.8	400.6
80	307.2	287.1	334.5	366.5	397.5	425.2
85	330.9	309.1	357.7	382.3	413.1	449.6
90	367.1	348.7	393.6	403.5	437.5	485.5
95	427	425.7	477.2	441.5	496.8	529.3
100	570.5	574.0	576.5	566.9	574.7	570.2

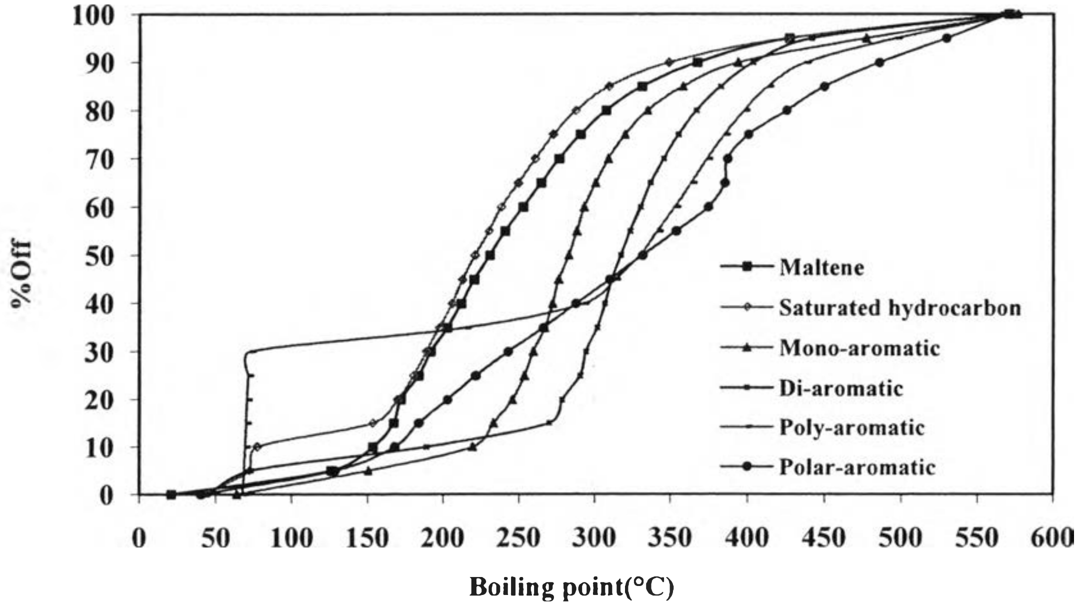


Table D6 True boiling point curves: - BETA zeolite

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	21.6	46.9	23.7	26.5	33.5	28.2
5	61.5	161.6	30.7	32.2	42.2	42.8
10	98.8	169.4	32.4	33.7	212.4	178.5
15	105.3	173.2	33.5	34.8	230.2	193.7
20	130.5	182	34.6	35.8	243.2	206.9
25	152.7	189.9	35.6	36.9	254.5	216.9
30	162.4	192.9	36.7	38.0	264.0	227.9
35	169.7	199.3	37.7	39.0	273.0	236.4
40	174	207.2	38.8	40.1	281.7	246.1
45	186	211.4	39.9	41.1	283.0	255.3
50	192.3	219.0	40.9	42.2	286.8	264.9
55	201.7	226.3	42.0	43.3	294.8	275
60	210.4	234.5	43.1	44.3	302.1	285.7
65	220.4	241.3	44.5	45.4	307.4	296.2
70	231.3	250.5	113.7	46.4	311.1	309.2
75	242.4	258.7	170.2	57.1	324.7	323.7
80	255.3	268.8	198.6	110.4	339.9	344.1
85	268.5	280.1	289.8	162.1	362.4	356.4
90	284.6	294.6	333.1	174.9	393.4	357.5
95	308.3	314.8	361.9	215.2	456.6	398.2
100	465.2	409.6	554.7	546.8	570.2	549.4

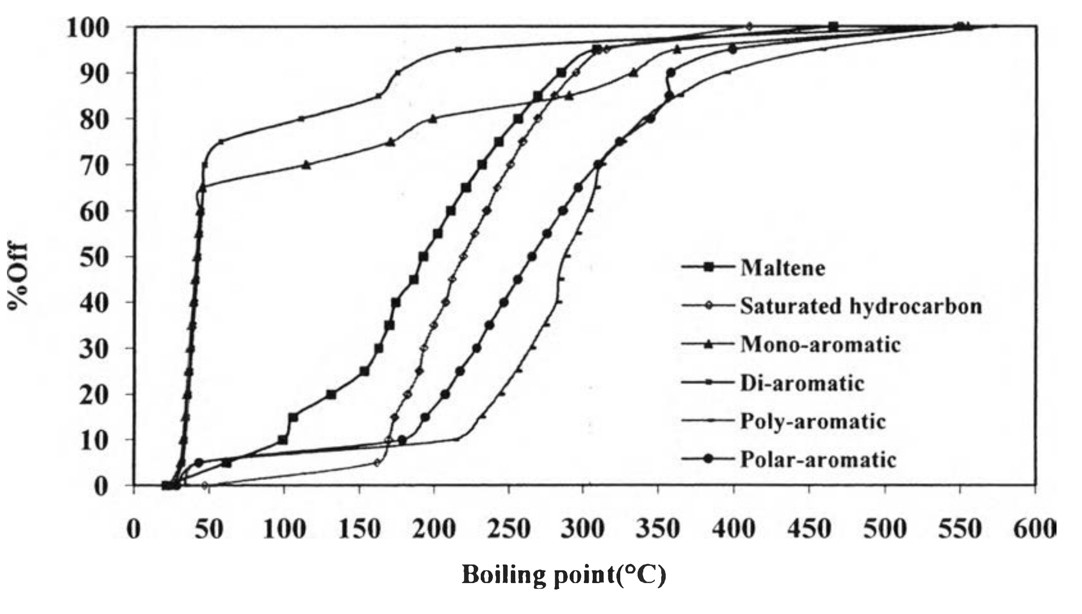


Table D7 True boiling point curves: - 1%Ag/BETA catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	73.5	70.5	31.8	21.8	47.1	20.8
5	152.9	168.6	77	39.7	71.3	78.9
10	155.8	171.8	269.9	51.8	71.7	172.8
15	167.5	181.4	276.5	64.1	72.1	188.3
20	170.4	185.8	287.4	70.7	72.5	196.5
25	176.9	190.8	292.5	72.0	72.9	205
30	184.3	197.7	299.7	72.7	73.2	215.9
35	190.9	201.9	304.8	73.5	73.6	230.4
40	198.5	208.3	308.1	74.3	74.0	248.1
45	205.4	211.9	312.9	75.3	74.5	264.5
50	212.8	217.4	317.5	76.2	186.4	280.9
55	220.6	223.1	321.8	77.2	258.2	294.9
60	230.4	230.0	325.9	78.6	353.9	310.8
65	240.5	235.8	329.8	81.6	377.8	324.3
70	254.0	246.0	334.5	337.9	383.9	342.2
75	269.1	255.0	340.2	347.6	385.1	355.2
80	282	267.5	345.9	354.6	388.6	374.5
85	297.6	280.3	352.5	360.6	398.6	385.2
90	316.3	297.7	360.5	367.5	410.8	390.8
95	341.3	323.5	371.5	375.3	427	412
100	390.1	381.8	397.3	386.0	474.9	590.7

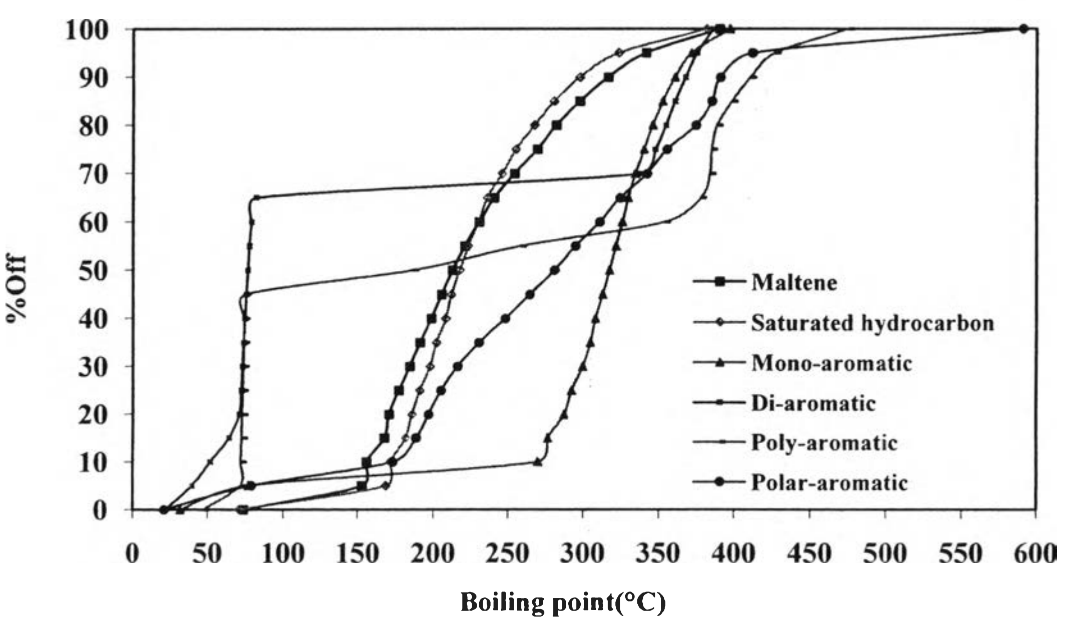


Table D8 True boiling point curves: - HMOR zeolite

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	43.7	40.1	26.9	27.5	22.2	20.5
5	101.9	123.0	32.6	32.6	33.9	21.6
10	110	155.6	34.6	33.7	35	22.7
15	137.9	165.7	35.6	34.8	41.6	29.9
20	157	171	36.7	35.8	42.6	44.3
25	166.1	176.6	37.7	36.9	43.7	48.4
30	171.8	185.6	38.8	38.0	44.7	154.5
35	179.3	191.4	39.9	39.0	45.8	178.9
40	188.8	197.6	40.9	40.1	46.9	194.1
45	194.7	205.8	42	41.1	47.9	212.5
50	204.6	212.0	43.1	42.2	49	228.3
55	212.5	220.5	45.2	43.3	50.1	243.8
60	223.3	228.8	67.0	44.3	51.1	259.7
65	234	237.6	170.7	45.4	52.2	274.5
70	243.9	245.1	259.7	46.4	53.2	289.8
75	255	254.5	277.2	58.6	54.3	306.1
80	265.9	263.0	283.0	104.8	55.4	328.5
85	279.4	274.3	294.2	154.8	56.4	356.5
90	294.7	289.3	304.2	195.8	90.8	378.2
95	315.2	311.4	319.7	309.2	216.2	492
100	515.7	517.1	531.8	394.6	529.7	573.4

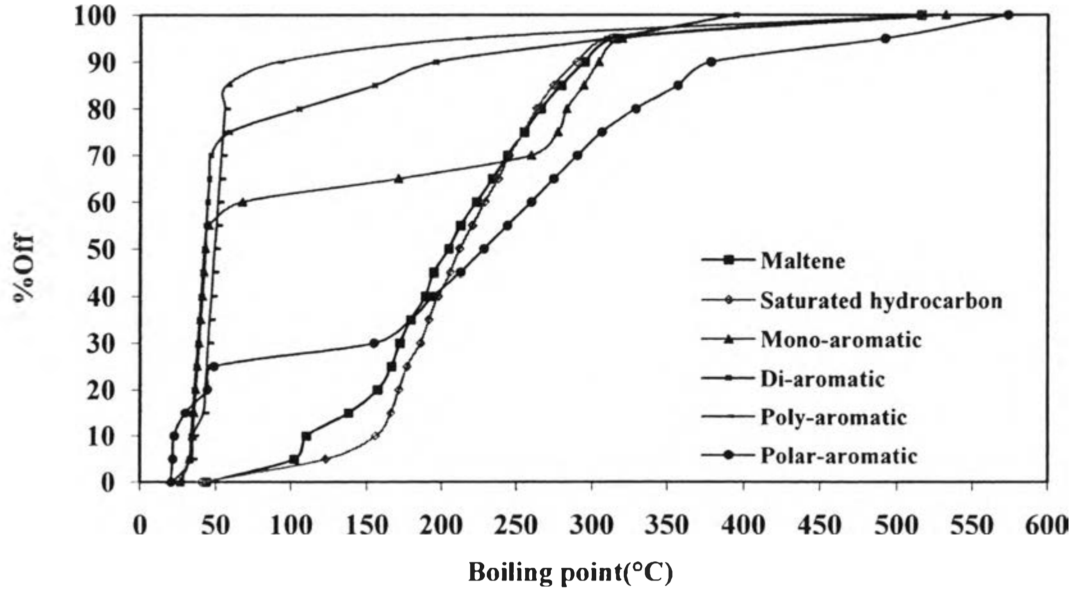


Table D9 True boiling point curves: - 1%Ag/HMOR catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	74.2	56.2	51.5	28.4	26.1	19.5
5	153.6	76.1	72.8	69.1	71.6	37.3
10	167.7	156.3	80.8	70.4	72.9	55.8
15	166.7	169.9	153.1	72.1	81.7	72.3
20	170	177.7	166.3	75.7	108.1	77.2
25	176.6	184.5	169.4	109.8	123.3	95
30	183.7	191.2	172.1	149.7	134.4	107.9
35	190.4	200.8	183.4	152.9	143.7	119.9
40	197.8	206.8	192.4	156.8	152.7	131.3
45	204	212.9	211.8	166.1	156.7	141.6
50	211.1	219.6	244	168.5	161.6	153
55	216	226.3	274.4	170.2	168.3	165.7
60	222.5	233.8	294.6	173.0	172.0	183.4
65	230.0	243.0	311.4	180.3	180.4	195.5
70	236.4	253.0	326.6	184.6	188.5	202.3
75	247.5	265.0	342.0	191.7	198.3	212.4
80	259.4	279.3	362.0	202.4	209.0	223.9
85	276.4	299.4	389.6	215.0	219.3	249.7
90	305.2	333.9	449.4	245.0	233.4	384.6
95	358.3	403.6	525.5	366.5	265.5	385.4
100	458.9	547.2	572.6	457.1	589.2	386.7

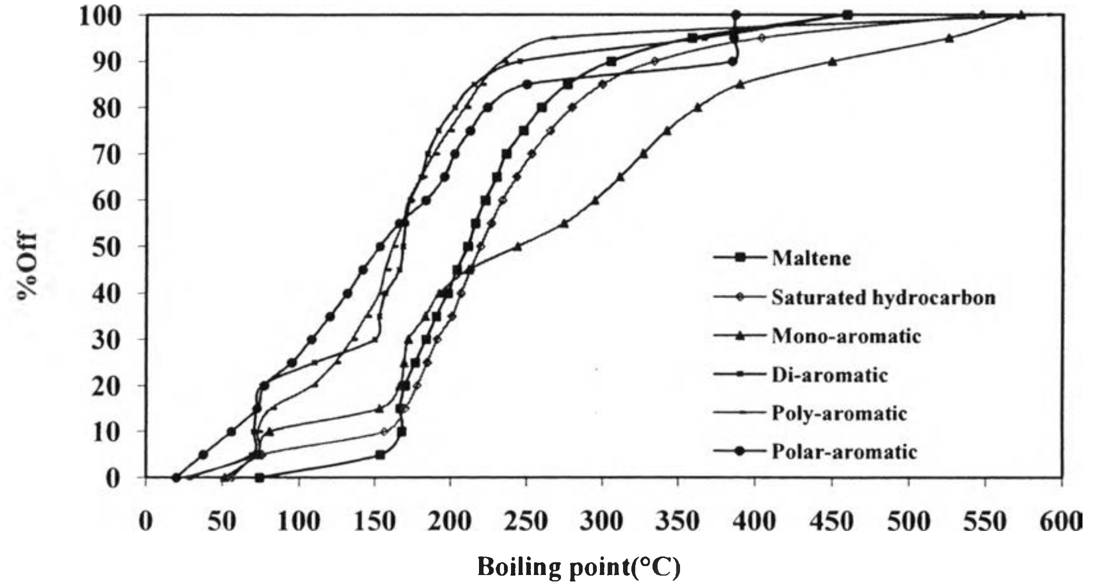


Table D10 True boiling point curves: - KL zeolite

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	21.6	35.4	42.2	28.4	34.8	35.4
5	75.7	122.0	184.9	32.9	43.1	43.3
10	101.2	153.7	192.4	33.9	44.1	44.3
15	109.7	162.6	204.7	35.0	45.2	45.4
20	134.9	169.5	207.9	36.0	46.2	46.4
25	155.6	173.4	211.6	37.1	47.3	47.5
30	164.6	181.6	217.2	38.2	48.4	48.6
35	170.7	188.7	223.3	41.6	49.4	49.6
40	177.8	193.4	226.1	43.3	75.4	50.7
45	187.3	199.7	231.6	170.2	213.4	51.8
50	193.7	207.0	238.0	227.3	253.5	52.8
55	203.4	213.0	240.0	238.6	262.6	53.9
60	211.9	220.5	244.4	245.2	269.8	54.9
65	222.5	228.1	249.2	254.0	277.9	56.0
70	232.2	236.6	255.4	258.3	283.7	75.7
75	242.4	243.9	259.7	266.0	290.7	98.3
80	253.5	252.9	266.1	272.4	299.9	178.4
85	264.9	262.8	273.3	280.7	310.0	215.8
90	281.4	277.6	284.3	293.3	323.3	272.4
95	308.1	304.0	307.7	318.6	353.1	358.4
100	540.9	517.0	526.8	552.0	558.2	570.9

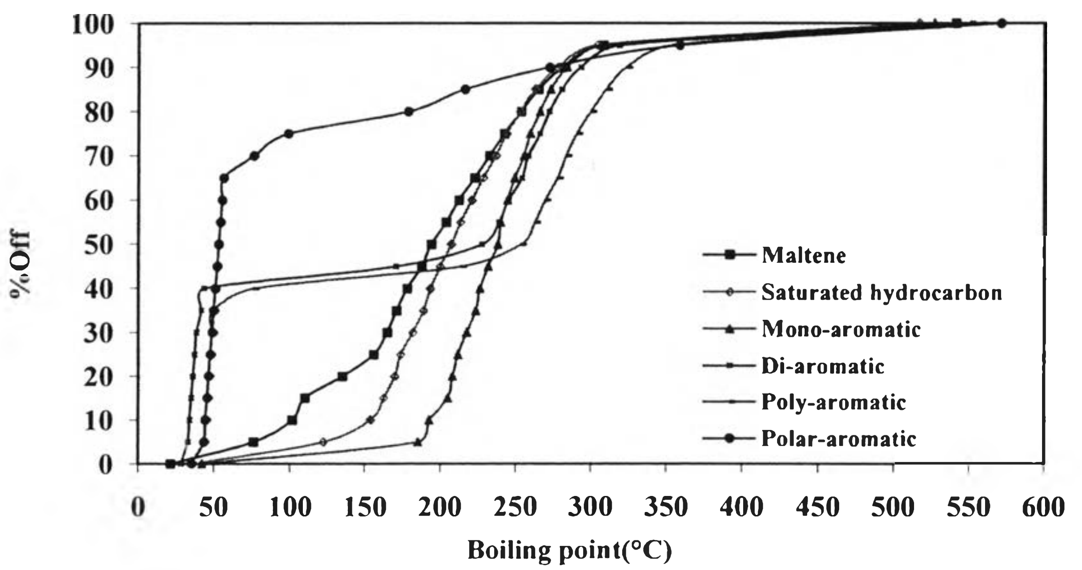


Table D11 True boiling point curves: - 1%Ag/KL catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	45.2	69.2	45.8	46.2	42.8	39.9
5	148.7	156.5	168.6	153.6	72.0	155
10	153.4	169.7	226.1	156.7	72.7	177.6
15	157.2	176.9	255.3	167.1	74.5	194.4
20	168.5	183.5	271.8	169.6	155.1	199.5
25	171.4	189.8	277.2	170.9	158.1	209.9
30	180.1	197.5	286.6	173.2	169.0	219.1
35	185.2	202.8	292	181.4	171.8	231.2
40	191.8	209.4	299.7	185.2	181.8	243.2
45	201.2	213.1	305.1	192.1	191.9	257
50	208	219.4	310.8	203.4	211.3	271.1
55	213.1	225.6	316.7	224.2	236.6	285
60	220.4	231.3	322.6	292.1	269.1	298.4
65	228.5	238.6	328.3	338.4	307.4	313.5
70	236.3	247.9	334.1	355.2	335.5	330.0
75	248.3	257.3	341.7	368.1	360.6	349.8
80	261.7	269.5	350.1	380.9	382.6	372.3
85	277.9	282.8	360.5	395.0	400.6	384.8
90	300.4	301.8	372.5	417.2	421.3	386.5
95	334.6	332.6	391.6	458.5	455.6	407.6
100	406	408.3	588.3	580.5	510.8	568.8

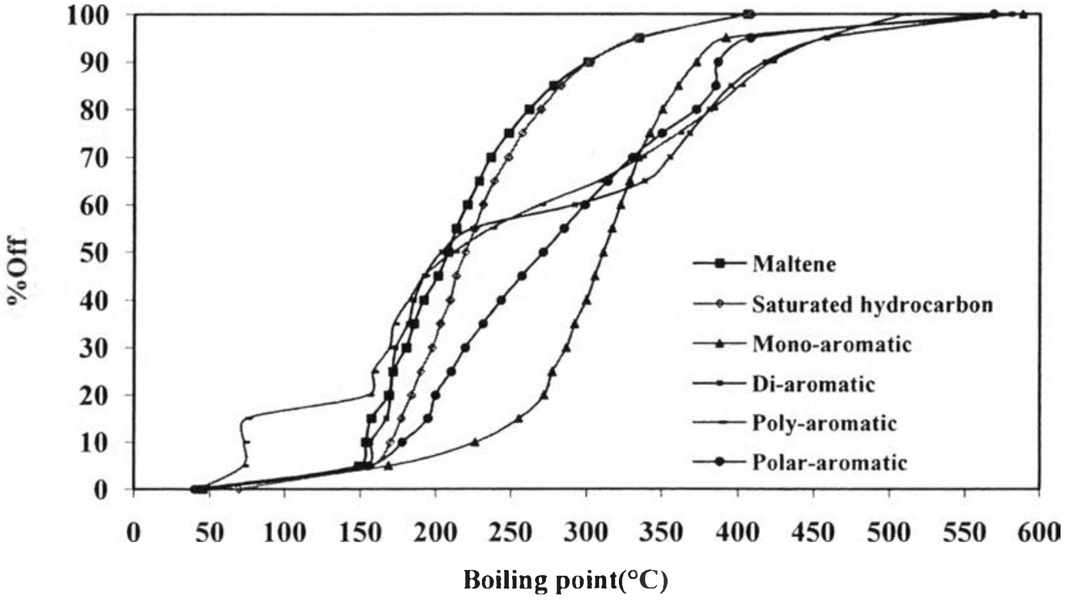


Table D12 True boiling point curves: - $Ag_{0.8}Pd_{0.2}$/HMOR catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	22.9	73.2	149.2	74.8	149.4	22
5	113.6	146.7	190.4	145.8	193.0	185.5
10	147.4	150.1	203.3	149.4	217.1	199.8
15	149.6	166.9	211.6	166.5	261.6	208.9
20	164.6	171.7	218.1	170.8	281.6	217.4
25	170.7	183.9	226.1	183.3	291.1	228.6
30	185.1	190.5	230.4	191.4	298.7	238.9
35	193.2	199.9	236.1	205.1	305.3	246.9
40	204.6	205.7	244.1	223.6	312.0	257.8
45	213.3	212.7	249.7	250.1	317.2	267.1
50	221.5	219	257.1	264.7	325.2	277.2
55	229.4	224.3	263.8	275.2	333.0	287.3
60	238.6	233.1	271.3	285.7	340.7	297.7
65	249.9	241.6	276.3	296.3	349.4	309.5
70	261.9	253.1	283.9	304.6	357.1	322.1
75	273.5	264.8	291.9	317.4	365.7	336.7
80	286.9	275.4	304.1	329.7	375.0	352.3
85	304.1	289.9	320.9	346.1	385.2	370.4
90	329.8	311.0	342.7	371.2	398.5	390.7
95	373.8	356.3	381.1	402.2	417.8	419.7
100	450.9	442.1	454.4	460.4	481.8	491.7

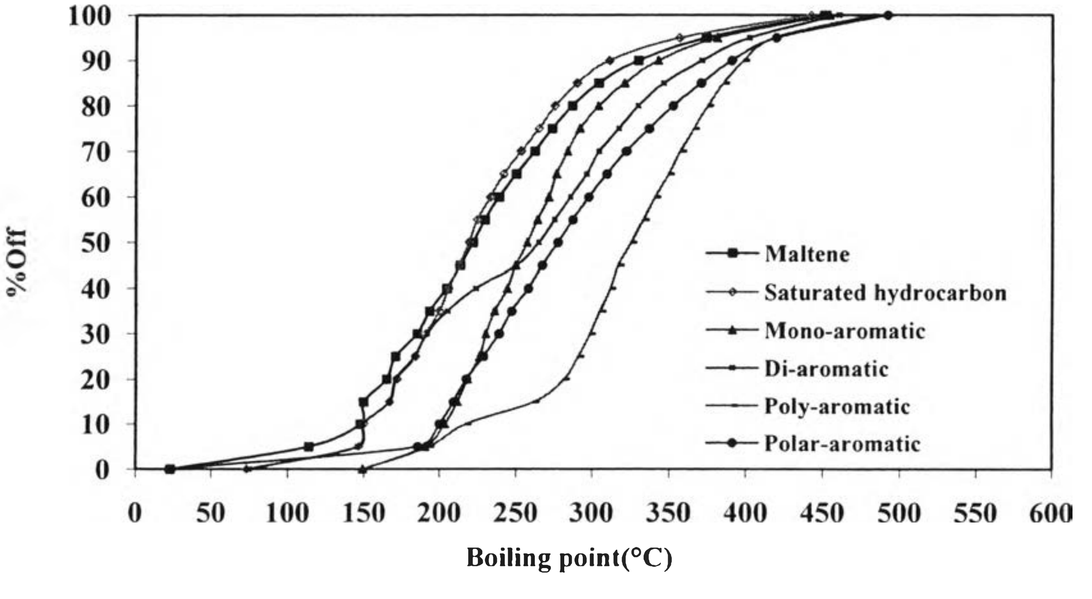


Table D13 True boiling point curves: - $Ag_{0.6}\,Pd_{0.4}$/HMOR catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	47	71.5	75.6	43	71.6	22.3
5	146.2	148.0	167.3	75.7	73.4	189.2
10	147.9	168.2	189.5	80.6	73.8	203.5
15	151.3	182.7	202.6	88.1	74.1	212
20	167.8	190.7	211.5	154.2	74.7	220.1
25	174.9	200.6	218.9	172.7	75.7	229.9
30	187.2	206.4	225.9	188.4	79.5	239.3
35	196.5	212.5	232.2	202.9	165.5	247.7
40	205.1	217.9	241	218.2	195.2	257.1
45	212.8	222.4	248	236.4	222.1	267.1
50	219.5	228.1	256.1	261.4	247.1	277.3
55	225.6	233.9	265.2	291.1	273.6	288.1
60	232.8	240.3	271.4	310.6	300.0	298.8
65	241.2	247.6	278.9	325.8	319.6	310.9
70	250.8	255.1	288.1	339.1	339.4	324.2
75	260.9	264.0	299.1	352.4	355.4	339.4
80	272	272.1	312.9	364.6	370.6	355.7
85	285.4	283.2	327.4	377.1	384.5	373.4
90	307.2	298.6	346.2	391.9	401.7	391.1
95	350.2	335.6	375.6	412.0	427.8	421.1
100	446.4	434.0	445.5	470.9	496.8	492.9

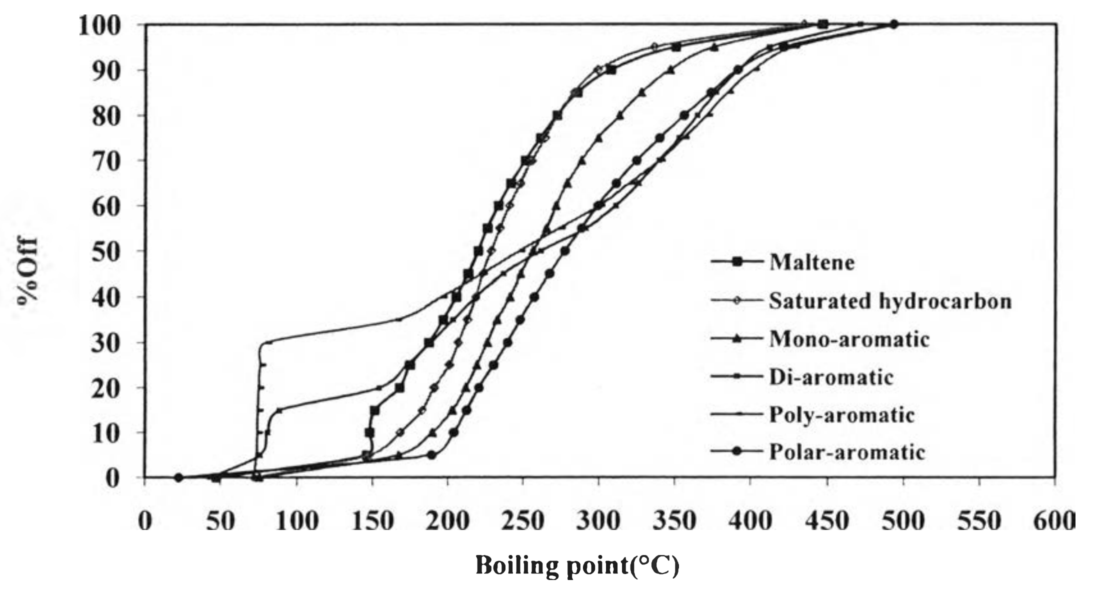


Table D14 True boiling point curves: - $Ag_{0.4}\ Pd_{0.6}$/HMOR catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	25.4	52.7	74.3	73.8	23.1	23.1
5	112.1	150.1	168.7	185.5	27.5	30.7
10	146.3	168.5	190	197.9	38.3	73.9
15	147.6	180.5	196.6	210.4	75.3	176.1
20	149.5	186.8	208.1	214.5	248.0	200
25	163.7	192.1	212.3	223.7	281.8	211.6
30	168.3	200.4	218	229.6	294.8	224.4
35	174.2	204.3	225.3	235.1	303.4	239.9
40	185.8	209.6	228.8	245.0	309.4	255.3
45	192.6	213.6	233.9	252.2	315.2	271.1
50	202.2	218.7	243.3	261.1	322.4	287.1
55	209.1	222.7	248.1	271.1	330.6	302.3
60	215.4	229.0	257.4	277.8	340.2	316.8
65	222.7	235.6	266.4	288.0	350.0	331.4
70	231.4	243.6	274.5	297.4	360.2	347.0
75	242.4	254.6	285.2	306.7	372.3	364.1
80	258	268.1	298.4	318.8	385.5	381.9
85	277.7	281.6	316.4	332.2	402.4	398
90	305.2	304.0	336.6	354.7	424	418
95	350.3	348.6	373.9	387.6	465.2	453
100	474.4	454.1	450.7	460.2	562.1	556.2

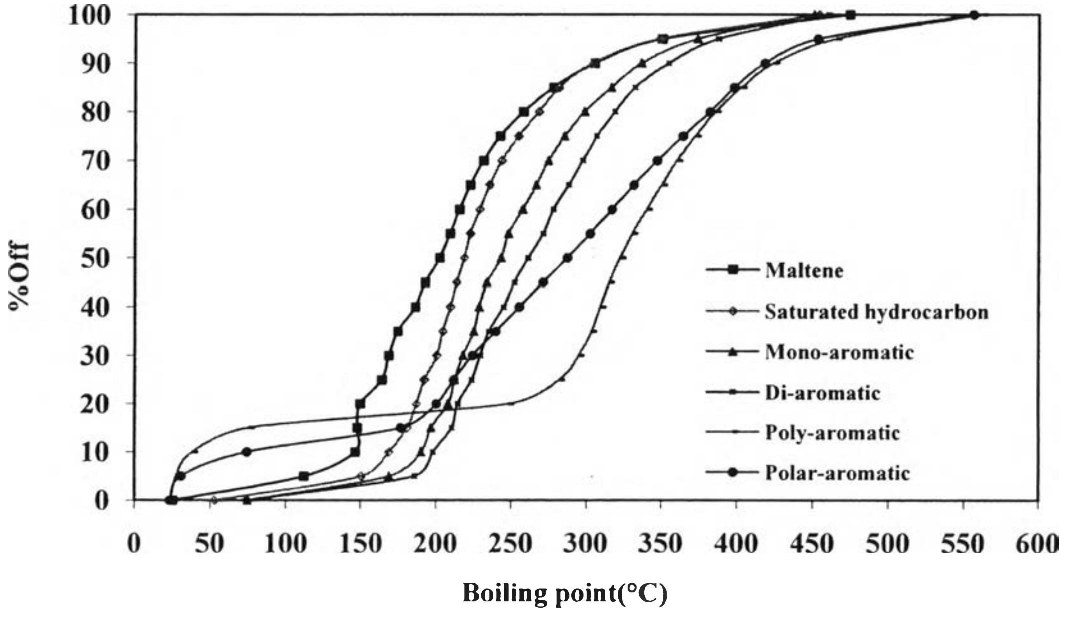


Table D15 True boiling point curves: - $Ag_{0.2}Pd_{0.8}$/HMOR catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	39.4	149.3	21.2	24.4	27.1	22
5	114.8	181.1	35.4	174.6	74.1	128.2
10	146.7	191.4	186.1	193.8	75.0	207.3
15	148.9	201.9	203.6	205.0	78.1	219
20	160.6	207.8	212.8	212.6	184.1	230.7
25	168.1	213	221.1	221.3	204.4	242.3
30	177.8	218	227.6	229.6	221.2	253.3
35	188.3	223.1	234.2	241.3	240.6	264.7
40	198.8	228.8	243.5	259.0	262.1	276
45	207.1	233.9	249.6	284.2	287.7	288
50	214	240	256.6	303.0	309.7	299.9
55	221.8	246.0	264.5	314.4	327.3	312.4
60	229.6	253.0	271.7	325.9	343.7	324.9
65	237.9	259.5	278.3	336.6	356.4	338.1
70	247.7	267.4	287.6	348.9	368.8	351.7
75	258.7	274.3	298.3	360.3	379.9	366.5
80	271.1	284.0	311.4	372.6	391.2	381.5
85	284.8	297.4	326.0	386.0	404.4	396
90	307.4	318.8	344.8	402.9	420.6	414.3
95	346.8	358.3	376.4	425.4	445.6	441.2
100	443.6	439.1	453.5	486.8	501.3	501.8

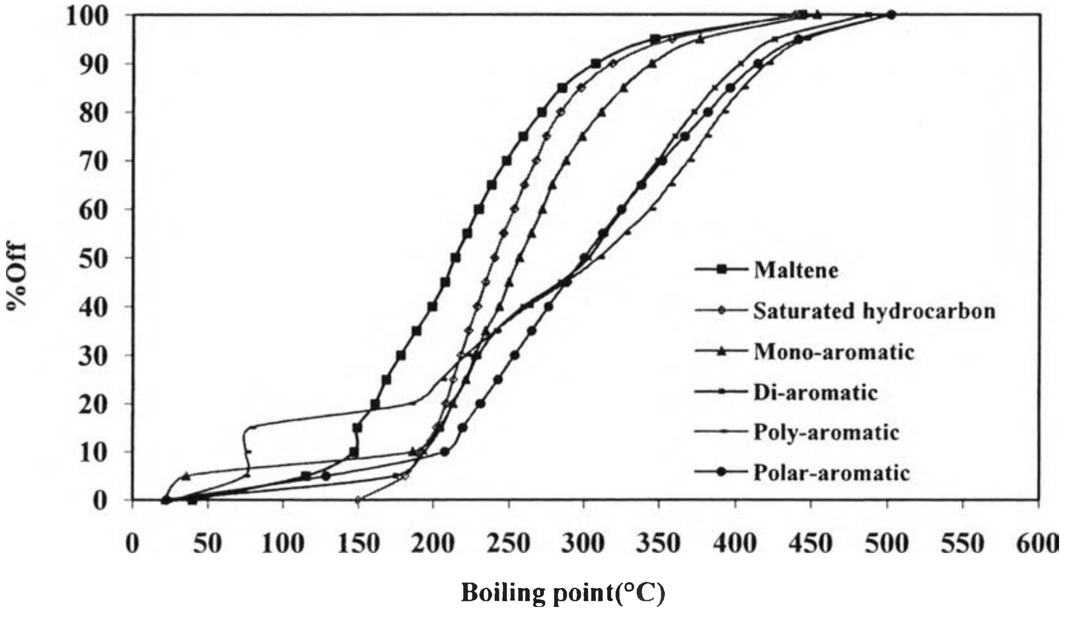
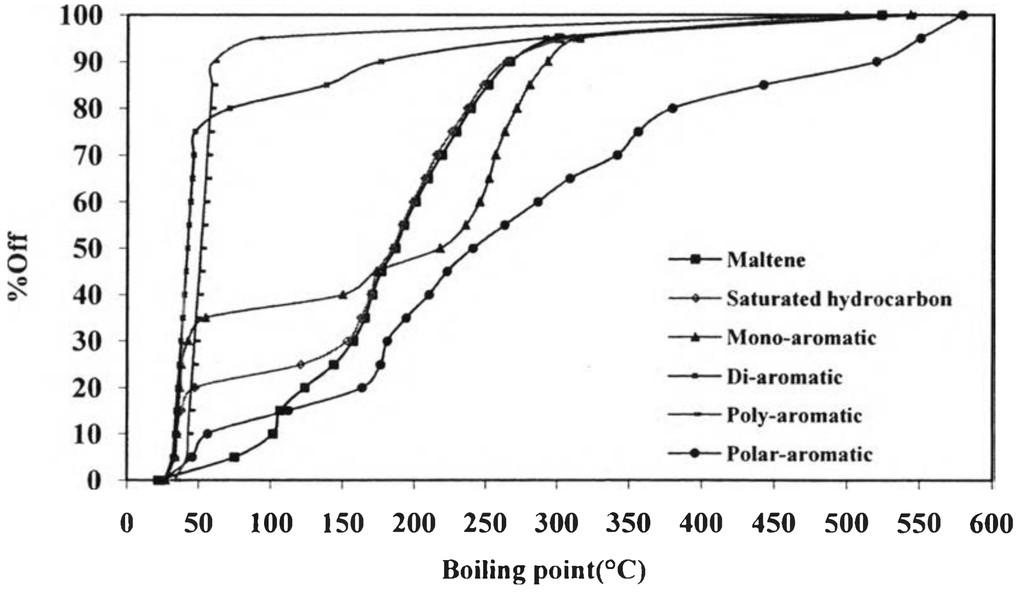


Table D16 True boiling point curves: - 1%Pd/HMOR catalyst

% OFF	Boiling point (°C)					
	Maltene	Saturated Hydrocarbons	Mono-aromatics	Di-aromatics	Poly-aromatics	Polar-aromatics
0	21.6	27.5	27.1	25.8	33.5	25.4
5	74.6	33.5	33.5	31.8	41.6	45.4
10	101.3	34.6	34.6	33.3	42.6	56.2
15	106.2	37.7	35.6	34.3	43.7	111.8
20	123.3	47.3	36.7	35.4	44.7	163.5
25	143.7	120.4	37.7	36.5	45.8	176.1
30	157.3	152.9	42.4	37.5	46.9	180.8
35	165.5	162.6	54.7	38.6	47.9	193.9
40	170.6	169.4	149.9	39.7	49	209.8
45	176.9	174	173.5	40.7	50.1	222.5
50	186.2	184.5	217.5	41.8	51.1	240.6
55	192.3	191	235.5	42.8	52.2	262.9
60	200.5	198.3	245.5	43.9	53.2	286.2
65	209	206.8	252.1	45	54.3	308.6
70	218.6	214.9	256.4	46	55.4	341.2
75	228.7	225.2	263.1	47.1	56.4	355.6
80	239	236.5	271.2	70.9	57.5	379.1
85	251.4	247.6	280.3	137.9	58.6	442.1
90	266.5	264	292.9	176.1	59.6	519.5
95	300.6	310.8	315.2	291.5	91.2	550.1
100	523.1	499.5	543.1	544.9	498.9	578.9



APPENDIX E Petroleum Fractions in Maltenes

Table E1 Effect of the amount of Ag loaded onto Y zeolite on petroleum fractions

Petroleum fraction (%wt)	Non catalyst	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
Full range naphtha	38	42	42	40	34
Kerosene	22	32	34	32	24
Light gas oil	20	16	14	18	20
Heavy gas oil	16	8	6	5	12
Residue	4	2	4	3	10

Table E2 Effect of different zeolites loaded with 1%Ag on petroleum fractions

Samples	Petroleum fraction (%wt)				
	Full range naphtha	Kerosene	Light gas oil	Heavy gas oil	Residue
Y	42	32	16	8	2
1%Ag/Y	42	34	14	6	4
HMOR	48	26	18	5	3
1%Ag/HMOR	41	35	13	7	4
BETA	54	24	16	3	3
1%Ag/BETA	42	26.5	17.5	12	2
KL	53	25	16	2	4
1%Ag/KL	44	32	14	8	2

Table E3 Effect of Pd –Ag/HMOR catalysts on petroleum fractions

Samples (Pd-Ag/HMOR)		Petroleum fraction (%wt)				
α_{Pd}	α_{Ag}	Full range naphtha	Kerosene	Light gas oil	Heavy gas oil	Residue
0	1	41	35	13	7	4
0.2	0.8	37	28	19	11	5
0.4	0.6	37	33	19	7	4
0.6	0.4	38	33	18	7	4
0.8	0.2	40	31	17	9	3
1	0	59	26	10	2	3

APPENDIX F Gas Composition

Table F1 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on gas compositions

gas composition	Non cat	Y zeolite	1%Ag/Y zeolite	2%Ag/Y zeolite	3%Ag/Y zeolite
Methane	17.65	18.74	19.13	18.669	17.87
Ethylene	7.77	8.99	8.33	9.332	8.99
Ethane	15.59	17.01	17.21	16.242	16.23
Propylene	9.14	12.55	11.25	12.358	12.73
Propane	8.38	10.18	10.84	10.444	10.05
C4	21.31	22.20	22.82	22.767	22.47
C5	11.26	9.20	8.95	7.994	9.64
C6	5.95	1.07	1.39	1.883	1.86
C7	0.88	0.07	0.09	0.28	0.15
C8	2.07	0.01	0.01	0.03	0.02

Table F2 Influence of HMOR, KL, BETA, and Y catalysts on gas compositions

gas composition	Y	HMOR	BETA	KL
Methane	18.74	15.11	9.43	17.29
Ethylene	8.99	4.15	3.83	7.14
Ethane	17.01	14.06	8.51	15.58
Propylene	12.55	6.54	6.49	9.42
Propane	10.18	16.45	9.12	8.97
C4	22.20	20.89	30.29	20.17
C5	9.20	15.23	24.99	12.86
C6	1.07	5.87	6.12	6.13
C7	0.07	1.01	0.80	1.29
C8	0.01	0.70	0.41	1.16

Table F3 Influence of 1%Ag-loaded HMOR, KL, BETA, and Y catalysts on gas compositions

gas composition	**Ag/Y**	**Ag/HMOR**	**Ag/BETA**	**Ag/KL**
Methane	19.13	16.97	18.35	18.35
Ethylene	8.33	5.80	9.33	9.33
Ethane	17.21	17.67	16.73	16.73
Propylene	11.25	9.10	10.72	10.72
Propane	10.84	19.29	9.05	9.05
C4	22.82	23.22	20.41	20.41
C5	8.95	7.21	14.01	14.01
C6	1.39	0.70	1.29	1.29
C7	0.09	0.05	0.10	0.10
C8	0.01	0.01	0.02	0.02

Table F4 Influence of Pd –Ag/HMOR catalysts on gas compositions

gas composition	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
Methane	16.97	21.10	20.68	20.32	22.27	14.65
Ethylene	5.80	6.50	5.67	5.74	4.44	3.84
Ethane	17.67	18.05	18.75	17.29	18.50	18.28
Propylene	9.10	9.31	8.71	9.23	7.74	7.47
Propane	19.29	13.50	15.45	14.71	14.68	12.74
C4	23.22	21.24	21.51	20.67	19.74	20.94
C5	7.21	7.87	7.41	10.27	10.59	13.282
C6	0.70	2.06	1.55	1.54	1.74	7.91
C7	0.05	0.31	0.18	0.17	0.28	0
C8	0.01	0.07	0.11	0.07	0.04	0.90

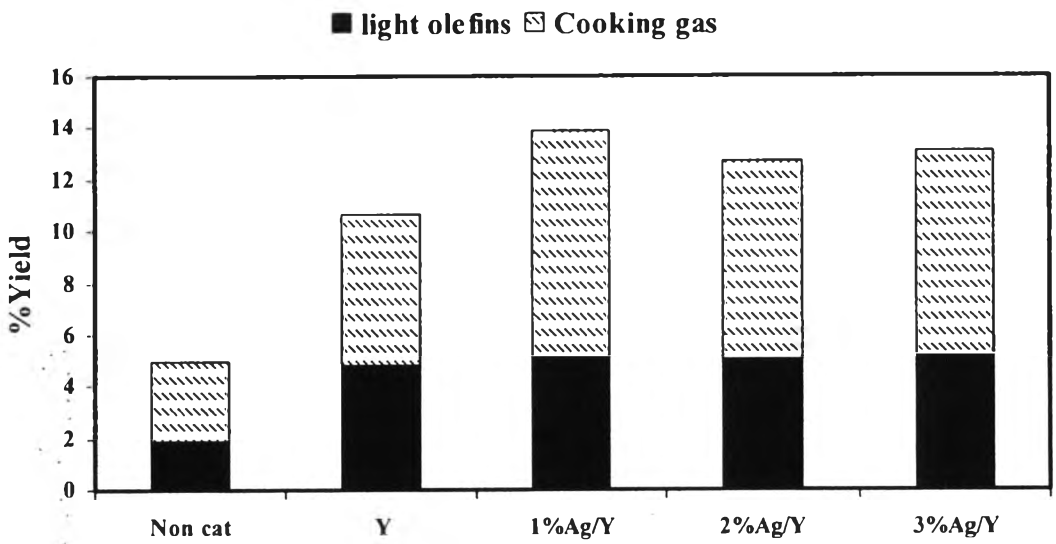


Figure F1 Effect of amount of Ag loaded onto Y zeolite on light olefins and cooking gas production

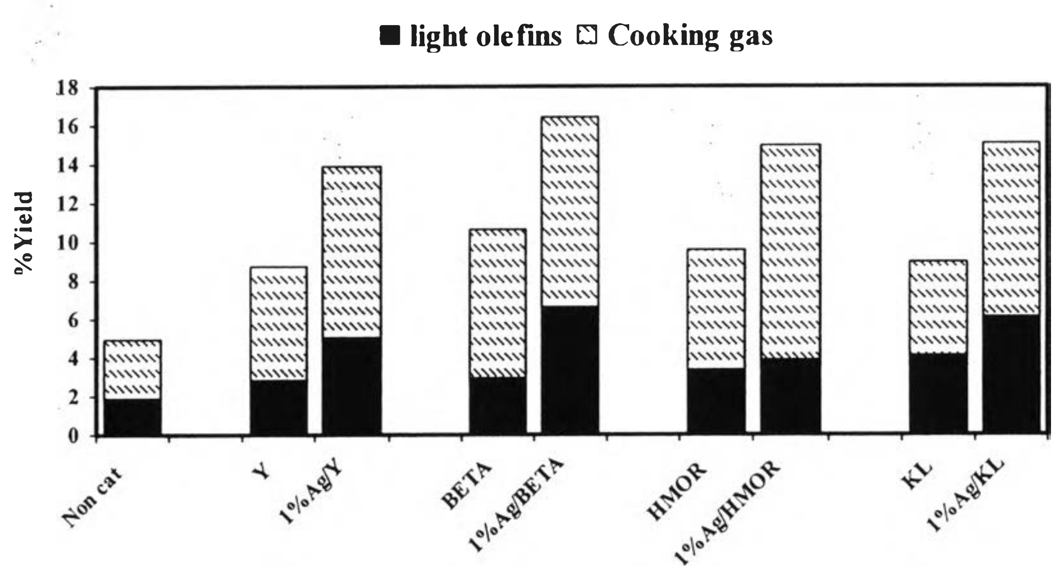


Figure F2 Effect of different zeolites loaded with 1%Ag on light olefins and cooking gas production

APPENDIX G Sufur Analysis Determined by CHNOS Elemental Analysis Technique

Table G1 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on the amount of sulfur content

Sample catalysts	S in oil product $(\%wt)_{avg}$	S on spent catalyst (%wt)
Without catalyst	1.3800	-
Y	0.9840	0.1370
1%Ag/Y	0.9290	0.3170
2%Ag/Y	1.2100	0.2760
3%Ag/Y	1.0410	0.2670

Table G2 Influence of different zeolites loaded with 1%Ag on the amount of sulfur content

Sample catalysts	S in oil product $(\%wt)_{avg}$	S on spent catalyst (%wt)
Y	0.9840	0.1370
BETA	0.9395	0.1760
KL	0.9125	0.2030
HMOR	0.9835	0.1480
1%Ag/Y	0.9290	0.3170
1%Ag/BETA	0.9050	0.3770
1%Ag/KL	0.8280	0.4180
1%Ag/HMOR	0.7455	0.4350

Table G3 Influence of Pd –Ag/HMOR catalysts on the amount of sulfur content

Sample catalysts	S in oil product $(\%wt)_{avg}$	S on spent catalyst (%wt)
1%Ag/HMOR	0.7455	0.4350
0.8Ag0.2Pd/HMOR	1.0205	0.5650
0.6Ag0.4Pd/HMOR	0.9720	0.6970
0.4Ag0.6Pd/HMOR	0.8970	0.6440
0.2Ag0.8Pd/HMOR	0.9160	0.4550
1%Pd/HMOR		0.5250

APPENDIX H Carbon Number Distribution

Table H1 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of maltene

No. carbon.	Non cat	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
4	0.136	0	0	0.0000000	0
5	1.352	0	0	0.0000584	0.001
6	2.193	0	0	0.0112219	0.05
7	3.353	0.051	0.021	0.2580716	0.648
8	4.805	1.346	0.974	1.6474180	2.882
9	6.407	6.892	6.412	4.7373504	6.566
10	7.9	13.992	14.459	8.2854868	9.868
11	8.978	17.007	18.085	10.6431674	11.471
12	9.415	15.666	16.537	11.2951606	11.386
13	9.167	12.466	12.866	10.6555722	10.264
14	8.374	9.207	9.243	9.3538944	8.732
15	7.268	6.568	6.408	7.8642230	7.181
16	6.072	4.626	4.391	6.4494518	5.798
17	4.939	3.257	3.012	5.2202403	4.64
18	3.95	2.307	2.082	4.2018509	3.704
19	3.129	1.65	1.456	3.3797642	2.961
20	2.468	1.195	1.032	2.7250722	2.377
21	1.947	0.875	0.742	2.2067875	1.918
22	1.54	0.649	0.54	1.7969645	1.558
23	1.224	0.488	0.398	1.4722759	1.274
24	0.977	0.371	0.298	1.2140143	1.049
25	0.785	0.285	0.225	1.0075007	0.87
26	0.635	0.221	0.172	0.8413495	0.726
27	0.516	0.173	0.133	0.7067777	0.609
28	0.422	0.137	0.103	0.5970217	0.514
29	0.347	0.109	0.081	0.5068686	0.437
30	0.287	0.087	0.064	0.4322914	0.372
31	0.238	0.07	0.051	0.3701677	0.319
32	0.199	0.057	0.041	0.3180668	0.274
33	0.166	0.046	0.033	0.2740863	0.236
34	0.14	0.038	0.027	0.2367298	0.204
35	0.117	0.031	0.022	0.2048125	0.176
36	0.099	0.026	0.018	0.1773897	0.153
37	0.083	0.021	0.014	0.1537030	0.132
38	0.07	0.018	0.012	0.1331373	0.115
39	0.059	0.015	0.01	0.1151890	0.099
40	0.05	0.012	0.008	0.0994408	0.086
41	0.042	0.01	0.006	0.0855420	0.074
42	0.035	0.008	0.005	0.0731924	0.063
43	0.029	0.007	0.004	0.0621303	0.054
44	0.024	0.005	0.003	0.0521210	0.045
45	0.02	0.004	0.003	0.0429478	0.037
46	0.016	0.003	0.002	0.0344029	0.03
47	0.012	0.003	0.002	0.0262776	0.023
48	0.008	0.002	0.001	0.0183517	0.016
49	0.005	0.001	0.001	0.0103802	0.009
50	0.001	0	0	0.0020752	0.002

Table H2 Influence of HMOR, KL, BETA, and Y catalysts on carbon number distribution of maltene

No. carbon.	Beta	KL	HMOR	Y
4				0
5	1.9457577	1.8756767	0.7291767	0
6	3.1608331	3.0318442	1.5998348	0
7	4.8702114	4.6696274	3.1720039	0.051
8	7.0467665	6.7958725	5.5820698	1.346
9	9.4289625	9.2119731	8.5498058	6.892
10	11.4494743	11.4020519	11.2354295	13.992
11	12.4068094	12.6212443	12.6462928	17.007
12	11.9143457	12.3314621	12.3654543	15.666
13	10.2207223	10.6624131	10.7839822	12.466
14	7.9988993	8.3165491	8.6518899	9.207
15	5.8661233	6.0203876	6.5710369	6.568
16	4.1342182	4.1615091	4.8330675	4.626
17	2.8558693	2.8101130	3.4992245	3.257
18	1.9604348	1.8833713	2.5213770	2.307
19	1.3491203	1.2654551	1.8207505	1.65
20	0.9356418	0.8574534	1.3232709	1.195
21	0.6558193	0.5877618	0.9702460	0.875
22	0.4652413	0.4081843	0.7185970	0.649
23	0.3341873	0.2873188	0.5378551	0.488
24	0.2430351	0.2049488	0.4068332	0.371
25	0.1788609	0.1480690	0.3108853	0.285
26	0.1331193	0.1082671	0.2398804	0.221
27	0.1001176	0.0800520	0.1867790	0.173
28	0.0760264	0.0598001	0.1466557	0.137
29	0.0582424	0.0450916	0.1160363	0.109
30	0.0449754	0.0342904	0.0924478	0.087
31	0.0349806	0.0262767	0.0741131	0.07
32	0.0273821	0.0202743	0.0597430	0.057
33	0.0215569	0.0157394	0.0483932	0.046
34	0.0170570	0.0122857	0.0393649	0.038
35	0.0135564	0.0096365	0.0321364	0.031
36	0.0108160	0.0075911	0.0263143	0.026
37	0.0086581	0.0060021	0.0215989	0.021
38	0.0069497	0.0047609	0.0177601	0.018
39	0.0055900	0.0037862	0.0146192	0.015
40	0.0045022	0.0030166	0.0120364	0.012
41	0.0036272	0.0024055	0.0099009	0.01
42	0.0029189	0.0019174	0.0081242	0.008
43	0.0023412	0.0015243	0.0066347	0.007
44	0.0018654	0.0012048	0.0053735	0.005
45	0.0014682	0.0009415	0.0042915	0.004
46	0.0011305	0.0007204	0.0033461	0.003
47	0.0008358	0.0005299	0.0024996	0.003
48	0.0005693	0.0003596	0.0017162	0.002
49	0.0003167	0.0001995	0.0009599	0.001
50	0.0000629	0.0000396	0.0001909	0

Table H3 Influence of different zeolites loaded with 1%Ag on carbon number distribution of maltene

No. carbon.	1%Ag/Y	1%Ag/Beta	1%Ag/KL	1%Ag/HMOR
4	0	0	0	0.002
5	0	0	0	0.11
6	0	0.003	0	0.711
7	0.021	0.228	0.107	2.266
8	0.974	2.355	2.007	4.555
9	6.412	7.717	8.398	6.768
10	14.459	13.009	15.133	8.242
11	18.085	14.998	17.164	8.807
12	16.537	13.96	15.191	8.634
13	12.866	11.538	11.811	7.999
14	9.243	8.946	8.607	7.143
15	6.408	6.716	6.092	6.233
16	4.391	4.973	4.272	5.362
17	3.012	3.671	3	4.577
18	2.082	2.72	2.123	3.893
19	1.456	2.029	1.518	3.309
20	1.032	1.527	1.099	2.817
21	0.742	1.161	0.805	2.405
22	0.54	0.892	0.598	2.061
23	0.398	0.692	0.449	1.774
24	0.298	0.542	0.342	1.533
25	0.225	0.429	0.263	1.332
26	0.172	0.342	0.204	1.162
27	0.133	0.275	0.16	1.018
28	0.103	0.223	0.126	0.895
29	0.081	0.182	0.101	0.79
30	0.064	0.15	0.081	0.7
31	0.051	0.124	0.065	0.622
32	0.041	0.103	0.053	0.554
33	0.033	0.085	0.043	0.494
34	0.027	0.071	0.035	0.441
35	0.022	0.06	0.029	0.394
36	0.018	0.05	0.024	0.352
37	0.014	0.042	0.02	0.314
38	0.012	0.036	0.016	0.28
39	0.01	0.03	0.014	0.249
40	0.008	0.025	0.011	0.221
41	0.006	0.021	0.009	0.195
42	0.005	0.018	0.008	0.171
43	0.004	0.015	0.006	0.148
44	0.003	0.012	0.005	0.127
45	0.003	0.01	0.004	0.106
46	0.002	0.008	0.003	0.086
47	0.002	0.006	0.002	0.067
48	0.001	0.004	0.002	0.047
49	0.001	0.002	0.001	0.027
50	0	0	0	0.005

Table H4 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of maltene

No. carbon.	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
4	0.002	0.007	0.009	0	0.014	
5	0.11	0.138	0.152	0	0.227	2.0566883
6	0.711	0.567	0.496	0.033	0.726	3.3879584
7	2.266	1.762	1.401	0.787	1.961	5.3122922
8	4.555	4.101	3.342	4.608	4.345	7.8469462
9	6.768	7.261	6.544	11.033	7.754	10.7114891
10	8.242	10.123	10.327	15.378	11.112	13.1379375
11	8.807	11.646	13.145	15.661	13.024	14.052171
12	8.634	11.604	13.824	13.375	12.935	12.8870164
13	7.999	10.451	12.503	10.384	11.352	10.2215989
14	7.143	8.803	10.161	7.678	9.16	7.2401351
15	6.233	7.109	7.712	5.553	7.014	4.7688743
16	5.362	5.604	5.628	3.989	5.215	3.0255537
17	4.577	4.362	4.03	2.872	3.825	1.8950393
18	3.893	3.38	2.867	2.083	2.795	1.189617
19	3.309	2.621	2.044	1.525	2.047	0.7547634
20	2.817	2.04	1.467	1.129	1.51	0.4860258
21	2.405	1.598	1.062	0.846	1.123	0.3182174
22	2.061	1.26	0.778	0.641	0.843	0.2119219
23	1.774	1.001	0.575	0.491	0.64	0.1435003
24	1.533	0.802	0.431	0.381	0.49	0.0987218
25	1.332	0.647	0.326	0.298	0.379	0.0689322
26	1.162	0.526	0.249	0.235	0.296	0.0487984
27	1.018	0.431	0.192	0.188	0.233	0.0349846
28	0.895	0.355	0.149	0.151	0.185	0.0253721
29	0.79	0.294	0.117	0.122	0.148	0.0185944
30	0.7	0.245	0.093	0.099	0.119	0.0137569
31	0.622	0.205	0.074	0.081	0.097	0.0102652
32	0.554	0.173	0.059	0.067	0.079	0.0077188
33	0.494	0.146	0.047	0.055	0.064	0.0058443
34	0.441	0.123	0.038	0.046	0.053	0.0044526
35	0.394	0.105	0.031	0.038	0.044	0.0034113
36	0.352	0.089	0.025	0.032	0.036	0.0026267
37	0.314	0.076	0.021	0.027	0.03	0.0020318
38	0.28	0.064	0.017	0.022	0.025	0.0015779
39	0.249	0.055	0.014	0.019	0.021	0.0012297
40	0.221	0.047	0.011	0.016	0.017	0.000961
41	0.195	0.039	0.009	0.013	0.014	0.0007525
42	0.171	0.033	0.007	0.011	0.012	0.0005896
43	0.148	0.028	0.006	0.009	0.01	0.0004614
44	0.127	0.023	0.005	0.007	0.008	0.0003595
45	0.106	0.019	0.004	0.006	0.006	0.0002773
46	0.086	0.015	0.003	0.005	0.005	0.0002099
47	0.067	0.011	0.002	0.004	0.004	0.000153
48	0.047	0.008	0.002	0.002	0.003	0.0001031
49	0.027	0.004	0.001	0.001	0.001	0.0000569
50	0.005	0.001	0	0	0	0.0000113

Table H5 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of saturated hydrocarbons

No. carbon.	Non cat	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
4	0.001716024	0.013882353	0.001238636	0.0000296	0
5	0.03946856	0.176684492	0.027869318	0.0019299	0.0024
6	0.196770791	0.423411765	0.1158125	0.0291713	0.0372
7	0.727022312	0.953465241	0.422375	0.2483615	0.294
8	1.954551724	2.014834225	1.329676136	1.1903412	1.3086
9	3.858766734	3.955208556	3.455176136	3.3821336	3.4818
10	5.78872211	7.008064171	6.972903409	6.2402925	6.0936
11	6.947610548	10.54680214	10.39215909	8.3114453	7.8066
12	7.054004057	12.38368984	11.37377841	8.8147841	8.0616
13	6.371026369	10.71906952	9.621107955	8.0501004	7.2354
14	5.328827586	7.044663102	6.823647727	6.698373	5.9562
15	4.250020284	3.875069519	4.379198864	5.2760601	4.662
16	3.298770791	1.964352941	2.684125	4.0329315	3.5514
17	2.52598783	0.976181818	1.622613636	3.0392396	2.6724
18	1.92537931	0.490299465	0.985335227	2.2805079	2.0046
19	1.468916836	0.251775401	0.6063125	1.7141887	1.5072
20	1.125711968	0.133144385	0.379022727	1.2954774	1.14
21	0.868308316	0.071935829	0.242153409	0.9864054	0.8688
22	0.674969574	0.040385027	0.157306818	0.757554	0.6684
23	0.529107505	0.023347594	0.104045455	0.5870881	0.5184
24	0.418137931	0.013251337	0.069982955	0.4591366	0.4062
25	0.33348073	0.008203209	0.0476875	0.3622668	0.321
26	0.267699797	0.005048128	0.033443182	0.2882606	0.2556
27	0.216791075	0.00315508	0.023534091	0.2311982	0.2052
28	0.176750507	0.001893048	0.016721591	0.1867961	0.1662
29	0.145290061	0.001262032	0.011767045	0.1519356	0.1356
30	0.119549696	0.000631016	0.008670455	0.1243301	0.111
31	0.098957404	0.000631016	0.006193182	0.1022898	0.0912
32	0.082369168	0.000631016	0.004954545	0.0845564	0.0756
33	0.069212982	0	0.003715909	0.0701847	0.063
34	0.057772819	0	0.002477273	0.058459	0.0522
35	0.04862069	0	0.001857955	0.0488325	0.0438
36	0.041184584	0	0.001238636	0.0408838	0.0366
37	0.034892495	0	0.001238636	0.0342851	0.0306
38	0.029172414	0	0.000619318	0.0287794	0.0258
39	0.024596349	0	0.000619318	0.0241626	0.0216
40	0.020592292	0	0.000619318	0.0202716	0.0186
41	0.017732252	0	0.000619318	0.0169741	0.0156
42	0.014872211	0	0.000619318	0.0141619	0.0126
43	0.01201217	0	0	0.0117447	0.0108
44	0.010296146	0	0	0.0096462	0.009
45	0.008008114	0	0	0.0078003	0.0072
46	0.006292089	0	0	0.0061477	0.0054
47	0.005148073	0	0	0.0046333	0.0042
48	0.003432049	0	0	0.0032029	0.003
49	0.001716024	0	0	0.0017994	0.0018
50	0.000572008	0	0	0.0003587	0.0006

Table H6 Influence of HMOR, KL, BETA, and Y catalysts on carbon number distribution of saturated hydrocarbon

No. carbon.	BETA	KL	HMOR	Y
4				0.013882353
5	0	0.0020066	0.0045761	0.176684492
6	0	0.0244991	0.0446917	0.423411765
7	0.01	0.2056218	0.3016242	0.953465241
8	0.31	1.0965932	1.3307935	2.014834225
9	2.77	3.5307918	3.7473405	3.955208556
10	8.02	6.9520129	6.9185084	7.008064171
11	12.08	9.0634826	9.0054333	10.54680214
12	12.56	8.7660394	9.0689568	12.38368984
13	10.66	7.0106274	7.7080694	10.71906952
14	8.14	5.0320091	5.9137145	7.044663102
15	5.89	3.4199955	4.2882466	3.875069519
16	4.17	2.2728961	3.0261836	1.964352941
17	2.93	1.5044343	2.1154821	0.976181818
18	2.06	1.0018039	1.4802967	0.490299465
19	1.46	0.6746874	1.0430108	0.251775401
20	1.05	0.4607187	0.7423747	0.133144385
21	0.76	0.3193046	0.534605	0.071935829
22	0.56	0.2246183	0.389735	0.040385027
23	0.42	0.1603133	0.2876232	0.023347594
24	0.32	0.1160029	0.2147987	0.013251337
25	0.24	0.0850289	0.1622311	0.008203209
26	0.18	0.0630747	0.1238282	0.005048128
27	0.14	0.0473058	0.0954437	0.00315508
28	0.11	0.0358367	0.0742275	0.001893048
29	0.09	0.0273962	0.0581993	0.001262032
30	0.07	0.021116	0.0459685	0.000631016
31	0.06	0.0163956	0.0365474	0.000631016
32	0.05	0.0128141	0.0292271	0.000631016
33	0.04	0.0100735	0.0234935	0
34	0.03	0.00796	0.0189695	0
35	0.02	0.0063184	0.015376	0
36	0.02	0.0050351	0.0125039	0
37	0.02	0.004026	0.0101955	0
38	0.01	0.0032281	0.0083303	0
39	0.01	0.0025939	0.0068155	0
40	0.01	0.0020871	0.0055791	0
41	0.01	0.00168	0.0045643	0
42	0.01	0.0013508	0.0037262	0
43	0.01	0.0010827	0.0030287	0
44	0	0.000862	0.0024425	0
45	0	0.0006781	0.0019433	0
46	0	0.0005218	0.0015102	0
47	0	0.0003856	0.0011251	0
48	0	0.0002626	0.0007709	0
49	0	0.0001461	0.0004306	0
50	0	0.000029	0.0000856	0

Table H7 Influence of different zeolites loaded with 1%Ag on carbon number distribution of saturated hydrocarbons

No. carbon.	1%Ag/Y	1%Ag/Beta	1%Ag/KL	1%Ag/HMOR
4	0.001238636	0	0	0
5	0.027869318	0	0	0
6	0.1158125	0	0	0
7	0.422375	0	0.000607427	0.010642674
8	1.329676136	0.030492114	0.092328912	0.449830334
9	3.455176136	1.077388013	1.570198939	3.131784062
10	6.972903409	5.540529968	6.040862069	7.857131105
11	10.39215909	10.20582334	10.14160212	11.02439075
12	11.37377841	10.96360883	10.84925464	11.19396401
13	9.621107955	8.972022082	9.156355438	9.525902314
14	6.823647727	6.433835962	6.84934748	7.378920308
15	4.379198864	4.345690852	4.834511936	5.449758355
16	2.684125	2.870776025	3.331737401	3.941336761
17	1.622613636	1.891640379	2.282710875	2.83237018
18	0.985335227	1.255258675	1.570806366	2.039845758
19	0.6063125	0.843050473	1.090938992	1.480041131
20	0.379022727	0.574268139	0.767180371	1.084133676
21	0.242153409	0.397526814	0.54668435	0.802457584
22	0.157306818	0.279511041	0.394220159	0.600956298
23	0.104045455	0.199328076	0.288527851	0.454796915
24	0.069982955	0.143990536	0.213814324	0.34837018
25	0.0476875	0.10559306	0.160360743	0.269614396
26	0.033443182	0.07792429	0.121485411	0.210724936
27	0.023534091	0.058725552	0.09293634	0.166025707
28	0.016721591	0.044608833	0.071676393	0.131969152
29	0.011767045	0.033880126	0.055883289	0.105717224
30	0.008670455	0.025974763	0.043734748	0.085141388
31	0.006193182	0.020328076	0.034623342	0.068822622
32	0.004954545	0.015810726	0.027941645	0.056051414
33	0.003715909	0.012422713	0.021867374	0.046118252
34	0.002477273	0.009599369	0.017615385	0.037604113
35	0.001857955	0.007905363	0.014578249	0.031218509
36	0.001238636	0.006211356	0.011541114	0.025542416
37	0.001238636	0.005082019	0.009718833	0.021285347
38	0.000619318	0.003952681	0.007896552	0.017737789
39	0.000619318	0.003388013	0.006074271	0.014899743
40	0.000619318	0.002823344	0.004859416	0.012061697
41	0.000619318	0.002258675	0.004251989	0.009933162
42	0.000619318	0.001694006	0.003644562	0.008514139
43	0	0.001129338	0.003037135	0.007095116
44	0	0.001129338	0.002429708	0.005676093
45	0	0.000564669	0.001822281	0.004257069
46	0	0.000564669	0.001214854	0.003547558
47	0	0.000564669	0.001214854	0.002838046
48	0	0.000564669	0.000607427	0.002128535
49	0	0	0.000607427	0.000709512
50	0	0	0	0

Table H8 Influence of addition of Pd –Ag/HMOR catalysts on carbon number distribution of saturated hydrocarbons

No. carbon.	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
4	0	0	0.001	0	0	
5	0	0.001	0.012	0	0	0.0000572
6	0	0.03	0.059	0	0	0.0003456
7	0.010642674	0.334	0.247	0	0	0.1116272
8	0.449830334	1.896	0.897	0.062	0	1.3536852
9	3.131784062	5.867	2.723	1.524	0.119	4.4518323
10	7.857131105	11.047	6.58	8.429	2.288	7.2503741
11	11.02439075	14.406	12.052	17.492	9.481	7.9767132
12	11.19396401	14.647	16.382	20.213	16.562	6.5029958
13	9.525902314	12.729	16.929	16.973	18.063	4.036191
14	7.378920308	10.078	14.148	12.129	15.366	2.0180178
15	5.449758355	7.579	10.28	8.043	11.515	0.9300056
16	3.941336761	5.555	6.9	5.181	8.117	0.4716379
17	2.83237018	4.032	4.46	3.319	5.576	0.2821406
18	2.039845758	2.925	2.848	2.141	3.805	0.180676
19	1.480041131	2.132	1.823	1.399	2.605	0.1109716
20	1.084133676	1.568	1.179	0.929	1.8	0.0640702
21	0.802457584	1.164	0.773	0.627	1.259	0.0357392
22	0.600956298	0.873	0.514	0.43	0.891	0.0197872
23	0.454796915	0.662	0.348	0.299	0.639	0.0110436
24	0.34837018	0.508	0.239	0.212	0.465	0.0062582
25	0.269614396	0.393	0.166	0.152	0.342	0.0036104
26	0.210724936	0.307	0.117	0.11	0.254	0.0021215
27	0.166025707	0.242	0.084	0.081	0.191	0.001269
28	0.131969152	0.193	0.061	0.06	0.145	0.0007719
29	0.105717224	0.154	0.044	0.045	0.111	0.0004769
30	0.085141388	0.124	0.033	0.034	0.086	0.0002989
31	0.068822622	0.101	0.024	0.026	0.067	0.0001899
32	0.056051414	0.082	0.018	0.02	0.052	0.0001221
33	0.046118252	0.067	0.014	0.015	0.041	0.0000794
34	0.037604113	0.055	0.01	0.012	0.033	0.0000522
35	0.031218509	0.046	0.008	0.009	0.026	0.0000346
36	0.025542416	0.038	0.006	0.007	0.021	0.0000232
37	0.021285347	0.031	0.005	0.006	0.017	0.0000157
38	0.017737789	0.026	0.004	0.005	0.013	0.0000107
39	0.014899743	0.022	0.003	0.004	0.011	0.0000074
40	0.012061697	0.018	0.002	0.003	0.009	0.0000051
41	0.009933162	0.015	0.002	0.002	0.007	0.0000036
42	0.008514139	0.012	0.001	0.002	0.006	0.0000025
43	0.007095116	0.01	0.001	0.001	0.004	0.0000018
44	0.005676093	0.008	0.001	0.001	0.004	0.0000013
45	0.004257069	0.007	0.001	0.001	0.003	0.0000009
46	0.003547558	0.005	0	0.001	0.002	0.0000007
47	0.002838046	0.004	0	0.001	0.002	0.0000005
48	0.002128535	0.003	0	0	0.001	0.0000003
49	0.000709512	0.001	0	0	0.001	0.0000002
50	0	0	0	0	0	0

Table H9 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of mono-aromatics

No. carbon.	Non cat	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
4	0.050344828	0.00157754	0.072710227	0.0252206	0
5	0.080699797	0.004259358	0.126957386	0.0468825	0
6	0.124973631	0.011516043	0.212610795	0.0833983	0
7	0.187312373	0.028395722	0.342423295	0.1420401	0
8	0.272158215	0.065941176	0.530670455	0.2325559	0.000317647
9	0.384545639	0.144187166	0.790105114	0.365467	0.003017647
10	0.529212982	0.296735294	1.124153409	0.5511404	0.027158824
11	0.710158215	0.571227273	1.514542614	0.7942178	0.154852941
12	0.929158215	1.014200535	1.902838068	1.0844871	0.5589
13	1.181622718	1.616032086	2.186446023	1.3860516	1.292982353
14	1.448450304	2.219441176	2.256872159	1.632533	2.036911765
15	1.68048073	2.523275401	2.074715909	1.7468768	2.384576471
16	1.789906694	2.336179144	1.710213068	1.6849857	2.267523529
17	1.685219067	1.801393048	1.290321023	1.4706877	1.885711765
18	1.364344828	1.216914439	0.915159091	1.1787163	1.4472
19	0.953294118	0.760216578	0.625650568	0.8861261	1.062211765
20	0.59525355	0.457802139	0.420082386	0.6384069	0.762670588
21	0.347527383	0.272914439	0.280943182	0.4490201	0.543335294
22	0.197085193	0.163433155	0.1884375	0.3122407	0.387211765
23	0.111054767	0.098911765	0.127528409	0.2166189	0.277305882
24	0.063079108	0.060893048	0.087176136	0.1508596	0.200117647
25	0.03627789	0.038018717	0.060338068	0.1056791	0.1458
26	0.021322515	0.024136364	0.042255682	0.0747335	0.107205882
27	0.012586207	0.015617647	0.029883523	0.0532264	0.079570588
28	0.007699797	0.010254011	0.021318182	0.0383725	0.059558824
29	0.004738337	0.006783422	0.015417614	0.027851	0.044947059
30	0.00296146	0.004574866	0.011230114	0.0204241	0.034147059
31	0.001776876	0.00315508	0.008375	0.0150086	0.026205882
32	0.001184584	0.002050802	0.006090909	0.0111404	0.020170588
33	0.000740365	0.001419786	0.004568182	0.0083553	0.015723529
34	0.000444219	0.000946524	0.003426136	0.0063438	0.012229412
35	0.000296146	0.00078877	0.002664773	0.0047966	0.009529412
36	0.000148073	0.000473262	0.001903409	0.0037135	0.007623529
37	0.000148073	0.000315508	0.001522727	0.0027851	0.006035294
38	0.000148073	0.000315508	0.001142045	0.0021662	0.004764706
39	0	0.000157754	0.000951705	0.001702	0.003811765
40	0	0.000157754	0.000761364	0.0012378	0.003017647
41	0	0.000157754	0.000571023	0.0009284	0.002382353
42	0	0	0.000380682	0.0007736	0.001905882
43	0	0	0.000380682	0.0006189	0.001588235
44	0	0	0.000190341	0.0004642	0.001270588
45	0	0	0.000190341	0.0003095	0.000952941
46	0	0	0.000190341	0.0003095	0.000635294
47	0	0	0.000190341	0.0001547	0.000476471
48	0	0	0	0.0001547	0.000317647
49	0	0	0	0	0.000158824
50	0	0	0	0	0

Table H10 Influence of HMOR, KL, BETA, and Y catalysts on carbon number distribution of mono-aromatics

No. carbon.	BETA	KL	HMOR	Y
4				0.00157754
5	0	0	0	0.004259358
6	0.17	0.000402	0.0007076	0.011516043
7	0.17	0.0028908	0.0019074	0.028395722
8	0.16	0.0179305	0.0048048	0.065941176
9	0.16	0.0941958	0.0113623	0.144187166
10	0.15	0.3992412	0.0253353	0.296735294
11	0.14	1.2495622	0.0534864	0.571227273
12	0.14	2.601663	0.1072768	1.014200535
13	0.13	3.4275603	0.2046604	1.616032086
14	0.13	3.022965	0.3691708	2.219441176
15	0.12	2.0316353	0.6129375	2.523275401
16	0.12	1.1816098	0.8698119	2.336179144
17	0.11	0.6476939	0.9256736	1.801393048
18	0.11	0.3504619	0.6672021	1.216914439
19	0.11	0.1914107	0.3421351	0.760216578
20	0.1	0.1065572	0.1457439	0.457802139
21	0.1	0.0606827	0.0585264	0.272914439
22	0.1	0.0353768	0.0235626	0.163433155
23	0.09	0.0210985	0.0097298	0.098911765
24	0.09	0.0128559	0.0041477	0.060893048
25	0.08	0.007991	0.001826	0.038018717
26	0.06	0.0050589	0.0008288	0.024136364
27	0.04	0.0032566	0.0003869	0.015617647
28	0.02	0.0021285	0.0001853	0.010254011
29	0.01	0.0014105	0.0000909	0.006783422
30	0	0.0009465	0.0000455	0.004574866
31	0	0.0006424	0.0000233	0.00315508
32	0	0.0004406	0.0000121	0.002050802
33	0	0.000305	0.0000064	0.001419786
34	0	0.000213	0.0000034	0.000946524
35	0	0.00015	0.0000019	0.00078877
36	0	0.0001064	0.000001	0.000473262
37	0	0.0000761	0.0000006	0.000315508
38	0	0.0000547	0.0000003	0.000315508
39	0	0.0000396	0.0000002	0.000157754
40	0	0.0000289	0.0000001	0.000157754
41	0	0.0000212	0.0000001	0.000157754
42	0	0.0000156	0	0
43	0	0.0000115	0	0
44	0	0.0000085	0	0
45	0	0.0000063	0	0
46	0	0.0000046	0	0
47	0	0.0000032	0	0
48	0	0.0000021	0	0
49	0	0.0000012	0	0
50	0	0.0000002	0	0

Table H11 Influence of different zeolites loaded with 1%Ag on carbon number distribution of mono-aromatics

No. carbon.	1%Ag/Y	1%Ag/BETA	1%Ag/KL	1%Ag/HMOR
4	0.072710227	0	0.000872679	0.086521851
5	0.126957386	0	0.001994695	0.19740617
6	0.212610795	0	0.004737401	0.340372751
7	0.342423295	0.000132492	0.010472149	0.480732648
8	0.530670455	0.000397476	0.021692308	0.589511568
9	0.790105114	0.001324921	0.042761273	0.653976864
10	1.124153409	0.003974763	0.080535809	0.675632391
11	1.514542614	0.011195584	0.144864721	0.663902314
12	1.902838068	0.029413249	0.248713528	0.62981491
13	2.186446023	0.071744479	0.407291777	0.582894602
14	2.256872159	0.161176656	0.632068966	0.530460154
15	2.074715909	0.328182965	0.91930504	0.477524422
16	1.710213068	0.586608833	1.23072679	0.426794344
17	1.290321023	0.882264984	1.484427056	0.379974293
18	0.915159091	1.074974763	1.583164456	0.337766067
19	0.625650568	1.050198738	1.483055703	0.300269923
20	0.420082386	0.845962145	1.232970822	0.26718509
21	0.280943182	0.592504732	0.931896552	0.238311054
22	0.1884375	0.381047319	0.659122016	0.213046272
23	0.127528409	0.234577287	0.447809019	0.191089974
24	0.087176136	0.142031546	0.298082228	0.171940874
25	0.060338068	0.085921136	0.196851459	0.155197943
26	0.042255682	0.052334385	0.130153846	0.140660668
27	0.029883523	0.032195584	0.086519894	0.127827763
28	0.021318182	0.020072555	0.057970822	0.116498715
29	0.015417614	0.012652997	0.039145889	0.106372751
30	0.011230114	0.008082019	0.026679045	0.097449871
31	0.008375	0.005233438	0.01832626	0.089429306
32	0.006090909	0.003444795	0.01271618	0.08211054
33	0.004568182	0.002252366	0.008976127	0.075493573
34	0.003426136	0.001523659	0.00635809	0.069478149
35	0.002664773	0.000993691	0.004488064	0.063863753
36	0.001903409	0.000662461	0.003241379	0.058650386
37	0.001522727	0.000463722	0.0023687	0.053838046
38	0.001142045	0.00033123	0.00162069	0.049226221
39	0.000951705	0.000198738	0.001246684	0.044915167
40	0.000761364	0.000132492	0.000872679	0.04070437
41	0.000571023	0.000132492	0.000623342	0.036694087
42	0.000380682	6.62E-05	0.000498674	0.032784062
43	0.000380682	6.62E-05	0.000374005	0.028974293
44	0.000190341	6.62E-05	0.000249337	0.025264781
45	0.000190341	0	0.000249337	0.021455013
46	0.000190341	0	0.000124668	0.017645244
47	0.000190341	0	0.000124668	0.013835476
48	0	0	0.000124668	0.009825193
49	0	0	0	0.005614396
50	0	0	0	0.001102828

Table H12 Influence of addition of Pd –Ag/HMOR catalysts on carbon number distribution of mono-aromatics

No. carbon.	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
4	0.086521851	0	0	0	0	
5	0.19740617	0	0	0	0	0
6	0.340372751	0	0.002	0	0.001	0.0056834
7	0.480732648	0	0.025	0	0.013	0.1770595
8	0.589511568	0.001	0.214	0.009	0.122	0.4689679
9	0.653976864	0.075	1.106	0.467	0.72	0.738777
10	0.675632391	1.224	3.505	3.651	2.661	1.0911747
11	0.663902314	5.602	7.293	9.945	6.349	1.6917126
12	0.62981491	11.665	10.866	14.788	10.484	2.5124013
13	0.582894602	15.169	12.67	15.64	13.052	3.1785102
14	0.530460154	15.021	12.477	13.701	13.3	3.2046104
15	0.477524422	12.755	11.002	10.837	11.865	2.5605637
16	0.426794344	9.955	9.056	8.13	9.737	1.6673346
17	0.379974293	7.437	7.157	5.947	7.605	0.8989294
18	0.337766067	5.444	5.532	4.312	5.782	0.4007867
19	0.300269923	3.959	4.232	3.127	4.341	0.1519525
20	0.26718509	2.882	3.229	2.28	3.247	0.0523551
21	0.238311054	2.111	2.469	1.676	2.434	0.0174862
22	0.213046272	1.559	1.897	1.245	1.833	0.0058911
23	0.191089974	1.162	1.467	0.934	1.391	0.00204
24	0.171940874	0.875	1.143	0.708	1.064	0.0007312
25	0.155197943	0.665	0.897	0.542	0.82	0.0002717
26	0.140660668	0.51	0.71	0.419	0.638	0.0001045
27	0.127827763	0.395	0.566	0.327	0.5	0.0000416
28	0.116498715	0.309	0.454	0.257	0.395	0.000017
29	0.106372751	0.243	0.367	0.204	0.314	0.0000072
30	0.097449871	0.192	0.298	0.163	0.252	0.0000031
31	0.089429306	0.153	0.244	0.131	0.203	0.0000014
32	0.08211054	0.123	0.2	0.106	0.164	0.0000006
33	0.075493573	0.099	0.165	0.086	0.133	0.0000003
34	0.069478149	0.08	0.136	0.07	0.109	0.0000001
35	0.063863753	0.065	0.113	0.057	0.089	0.0000001
36	0.058650386	0.053	0.094	0.047	0.073	0
37	0.053838046	0.043	0.078	0.038	0.06	0
38	0.049226221	0.036	0.065	0.032	0.05	0
39	0.044915167	0.029	0.055	0.026	0.041	0
40	0.04070437	0.024	0.045	0.022	0.034	0
41	0.036694087	0.02	0.038	0.018	0.028	0
42	0.032784062	0.016	0.031	0.015	0.023	0
43	0.028974293	0.013	0.026	0.012	0.019	0
44	0.025264781	0.011	0.021	0.01	0.015	0
45	0.021455013	0.008	0.017	0.008	0.012	0
46	0.017645244	0.007	0.013	0.006	0.01	0
47	0.013835476	0.005	0.01	0.004	0.007	0
48	0.009825193	0.003	0.007	0.003	0.005	0
49	0.005614396	0.002	0.004	0.002	0.003	0
50	0.001102828	0	0.001	0	0.001	0

Table H13 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of di-aromatics

No. carbon.	Non cat	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
4	0.006750507	0.008839572	0.139133523	0.2001834	0
5	0.013371197	0.014965241	0.210582386	0.2204011	0
6	0.025184584	0.024270053	0.289346591	0.2400688	0
7	0.045306288	0.038149733	0.363849432	0.2589799	0
8	0.078279919	0.05792246	0.423366477	0.2767908	0
9	0.130206897	0.085294118	0.461079545	0.2932951	0
10	0.208486815	0.121970588	0.475426136	0.3083553	0
11	0.322855984	0.169657754	0.469176136	0.3218338	0.0001
12	0.484089249	0.229673797	0.447443182	0.3335244	0.004
13	0.703221095	0.302716578	0.415696023	0.3431519	0.0549
14	0.986352941	0.387855615	0.378835227	0.3505788	0.278
15	1.322320487	0.481368984	0.340553977	0.355255	0.7014
16	1.653874239	0.575425134	0.303267045	0.3566304	1.1141
17	1.850547667	0.656919786	0.268465909	0.3538797	1.3155
18	1.758507099	0.709181818	0.236860795	0.3462464	1.2912
19	1.374247465	0.717245989	0.208664773	0.3329054	1.1319
20	0.897687627	0.675606952	0.183877841	0.3133066	0.9277
21	0.517971602	0.592871658	0.162286932	0.2876562	0.7312
22	0.280275862	0.488037433	0.143536932	0.2569857	0.5644
23	0.148251521	0.381264706	0.127272727	0.2232206	0.4312
24	0.078539554	0.286510695	0.113210227	0.1885616	0.3284
25	0.042060852	0.209823529	0.100994318	0.1552779	0.2504
26	0.022977688	0.151280749	0.090411932	0.1251576	0.1916
27	0.01272211	0.108245989	0.081178977	0.0990946	0.1473
28	0.007269777	0.077229947	0.073153409	0.0774327	0.1139
29	0.004154158	0.055208556	0.066051136	0.0599656	0.0885
30	0.002466531	0.039545455	0.059801136	0.0461433	0.0692
31	0.001427992	0.028534759	0.054190341	0.0354155	0.0544
32	0.000908722	0.020625668	0.04921875	0.0270946	0.043
33	0.00051927	0.015042781	0.044744318	0.0207679	0.0341
34	0.000389452	0.011010695	0.040696023	0.0159542	0.0272
35	0.000259635	0.008141711	0.037073864	0.0122407	0.0218
36	0.000129817	0.005970588	0.033664773	0.0094212	0.0175
37	0.000129817	0.004497326	0.030539773	0.0072894	0.0141
38	0	0.003334225	0.027698864	0.005639	0.0113
39	0	0.002481283	0.025	0.0044011	0.0092
40	0	0.001860963	0.022443182	0.0033696	0.0074
41	0	0.001473262	0.020028409	0.0026819	0.006
42	0	0.001085561	0.017755682	0.002063	0.0048
43	0	0.000852941	0.015625	0.0015817	0.0039
44	0	0.000620321	0.013494318	0.0012378	0.0031
45	0	0.000465241	0.011363636	0.0009628	0.0025
46	0	0.000387701	0.009303977	0.0006877	0.0019
47	0	0.00023262	0.007244318	0.0005501	0.0014
48	0	0.00015508	0.005113636	0.0003438	0.001
49	0	7.75E-05	0.002911932	0.0002063	0.0005
50	0	0	0.000568182	0.0000688	0.0001

Table H14 Influence of HMOR, KL, BETA, and Y on carbon number distribution of di-aromatics

No. carbon.	BETA	KL	HMOR	Y
4				0.008839572
5	0	0	0	0.014965241
6	0.16	0	0	0.024270053
7	0.2	0	0.4268158	0.038149733
8	0.25	0.0005334	0.3645016	0.05792246
9	0.3	0.0033698	0.3115581	0.085294118
10	0.33	0.0184147	0.2668709	0.121970588
11	0.33	0.0846107	0.2292852	0.169657754
12	0.27	0.3056056	0.1977165	0.229673797
13	0.18	0.7780938	0.1711991	0.302716578
14	0.11	1.262054	0.1488992	0.387855615
15	0.05	1.2936453	0.1301111	0.481368984
16	0.03	0.931526	0.1142441	0.575425134
17	0.01	0.5455371	0.1008077	0.656919786
18	0.01	0.2911331	0.0893959	0.709181818
19	0	0.1511125	0.079673	0.717245989
20	0	0.078738	0.0713617	0.675606952
21	0	0.0417565	0.0642326	0.592871658
22	0	0.0226555	0.058095	0.488037433
23	0	0.0125913	0.0527907	0.381264706
24	0	0.0071643	0.0481873	0.286510695
25	0	0.0041678	0.044174	0.209823529
26	0	0.0024749	0.0406575	0.151280749
27	0	0.0014976	0.0375593	0.108245989
28	0	0.0009219	0.0348126	0.077229947
29	0	0.0005764	0.0323609	0.055208556
30	0	0.0003656	0.030156	0.039545455
31	0	0.0002349	0.0281565	0.028534759
32	0	0.0001527	0.0263272	0.020625668
33	0	0.0001004	0.0246379	0.015042781
34	0	0.0000667	0.0230624	0.011010695
35	0	0.0000447	0.0215783	0.008141711
36	0	0.0000303	0.0201662	0.005970588
37	0	0.0000207	0.0188091	0.004497326
38	0	0.0000142	0.0174922	0.003334225
39	0	0.0000099	0.0162023	0.002481283
40	0	0.0000069	0.0149275	0.001860963
41	0	0.0000049	0.0136567	0.001473262
42	0	0.0000035	0.0123792	0.001085561
43	0	0.0000025	0.0110846	0.000852941
44	0	0.0000018	0.009762	0.000620321
45	0	0.0000013	0.0083996	0.000465241
46	0	0.0000009	0.0069846	0.000387701
47	0	0.0000006	0.0055019	0.00023262
48	0	0.0000004	0.0039342	0.00015508
49	0	0.0000002	0.0022603	7.75E-05
50	0	0	0.000455	0

Table H15 Influence of different zeolites loaded with 1%Ag on carbon number distribution of di-aromatics

No. carbon.	1%Ag/Y	1%Ag/Beta	1%Ag/KL	1%Ag/HMOR
4	0.139133523	0	0.115543767	0.066915167
5	0.210582386	0.000501577	0.316710875	0.137542416
6	0.289346591	2.34988959	0.598249337	0.268539846
7	0.363849432	14.27555836	0.877559682	0.499861183
8	0.423366477	0.093126183	1.084297082	0.886796915
9	0.461079545	0.000167192	1.191564987	1.478874036
10	0.475426136	0	1.208912467	2.161701799
11	0.469176136	0	1.16132626	2.26085347
12	0.447443182	0	1.075225464	1.334395887
13	0.415696023	0	0.971140584	0.476318766
14	0.378835227	0	0.863076923	0.138812339
15	0.340553977	0	0.759310345	0.039953728
16	0.303267045	0	0.664297082	0.012015424
17	0.268465909	0	0.579628647	0.003907455
18	0.236860795	0	0.505623342	0.001269923
19	0.208664773	0	0.441485411	0.000488432
20	0.183877841	0	0.386578249	0.000195373
21	0.162286932	0	0.339310345	9.77E-05
22	0.143536932	0	0.299045093	0
23	0.127272727	0	0.264509284	0
24	0.113210227	0	0.235066313	0
25	0.100994318	0	0.209602122	0
26	0.090411932	0	0.187639257	0
27	0.081178977	0	0.168700265	0
28	0.073153409	0	0.152148541	0
29	0.066051136	0	0.137506631	0
30	0.059801136	0	0.124774536	0
31	0.054190341	0	0.11331565	0
32	0.04921875	0	0.103289125	0
33	0.044744318	0	0.094058355	0
34	0.040696023	0	0.085782493	0
35	0.037073864	0	0.078302387	0
36	0.033664773	0	0.071458886	0
37	0.030539773	0	0.064933687	0
38	0.027698864	0	0.059045093	0
39	0.025	0	0.053474801	0
40	0.022443182	0	0.048222812	0
41	0.020028409	0	0.043129973	0
42	0.017755682	0	0.038355438	0
43	0.015625	0	0.033740053	0
44	0.013494318	0	0.02928382	0
45	0.011363636	0	0.024827586	0
46	0.009303977	0	0.020371353	0
47	0.007244318	0	0.015915119	0
48	0.005113636	0	0.011299735	0
49	0.002911932	0	0.006366048	0
50	0.000568182	0	0.00127321	0

Table H16 Influence of addition of Pd –Ag/HMOR catalysts on carbon number distribution of di-aromatics

No. carbon.	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
4	0.066915167	3.443	4.769	0	0.002	
5	0.137542416	3.834	4.803	0	0.025	0
6	0.268539846	4.22	4.814	0	0.166	0.1396439
7	0.499861183	4.593	4.804	0	0.61	1.8040597
8	0.886796915	4.948	4.774	0.026	1.482	2.0791606
9	1.478874036	5.275	4.727	0.507	2.687	1.4941409
10	2.161701799	5.565	4.664	2.747	3.964	1.0540191
11	2.26085347	5.805	4.59	6.853	5.052	0.8164375
12	1.334395887	5.982	4.506	10.641	5.803	0.6350764
13	0.476318766	6.075	4.415	12.4	6.188	0.4467327
14	0.138812339	6.067	4.319	12,158	6.259	0.2769065
15	0.039953728	5.937	4.22	10.753	6.097	0.1650596
16	0.012015424	5.675	4.121	8.951	5.782	0.1100626
17	0.003907455	5.281	4.022	7.199	5.383	0.0867908
18	0.001269923	4.777	3.927	5.686	4.947	0.0729228
19	0.000488432	4.196	3.835	4.455	4.508	0.0582876
20	0.000195373	3.586	3.748	3.485	4.086	0.0433722
21	9.77E-05	2.989	3.667	2.732	3.692	0.0308672
22	0	2.441	3.59	2.152	3.333	0.0215883
23	0	1.962	3.515	1.705	3.008	0.0150773
24	0	1.559	3.426	1.36	2.717	0.0105976
25	0	1.23	3.278	1.093	2.458	0.007522
26	0	0.966	2.949	0.884	2.227	0.0053975
27	0	0.757	2.27	0.72	2.022	0.0039159
28	0	0.594	1.33	0.59	1.839	0.002871
29	0	0.467	0.585	0.486	1.676	0.0021258
30	0	0.367	0.216	0.403	1.529	0.0015884
31	0	0.29	0.075	0.335	1.398	0.0011967
32	0	0.23	0.026	0.28	1.278	0.0009084
33	0	0.182	0.009	0.235	1.17	0.0006942
34	0	0.145	0.003	0.198	1.07	0.0005338
35	0	0.116	0.001	0.167	0.979	0.0004127
36	0	0.093	0	0.141	0.894	0.0003206
37	0	0.075	0	0.12	0.816	0.0002502
38	0	0.06	0	0.101	0.742	0.000196
39	0	0.048	0	0.086	0.673	0.000154
40	0	0.039	0	0.072	0.607	0.0001213
41	0	0.032	0	0.061	0.544	0.0000957
42	0	0.025	0	0.051	0.484	0.0000756
43	0	0.02	0	0.043	0.426	0.0000595
44	0	0.016	0	0.035	0.369	0.0000467
45	0	0.013	0	0.029	0.313	0.0000362
46	0	0.01	0	0.023	0.257	0.0000275
47	0	0.007	0	0.017	0.2	0.0000202
48	0	0.005	0	0.012	0.142	0.0000136
49	0	0.003	0	0.007	0.081	0.0000075
50	0	0.001	0	0.001	0.016	0.0000015

Table H17 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of poly-aromatics

No. carbon.	Non cat	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
4	0	0.028957219	0	0.0176819	0.020779412
5	0	0.22302139	0.000105114	0.1402264	0.168352941
6	0	0.244561497	5.440366477	0.160745	0.199852941
7	0	0.265491979	5.070051136	0.1818309	0.233470588
8	0	0.285406417	0.000840909	0.203106	0.268941176
9	0	0.304203209	0	0.2244756	0.305735294
10	0.00011359	0.321679144	0	0.2455616	0.343323529
11	0.000908722	0.337631016	0	0.2659857	0.381441176
12	0.007383367	0.352160428	0	0.2858424	0.419426471
13	0.044073022	0.365165775	0	0.3047536	0.457147059
14	0.194239351	0.376748663	0	0.3227192	0.494073529
15	0.59441785	0.387010695	0	0.3398338	0.530205882
16	1.233476673	0.396053476	0	0.3559083	0.565147059
17	1.778709939	0.404181818	0	0.3712264	0.598897059
18	1.907407708	0.411497326	0	0.3856934	0.631058824
19	1.655805274	0.418101604	0	0.3994986	0.660970588
20	1.256535497	0.424299465	0	0.4126418	0.687705882
21	0.882709939	0.430294118	0	0.4252178	0.709279412
22	0.595894523	0.436085561	0	0.4368481	0.722911765
23	0.395634888	0.441775401	0	0.4469656	0.724367647
24	0.261711968	0.447363636	0	0.4546246	0.708617647
25	0.173793103	0.452037433	0	0.4576504	0.670764706
26	0.11631643	0.454374332	0	0.4529226	0.608691176
27	0.078604462	0.449903743	0	0.4363754	0.525573529
28	0.053614604	0.429989305	0	0.4037536	0.430411765
29	0.037030426	0.381117647	0	0.3535444	0.334852941
30	0.02578499	0.296074866	0	0.2895301	0.249352941
31	0.018174442	0.192743316	0	0.2208825	0.179338235
32	0.0128357	0.105973262	0	0.1579083	0.126
33	0.009200811	0.051919786	0	0.1071318	0.087088235
34	0.006588235	0.024080214	0	0.0701605	0.059691176
35	0.004770791	0.010973262	0	0.0450086	0.040897059
36	0.003521298	0.00497861	0	0.0285559	0.027926471
37	0.002612576	0.002336898	0	0.0180602	0.019191176
38	0.001931034	0.001117647	0	0.0114413	0.013235294
39	0.001363083	0.000508021	0	0.0073754	0.009132353
40	0.001022312	0.000304813	0	0.0047278	0.006352941
41	0.000795132	0.000101604	0	0.0031203	0.0045
42	0.000567951	0.000101604	0	0.0020802	0.003176471
43	0.000454361	0	0	0.0013238	0.00225
44	0.000340771	0	0	0.0009456	0.001588235
45	0.000227181	0	0	0.0006619	0.001191176
46	0.000227181	0	0	0.0003782	0.000794118
47	0.00011359	0	0	0.0002837	0.000529412
48	0.00011359	0	0	0.0001891	0.000397059
49	0	0	0	0.0000946	0.000132353
50	0	0	0	0	0

Table H8 Influence of HMOR, KL, BETA, and Y on carbon number distribution of poly-aromatics

No. carbon.	Beta	KL	HMOR	Y
4				0.028957219
5	0	0	0	0.22302139
6	0	0	0	0.244561497
7	0	0	0.3158937	0.265491979
8	0	0.0000096	0.2478704	0.285406417
9	0.01	0.0001208	0.1951989	0.304203209
10	0.02	0.0012354	0.1546074	0.321679144
11	0.05	0.0100076	0.1233258	0.337631016
12	0.13	0.0604842	0.0991475	0.352160428
13	0.26	0.2508246	0.0803692	0.365165775
14	0.42	0.6628127	0.0656975	0.376748663
15	0.56	1.1001929	0.0541582	0.387010695
16	0.6	1.2242833	0.0450187	0.396053476
17	0.55	1.0230624	0.0377282	0.404181818
18	0.46	0.7182551	0.0318709	0.411497326
19	0.35	0.4602075	0.0271313	0.418101604
20	0.25	0.2832624	0.0232693	0.424299465
21	0.18	0.172363	0.0201004	0.430294118
22	0.13	0.1052581	0.0174824	0.436085561
23	0.09	0.0649904	0.0153049	0.441775401
24	0.06	0.040706	0.0134813	0.447363636
25	0.05	0.0258918	0.0119437	0.452037433
26	0.03	0.0167239	0.0106382	0.454374332
27	0.02	0.0109624	0.009522	0.449903743
28	0.02	0.0072856	0.0085607	0.429989305
29	0.01	0.0049041	0.0077267	0.381117647
30	0.01	0.00334	0.0069975	0.296074866
31	0.01	0.0022993	0.0063551	0.192743316
32	0.01	0.0015985	0.0057847	0.105973262
33	0	0.0011213	0.0052741	0.051919786
34	0	0.0007931	0.0048135	0.024080214
35	0	0.0005654	0.0043945	0.010973262
36	0	0.0004059	0.0040106	0.00497861
37	0	0.0002934	0.0036559	0.002336898
38	0	0.0002135	0.0033259	0.001117647
39	0	0.0001563	0.0030163	0.000508021
40	0	0.0001151	0.0027237	0.000304813
41	0	0.0000852	0.002445	0.000101604
42	0	0.0000633	0.0021773	0.000101604
43	0	0.0000472	0.0019179	0
44	0	0.0000352	0.0016641	0
45	0	0.0000261	0.001413	0
46	0	0.0000191	0.0011616	0
47	0	0.0000135	0.0009064	0
48	0	0.0000089	0.0006435	0
49	0	0.0000049	0.000368	0
50	0	0.000001	0.0000739	0

Table H19 Influence of different zeolites loaded with 1%Ag on carbon number distribution of poly-aromatics

No. carbon.	1%Ag/Y	1%Ag/Beta	1%Ag/KL	1%Ag/HMOR
4	0	0	0.047206897	0.020514139
5	0.000105114	0	0.401013263	0.208920308
6	5.440366477	0	0.486005305	0.357069409
7	5.070051136	0.000138801	0.543517241	0.57848329
8	0.000840909	0.000416404	0.573058355	0.872390746
9	0	0.000832808	0.578554377	1.176940874
10	0	0.001943218	0.565697613	1.335347044
11	0	0.004302839	0.540474801	1.203470437
12	0	0.008744479	0.507793103	0.857120823
13	0	0.016794953	0.471381963	0.511311054
14	0	0.031369085	0.434087533	0.276863753
15	0	0.055936909	0.397480106	0.144755784
16	0	0.096466877	0.362835544	0.075732648
17	0	0.161009464	0.330644562	0.04033419
18	0	0.260529968	0.301201592	0.022056555
19	0	0.410157729	0.274604775	0.012339332
20	0	0.628214511	0.250657825	0.007095116
21	0	0.933577287	0.229262599	0.004241645
22	0	1.331381703	0.210222812	0.002544987
23	0	1.776239748	0.193342175	0.001542416
24	0	2.113804416	0.178228117	0.001002571
25	0	2.104921136	0.164782493	0.000616967
26	0	1.674776025	0.152710875	0.000385604
27	0	1.076403785	0.142013263	0.000308483
28	0	0.594624606	0.132297082	0.000154242
29	0	0.302586751	0.123562334	0.000154242
30	0	0.148933754	0.115514589	7.71E-05
31	0	0.072870662	0.108251989	7.71E-05
32	0	0.035949527	0.101480106	7.71E-05
33	0	0.017905363	0.095198939	0
34	0	0.009022082	0.089212202	0
35	0	0.004719243	0.083618037	0
36	0	0.002498423	0.078220159	0
37	0	0.001249211	0.073018568	0
38	0	0.000694006	0.067915119	0
39	0	0.000416404	0.062909814	0
40	0	0.000277603	0.058002653	0
41	0	0.000138801	0.052997347	0
42	0	0.000138801	0.048090186	0
43	0	0	0.042986737	0
44	0	0	0.037883289	0
45	0	0	0.032583554	0
46	0	0	0.027087533	0
47	0	0	0.021297082	0
48	0	0	0.015212202	0
49	0	0	0.008734748	0
50	0	0	0.001766578	0

Table H20 Influence of addition of Pd –Ag/HMOR catalysts on carbon number distribution of poly-aromatics

No. carbon.	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
4	0.02051413	0.002	0.794	0.001	0.36	
5	0.20892030	0.019	5.699	0.008	2.743	1.6215652
6	0.35706940	0.042	5.55	0.021	2.955	3.0938888
7	0.57848329	0.088	5.39	0.052	3.155	1.0049268
8	0.87239074	0.175	5.222	0.12	3.34	0.0024787
9	1.17694087	0.332	5.049	0.258	3.509	0.0000056
10	1.33534704	0.599	4.874	0.519	3.66	0
11	1.20347043	1.032	4.697	0.978	3.793	0
12	0.85712082	1.696	4.523	1.72	3.909	0
13	0.51131105	2.653	4.351	2.804	4.008	0
14	0.276863753	3.933	4.184	4.219	4.093	0
15	0.144755784	5.488	4.023	5.823	4.163	0
16	0.075732648	7.151	3.869	7.356	4.221	0
17	0.04033419	8.633	3.724	8.514	4.27	0
18	0.022056555	9.605	3.586	9.076	4.309	0
19	0.012339332	9.843	3.458	8.994	4.341	0
20	0.007095116	9.338	3.339	8.385	4.366	0
21	0.004241645	8.284	3.23	7.444	4.38	0
22	0.002544987	6.961	3.129	6.37	4.379	0
23	0.001542416	5.615	3.038	5.308	4.35	0
24	0.001002571	4.401	2.955	4.342	4.273	0
25	0.000616967	3.386	2.878	3.51	4.118	0
26	0.000385604	2.576	2.802	2.817	3.85	0
27	0.000308483	1.949	2.706	2.253	3.439	0
28	0.000154242	1.472	2.526	1.8	2.893	0
29	0.000154242	1.113	2.11	1.438	2.269	0
30	7.71E-05	0.843	1.363	1.151	1.659	0
31	7.71E-05	0.641	0.618	0.923	1.142	0
32	7.71E-05	0.489	0.215	0.742	0.751	0
33	0	0.374	0.067	0.598	0.48	0
34	0	0.288	0.021	0.483	0.302	0
35	0	0.222	0.006	0.391	0.189	0
36	0	0.172	0.002	0.317	0.118	0
37	0	0.134	0.001	0.258	0.075	0
38	0	0.104	0	0.21	0.047	0
39	0	0.082	0	0.171	0.03	0
40	0	0.064	0	0.14	0.02	0
41	0	0.05	0	0.114	0.013	0
42	0	0.04	0	0.092	0.008	0
43	0	0.031	0	0.075	0.006	0
44	0	0.024	0	0.06	0.004	0
45	0	0.019	0	0.048	0.003	0
46	0	0.014	0	0.037	0.002	0
47	0	0.01	0	0.027	0.001	0
48	0	0.007	0	0.019	0.001	0
49	0	0.004	0	0.01	0	0
50	0	0.001	0	0.002	0	0

Table H21 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of polar-aromatics

No. carbon.	Non cat	Y	1%Ag/Y	2%Ag/Y	3%Ag/Y
4		0.062053476	0.035426136	0.0508596	0.019791176
5	0	0.069625668	0.038494318	0.0574785	0.021882353
6	0.7587839	0.077229947	0.041420455	0.0641547	0.023929412
7	1.1221906	0.084705882	0.044161932	0.0708023	0.025897059
8	1.3237111	0.091957219	0.046704545	0.0773066	0.027741176
9	1.4166767	0.098919786	0.049005682	0.0836103	0.029426471
10	1.4558439	0.105465241	0.051065341	0.0895989	0.030935294
11	1.4549019	0.111625668	0.052883523	0.0952722	0.032241176
12	1.3855221	0.117272727	0.054446023	0.1005444	0.033308824
13	1.2157925	0.122470588	0.055795455	0.1054155	0.034129412
14	0.9498433	0.127219251	0.056917614	0.1098854	0.034685294
15	0.6550923	0.131486631	0.057855114	0.1139255	0.034976471
16	0.4257914	0.135368984	0.058636364	0.1175645	0.034985294
17	0.2925404	0.138930481	0.059261364	0.1207736	0.034720588
18	0.2283868	0.142171123	0.059786932	0.123553	0.0342
19	0.2028989	0.145187166	0.060213068	0.1258166	0.033432353
20	0.197474	0.148042781	0.060553977	0.1274212	0.032444118
21	0.2016076	0.150770053	0.06078125	0.1281948	0.031261765
22	0.2089571	0.153497326	0.060838068	0.127851	0.029902941
23	0.2154842	0.156192513	0.060568182	0.1260172	0.028420588
24	0.2187209	0.158951872	0.059701705	0.1223209	0.026841176
25	0.2174587	0.161807487	0.0578125	0.116361	0.025191176
26	0.2115169	0.164759358	0.054303977	0.1079656	0.023505882
27	0.2014624	0.167807487	0.048650568	0.0973352	0.021811765
28	0.1882914	0.15997861	0.040838068	0.0849284	0.020126471
29	0.1731344	0.025026738	0.031676136	0.0717192	0.018485294
30	0.1570416	3.21E-05	0.022670455	0.0586533	0.016897059
31	0.140865	0	0.01515625	0.0466189	0.015370588
32	0.1252232	0	0.009630682	0.0361891	0.013923529
33	0.1105173	0	0.0059375	0.0275931	0.012547059
34	0.0969717	0	0.003607955	0.020745	0.011267647
35	0.0846804	0	0.002173295	0.0154441	0.010076471
36	0.0736483	0	0.001321023	0.0114613	0.008973529
37	0.0638234	0	0.000809659	0.0084527	0.00795
38	0.0551206	0	0.000497159	0.0062464	0.007014706
39	0.047438	0	0.0003125	0.0046418	0.006167647
40	0.0406672	0	0.000198864	0.0034384	0.005382353
41	0.0346995	0	0.000127841	0.0025501	0.004676471
42	0.0294296	0	8.52E-05	0.0018911	0.004023529
43	0.0247563	0	5.68E-05	0.001404	0.003432353
44	0.0205834	0	2.84E-05	0.0010602	0.002894118
45	0.0168181	0	2.84E-05	0.0007736	0.002391176
46	0.0133694	0	1.42E-05	0.0005731	0.001914706
47	0.0101454	0	1.42E-05	0.0004011	0.001464706
48	0.0070491	0	0	0.0002579	0.001023529
49	0.0039734	0	0	0.0001433	0.000582353
50	0.0007931	0	0	0.0000287	0.000114706

Table H22 Influence of HMOR, KL, BETA, and Y on carbon number distribution of polar-aromatics

No. carbon.	BETA	KL	HMOR	Y
4				0.062053476
5	0	0	0	0.069625668
6	0	0.5364696	0	0.077229947
7	0	0.456012	0.1806787	0.084705882
8	0.02	0.3871962	0.1934223	0.091957219
9	0.09	0.3290253	0.2048492	0.098919786
10	0.21	0.2801965	0.2145322	0.105465241
11	0.36	0.2393621	0.2219594	0.111625668
12	0.5	0.2052628	0.2265349	0.117272727
13	0.58	0.1767831	0.2276161	0.122470588
14	0.59	0.1529665	0.2246055	0.127219251
15	0.55	0.1330082	0.2170991	0.131486631
16	0.48	0.1162396	0.2050605	0.135368984
17	0.41	0.1021091	0.1889537	0.138930481
18	0.34	0.090163	0.1697536	0.142171123
19	0.28	0.0800291	0.1487974	0.145187166
20	0.23	0.0714016	0.1275191	0.148042781
21	0.19	0.0640292	0.1071749	0.150770053
22	0.15	0.0577046	0.0886617	0.153497326
23	0.13	0.0522566	0.0724679	0.156192513
24	0.1	0.0475429	0.0587299	0.158951872
25	0.08	0.0434452	0.047338	0.161807487
26	0.07	0.0398645	0.0380436	0.164759358
27	0.06	0.0367177	0.0305431	0.167807487
28	0.05	0.0339351	0.024531	0.15997861
29	0.04	0.0314575	0.0197292	0.025026738
30	0.04	0.0292349	0.0158988	3.21E-05
31	0.03	0.0272247	0.012842	0
32	0.03	0.0253909	0.0103985	0
33	0.02	0.0237024	0.0084408	0
34	0.02	0.022133	0.0068679	0
35	0.02	0.02066	0.0056001	0
36	0.01	0.0192639	0.0045751	0
37	0.01	0.0179279	0.0037437	0
38	0.01	0.0166373	0.0030669	0
39	0.01	0.015379	0.0025142	0
40	0.01	0.0141415	0.002061	0
41	0.01	0.0129138	0.0016878	0
42	0.01	0.0116857	0.0013788	0
43	0	0.0104469	0.0011212	0
44	0	0.0091871	0.0009044	0
45	0	0.0078948	0.0007196	0
46	0	0.0065575	0.0005593	0
47	0	0.0051608	0.0004166	0
48	0	0.0036876	0.0002854	0
49	0	0.0021177	0.0001594	0
50	0	0.0004262	0.0000317	0

Table H23 Influence of different zeolites loaded with 1%Ag on carbon number distribution of polar-aromatics

No. carbon.	1%Ag/Y	1%Ag/Beta	1%Ag/KL	1%Ag/HMOR
4	0.035426136	0.042712934	0	0.138447301
5	0.038494318	0.06466877	4.24E-05	0.142951157
6	0.041420455	0.094195584	0.000816976	0.146529563
7	0.044161932	0.131671924	0.005400531	0.149012853
8	0.046704545	0.17659306	0.018090186	0.149984576
9	0.049005682	0.226876972	0.038450928	0.148658098
10	0.051065341	0.278927445	0.060244032	0.143645244
11	0.052883523	0.327823344	0.076976127	0.133048843
12	0.054446023	0.368391167	0.085793103	0.11548072
13	0.055795455	0.396277603	0.087236074	0.091928021
14	0.056917614	0.409148265	0.083405836	0.066539846
15	0.057855114	0.406876972	0.076551724	0.044298201
16	0.058636364	0.39148265	0.068392573	0.027809769
17	0.059261364	0.36637224	0.06006366	0.016935733
18	0.059786932	0.335078864	0.052201592	0.010210797
19	0.060213068	0.300946372	0.045114058	0.006200514
20	0.060553977	0.266561514	0.038896552	0.003809769
21	0.06078125	0.233817035	0.033527851	0.002375321
22	0.060838068	0.203596215	0.028944297	0.001511568
23	0.060568182	0.176529968	0.025050398	0.000971722
24	0.059701705	0.152681388	0.021750663	0.000647815
25	0.0578125	0.13192429	0.018949602	0.000431877
26	0.054303977	0.113943218	0.016572944	0.000293059
27	0.048650568	0.098548896	0.014546419	0.000200514
28	0.040838068	0.085299685	0.012806366	0.000138817
29	0.031676136	0.073943218	0.011310345	9.25E-05
30	0.022670455	0.064164038	0.010026525	7.71E-05
31	0.01515625	0.055772871	0.008901857	4.63E-05
32	0.009630682	0.048580442	0.007925729	3.08E-05
33	0.0059375	0.042271293	0.007066313	3.08E-05
34	0.003607955	0.036908517	0.006302387	1.54E-05
35	0.002173295	0.032176656	0.005633952	1.54E-05
36	0.001321023	0.02807571	0.005029178	1.54E-05
37	0.000809659	0.024479495	0.004488064	1.54E-05
38	0.000497159	0.02126183	0.00398939	0
39	0.0003125	0.018485804	0.003543767	0
40	0.000198864	0.016025237	0.003140584	0
41	0.000127841	0.013817035	0.002769231	0
42	8.52E-05	0.011861199	0.002419098	0
43	5.68E-05	0.010094637	0.002100796	0
44	2.84E-05	0.008454259	0.001793103	0
45	2.84E-05	0.007003155	0.001496021	0
46	1.42E-05	0.005615142	0.001220159	0
47	1.42E-05	0.004290221	0.000944297	0
48	0	0.003028391	0.000668435	0
49	0	0.00170347	0.000381963	0
50	0	0.000315457	7.43E-05	0

Table H24 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of polar-aromatics

No. carbon.	$\alpha_{Pd} = 0$	$\alpha_{Pd} = 0.2$	$\alpha_{Pd} = 0.4$	$\alpha_{Pd} = 0.6$	$\alpha_{Pd} = 0.8$	$\alpha_{Pd} = 1$
4	0.138447301	0	0	0.64	0	
5	0.142951157	0	0	0.956	0	0.4014874
6	0.146529563	0	0	1.373	0.001	0.093083
7	0.149012853	0.015	0.011	1.899	0.03	2.1278877
8	0.149984576	0.222	0.192	2.525	0.23	3.8145403
9	0.148658098	1.194	1.108	3.226	0.897	3.8518519
10	0.143645244	3.311	3.204	3.957	2.192	3.5278727
11	0.133048843	5.979	5.921	4.657	3.881	3.3378845
12	0.11548072	8.173	8.195	5.263	5.499	3.0261427
13	0.091928021	9.326	9.408	5.717	6.684	2.3932816
14	0.066539846	9.465	9.572	5.982	7.305	1.6223942
15	0.044298201	8.904	9.007	6.048	7.419	1.0353862
16	0.027809769	7.979	8.063	5.93	7.163	0.7271219
17	0.016935733	6.932	6.994	5.663	6.679	0.5962392
18	0.010210797	5.911	5.952	5.29	6.083	0.5158092
19	0.006200514	4.987	5.01	4.853	5.455	0.421229
20	0.003809769	4.185	4.195	4.39	4.843	0.3182931
21	0.002375321	3.507	3.507	3.928	4.275	0.2289293
22	0.001511568	2.941	2.934	3.488	3.761	0.1611954
23	0.000971722	2.472	2.461	3.079	3.306	0.1129965
24	0.000647815	2.085	2.072	2.709	2.907	0.079523
25	0.000431877	1.766	1.751	2.378	2.559	0.0564027
26	0.000293059	1.502	1.486	2.085	2.257	0.0403781
27	0.000200514	1.283	1.267	1.828	1.995	0.029187
28	0.000138817	1.1	1.085	1.602	1.768	0.0212979
29	9.25E-05	0.947	0.932	1.406	1.57	0.0156809
30	7.71E-05	0.818	0.804	1.234	1.397	0.0116419
31	4.63E-05	0.709	0.696	1.084	1.245	0.0087096
32	3.08E-05	0.617	0.604	0.953	1.111	0.0065617
33	3.08E-05	0.537	0.525	0.838	0.993	0.004975
34	1.54E-05	0.469	0.458	0.738	0.888	0.0037938
35	1.54E-05	0.409	0.399	0.649	0.794	0.0029083
36	1.54E-05	0.358	0.349	0.57	0.709	0.00224
37	1.54E-05	0.313	0.304	0.501	0.633	0.0017327
38	0	0.273	0.265	0.439	0.565	0.0013454
39	0	0.238	0.231	0.384	0.502	0.0010482
40	0	0.207	0.201	0.335	0.444	0.0008188
41	0	0.179	0.174	0.29	0.391	0.0006408
42	0	0.154	0.149	0.25	0.342	0.0005019
43	0	0.132	0.127	0.214	0.297	0.0003925
44	0	0.111	0.107	0.181	0.253	0.0003056
45	0	0.092	0.089	0.15	0.212	0.0002357
46	0	0.074	0.071	0.12	0.172	0.0001783
47	0	0.057	0.055	0.092	0.133	0.0001299
48	0	0.04	0.038	0.065	0.094	0.0000875
49	0	0.023	0.022	0.037	0.053	0.0000483
50	0	0.005	0.004	0.007	0.011	0.0000096

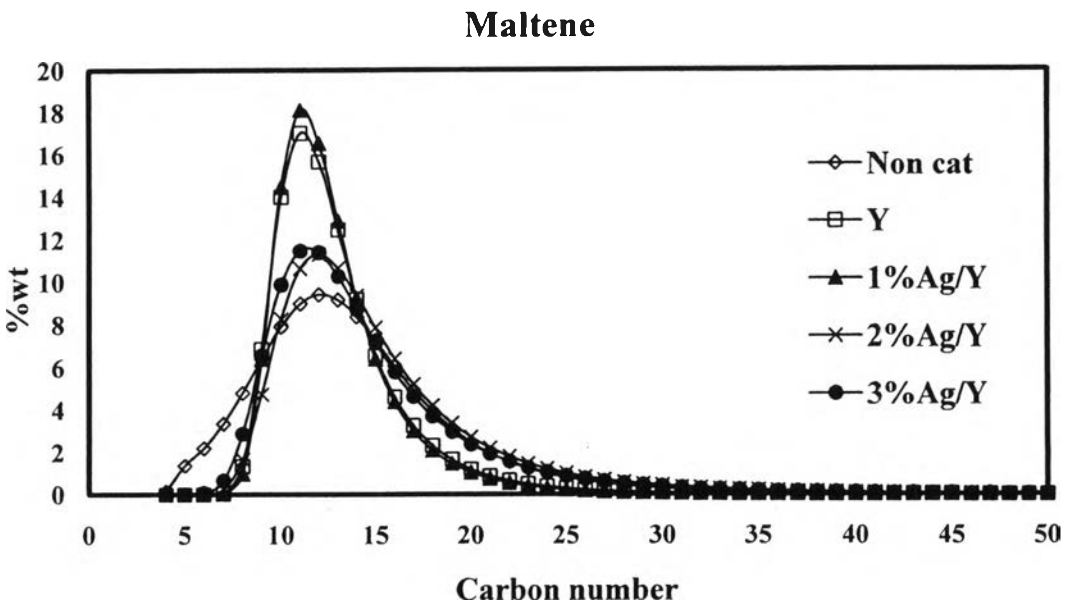


Figure H1 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon distribution in maltene.

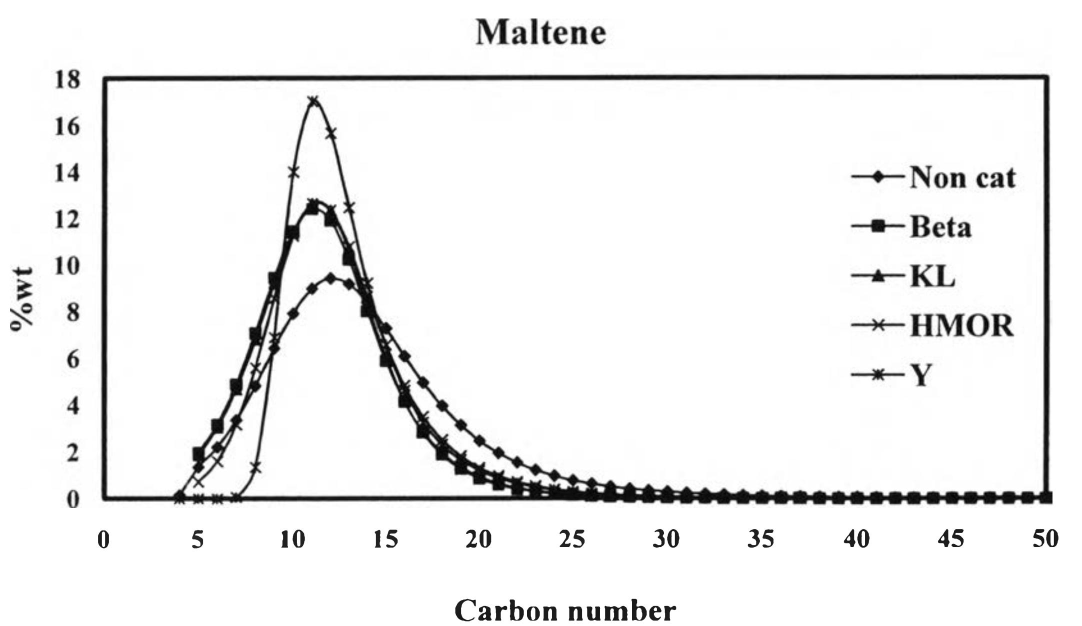


Figure H2 Influence of HMOR, KL, BETA, and Y catalysts on carbon number distribution of maltene.

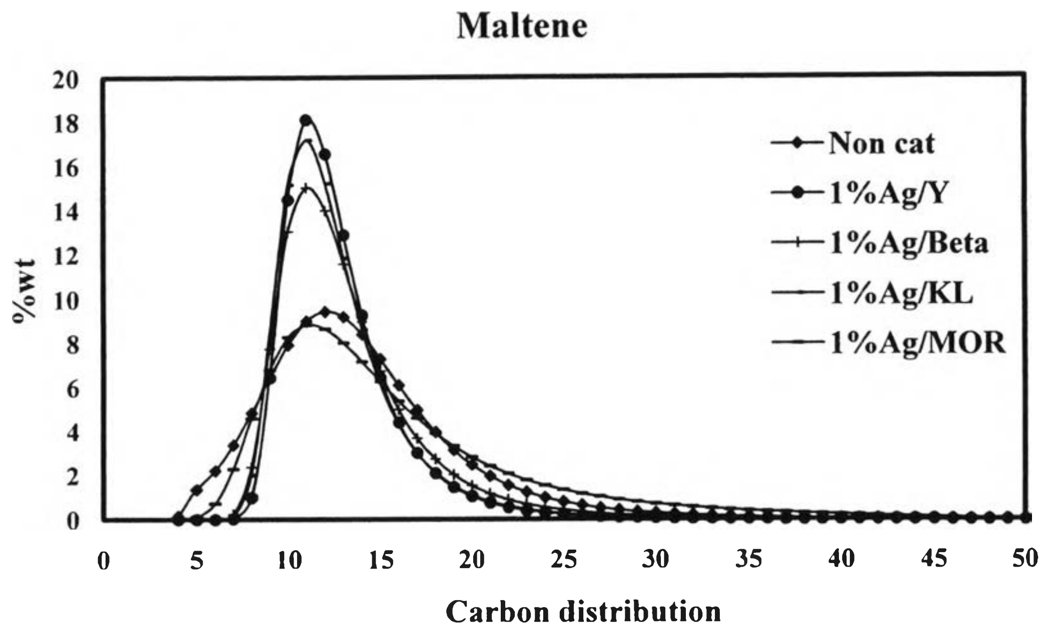


Figure H3 Influence of different zeolites loaded with 1%Ag on carbon number distribution of maltene.

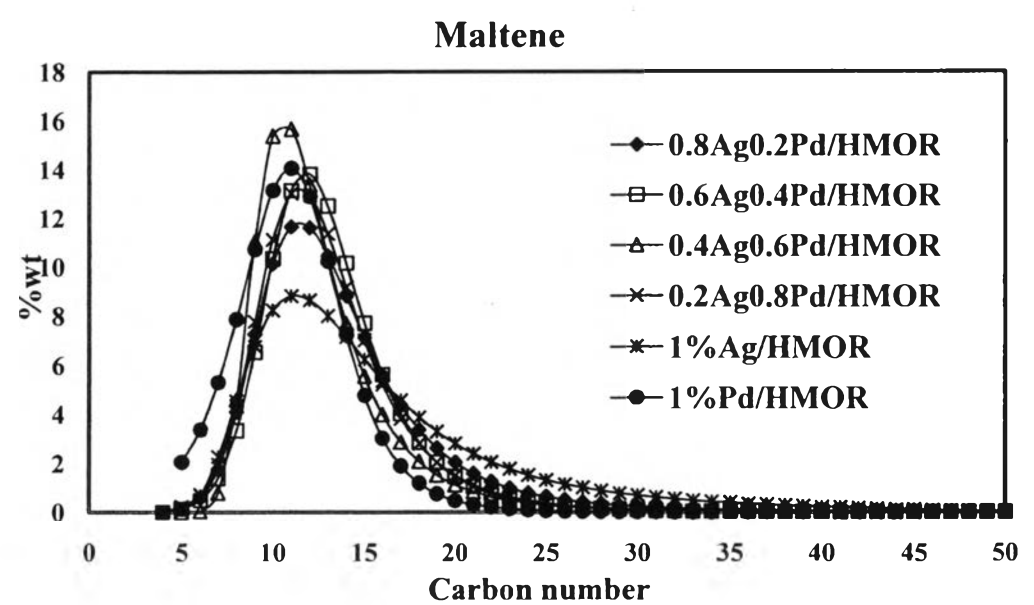


Figure H4 Influence of Pd-Ag/HMOR catalysts on carbon number distribution of maltene.

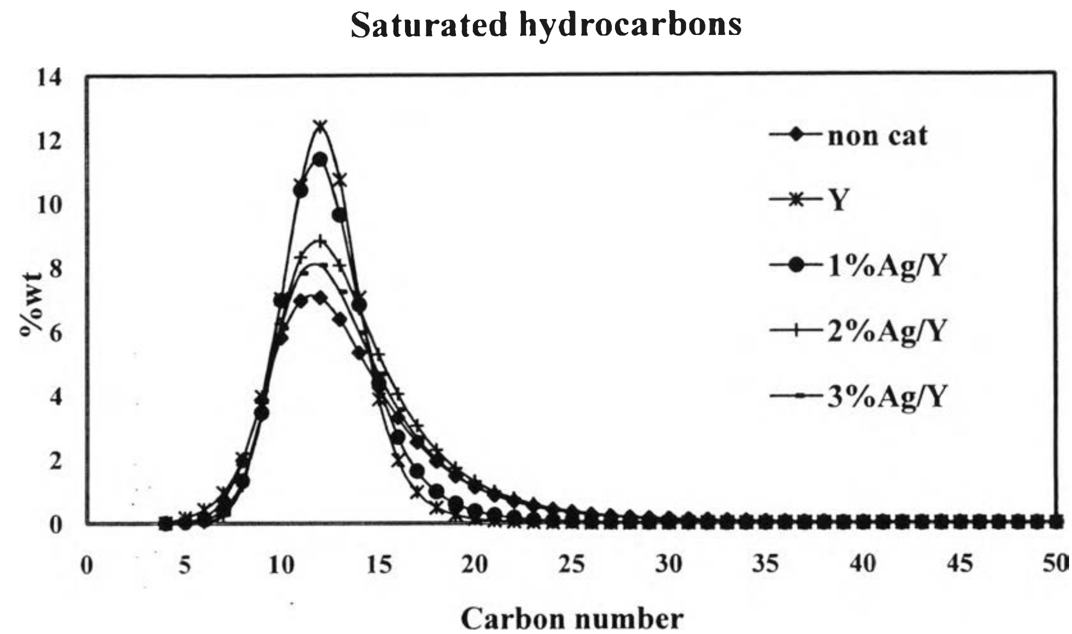


Figure H5 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of saturated hydrocarbons.

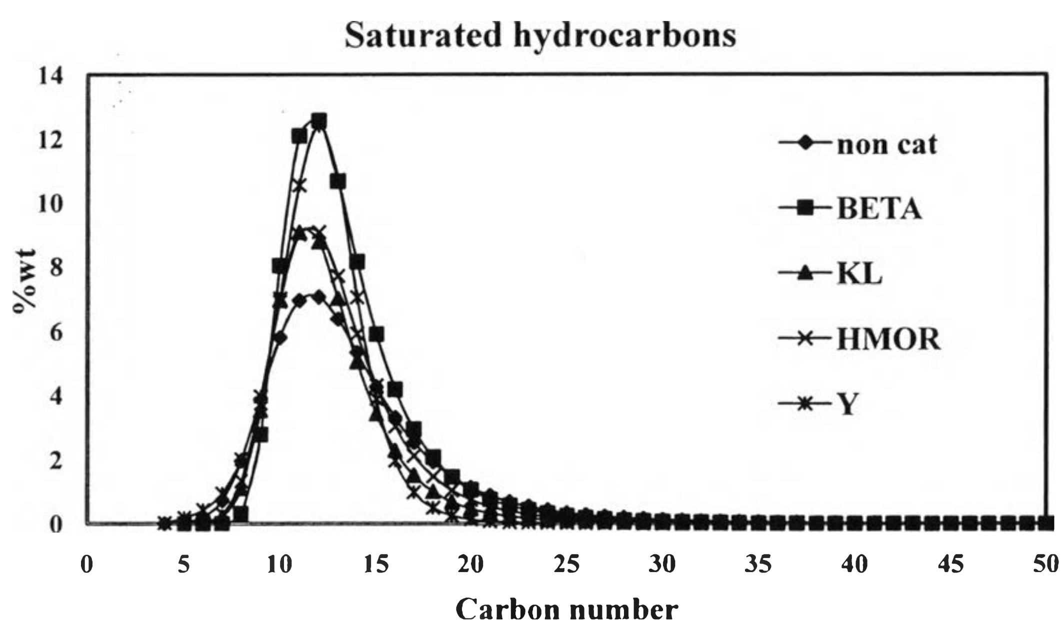


Figure H6 Influence of HMOR, KL, BETA, and Y on carbon number distribution of saturated hydrocarbons.

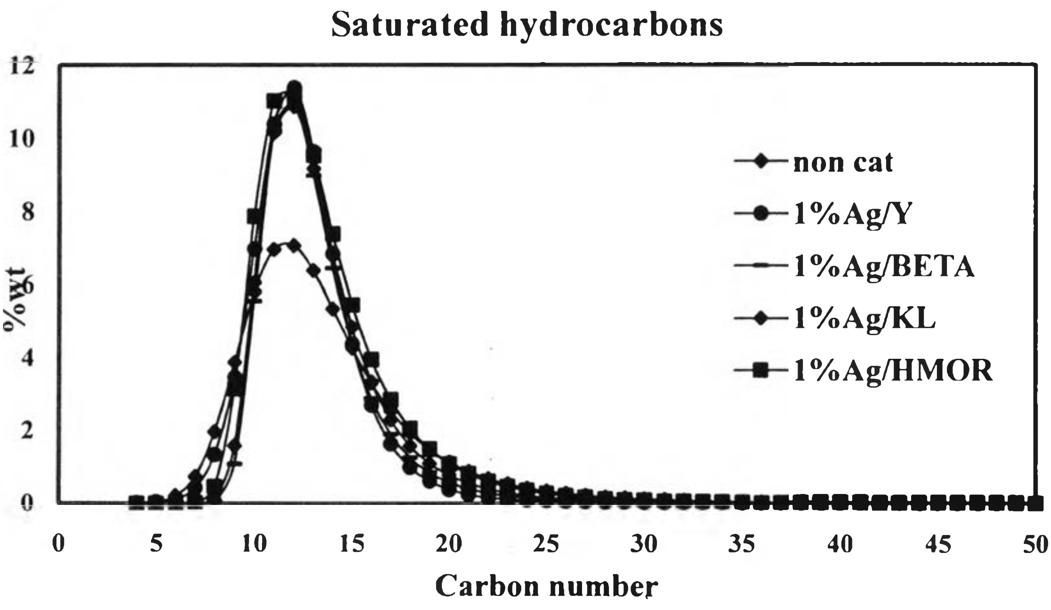


Figure H7 Influence of different zeolites loaded with 1%Ag on carbon number distribution of saturated hydrocarbons.

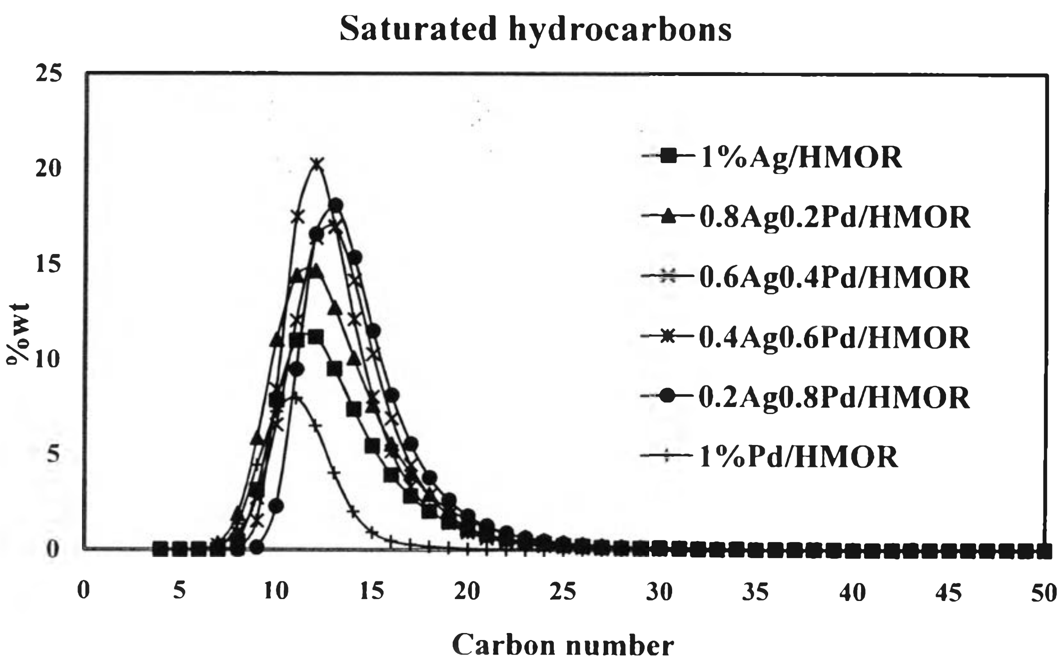


Figure H8 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of saturated hydrocarbons.

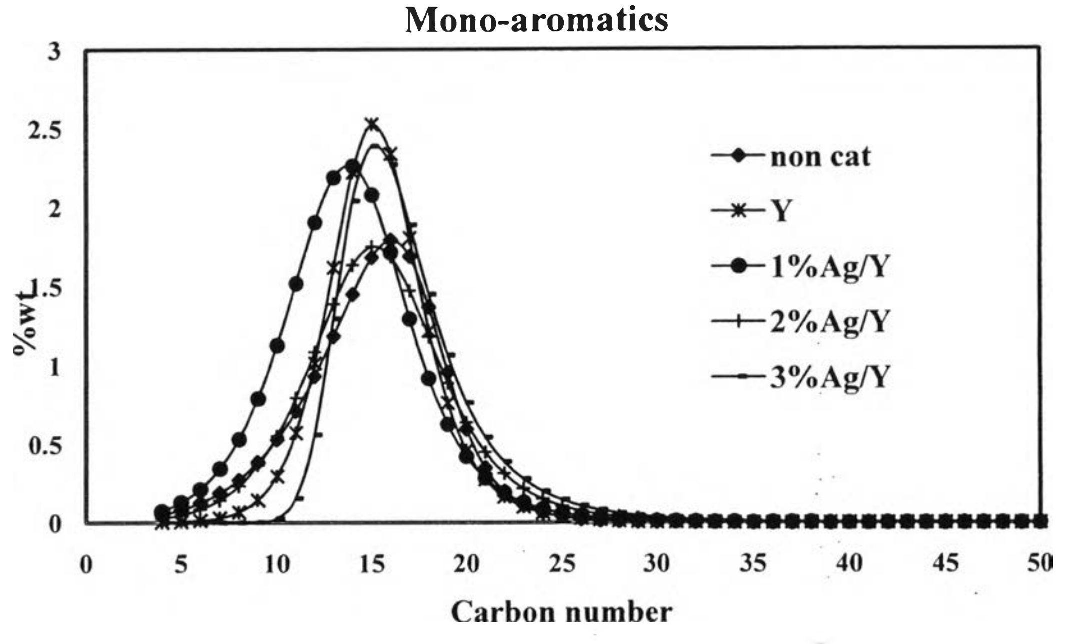


Figure H9 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of mono-aromatics.

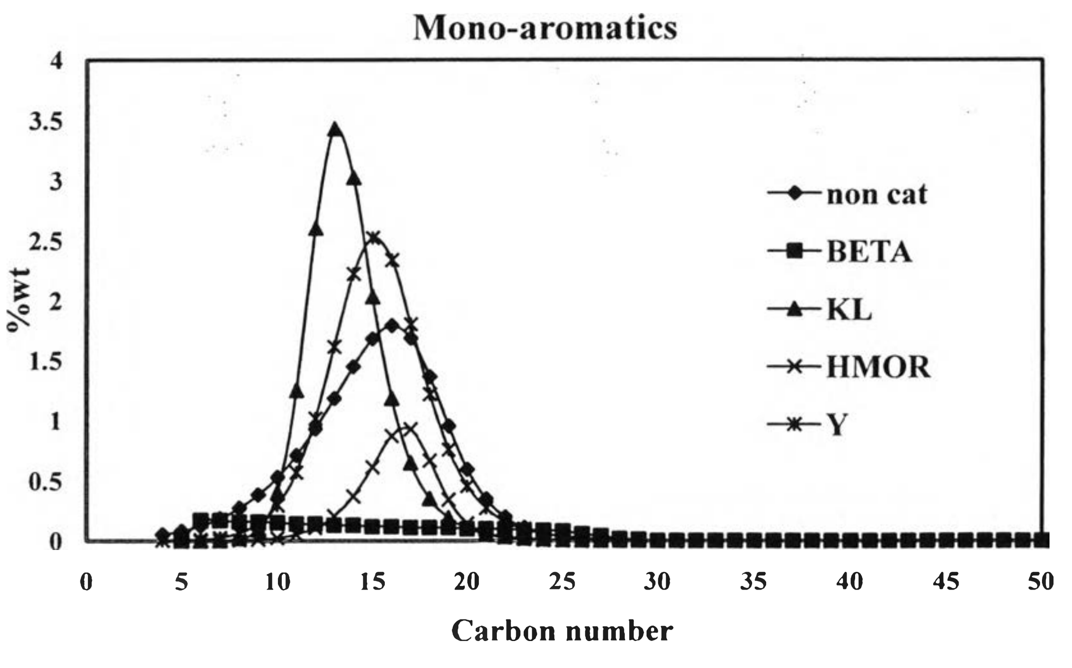


Figure H10 Influence of HMOR, KL, BETA, and Y on carbon number distribution of mono-aromatics.

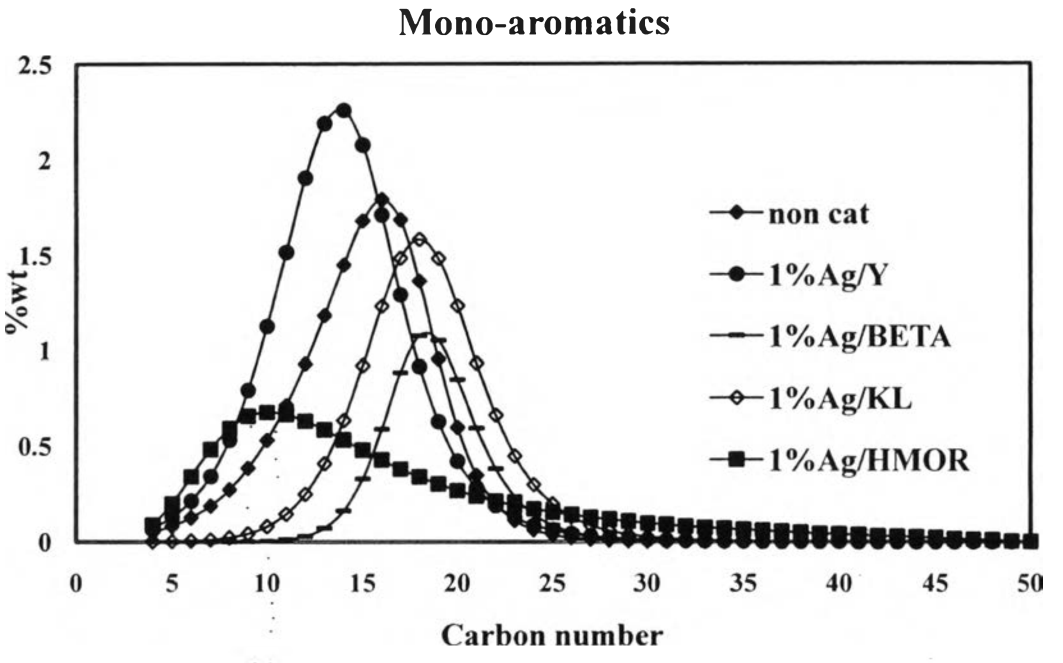


Figure H11 Influence of different zeolites loaded with 1%Ag on carbon number distribution of mono-aromatics.

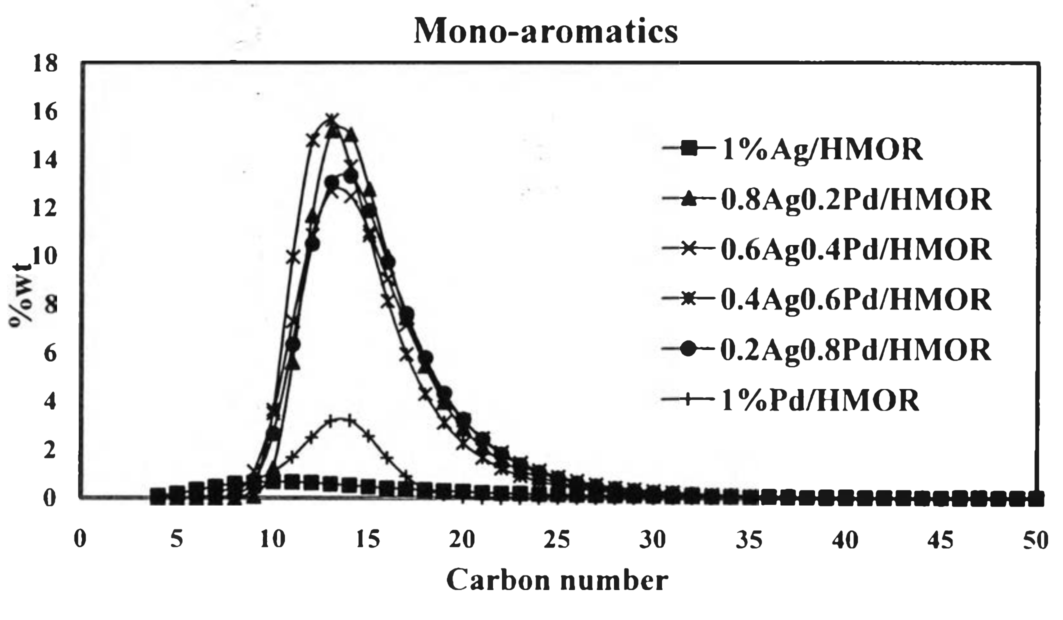


Figure H12 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of mono-aromatics.

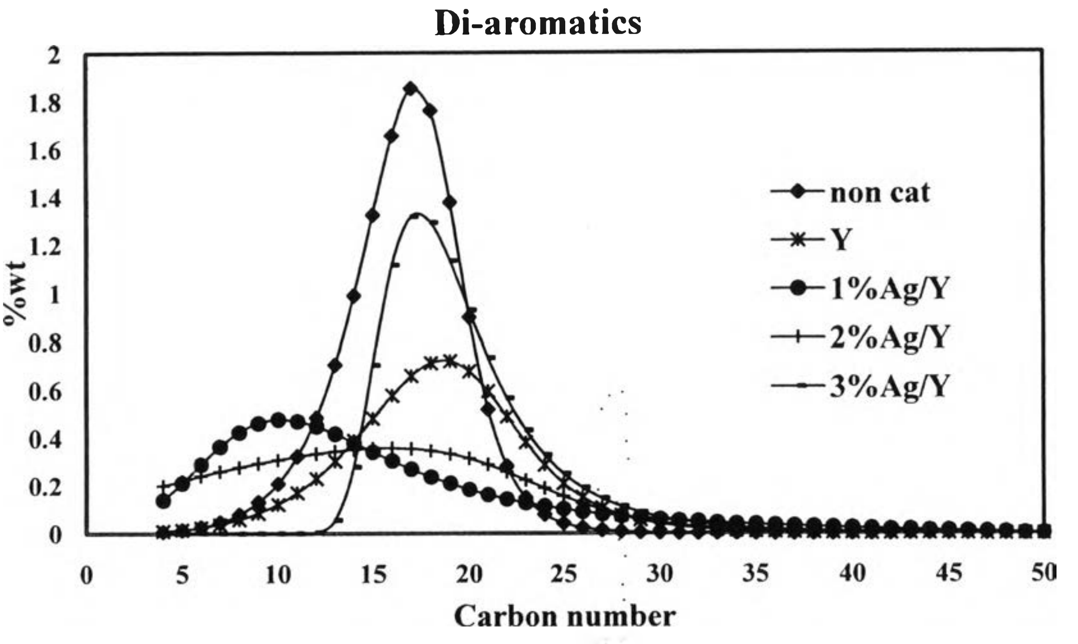


Figure H13 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of di-aromatics.

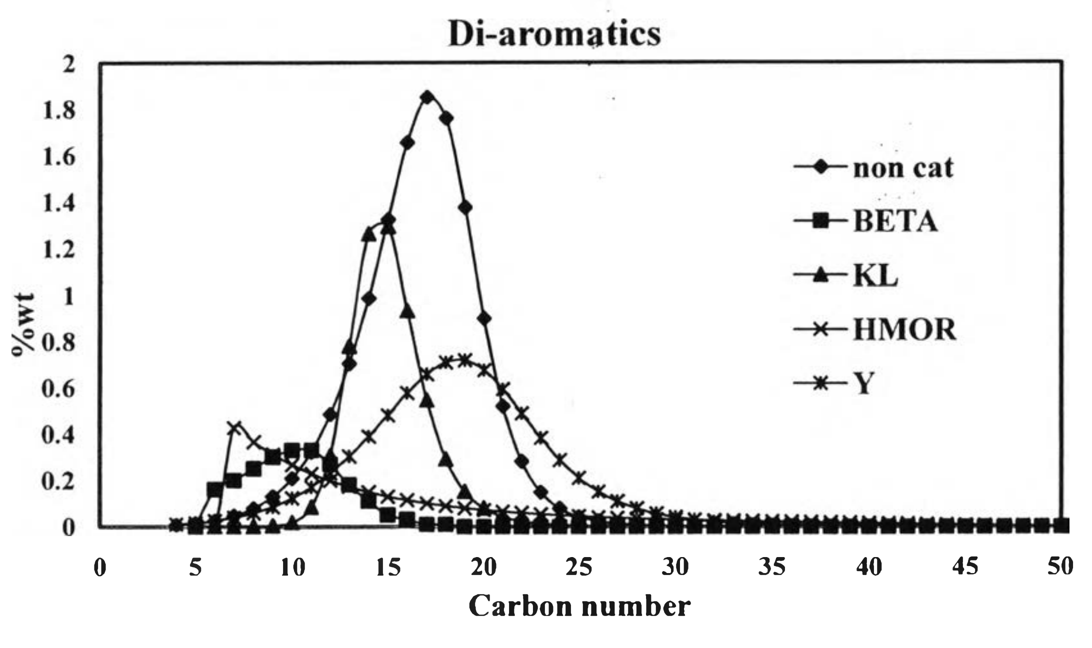


Figure H14 Influence of HMOR, KL, BETA, and Y on carbon number distribution of di-aromatics.

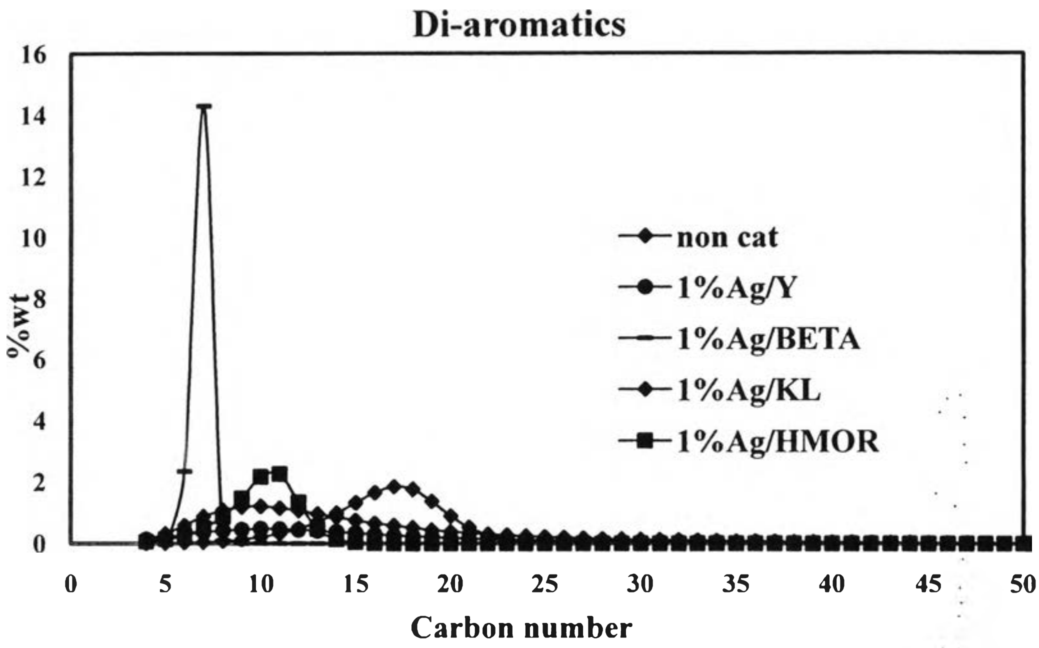


Figure H15 Influence of different zeolites loaded with 1%Ag on carbon number distribution of di-aromatics.

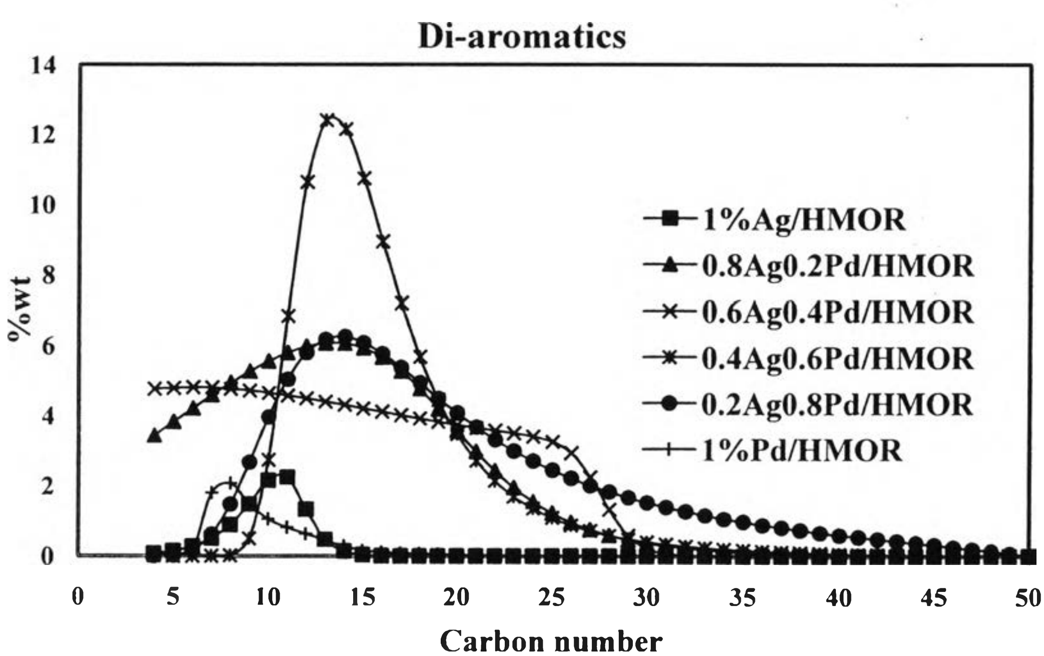


Figure H16 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of di-aromatics.

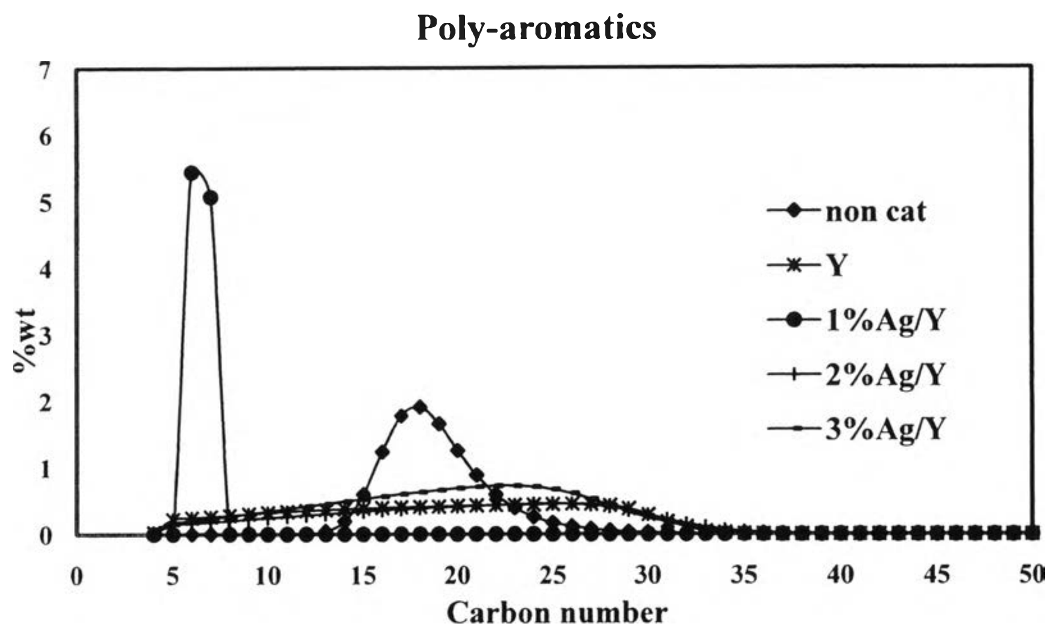


Figure H17 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon number distribution of poly-aromatics.

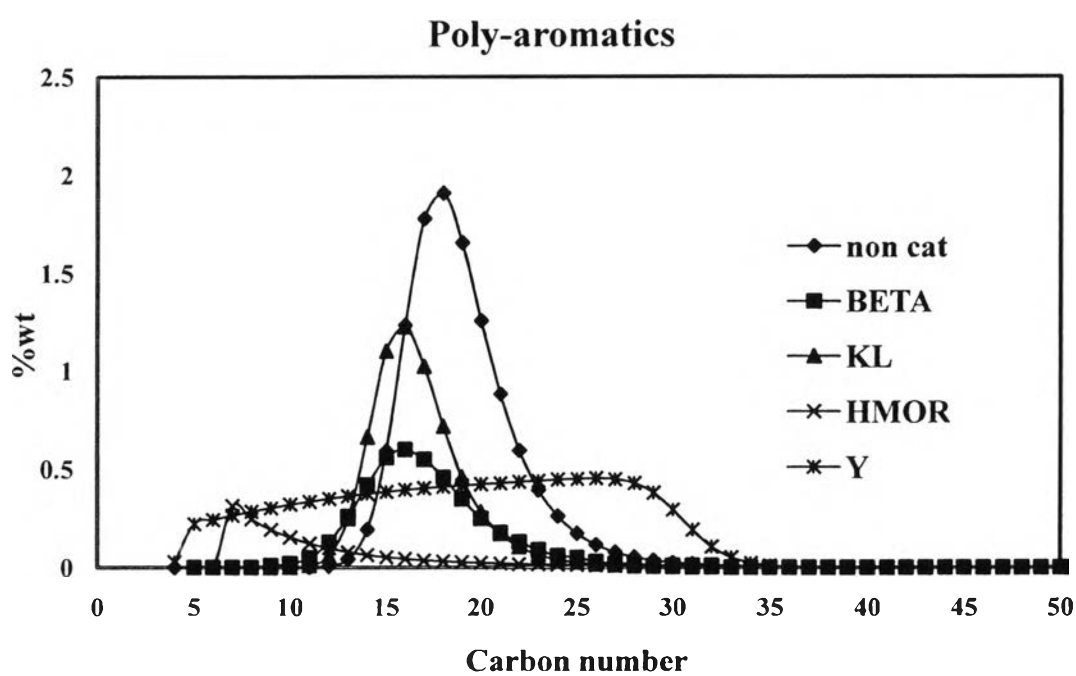


Figure H18 Influence of HMOR, KL, BETA, and Y on carbon number distribution of poly-aromatics.

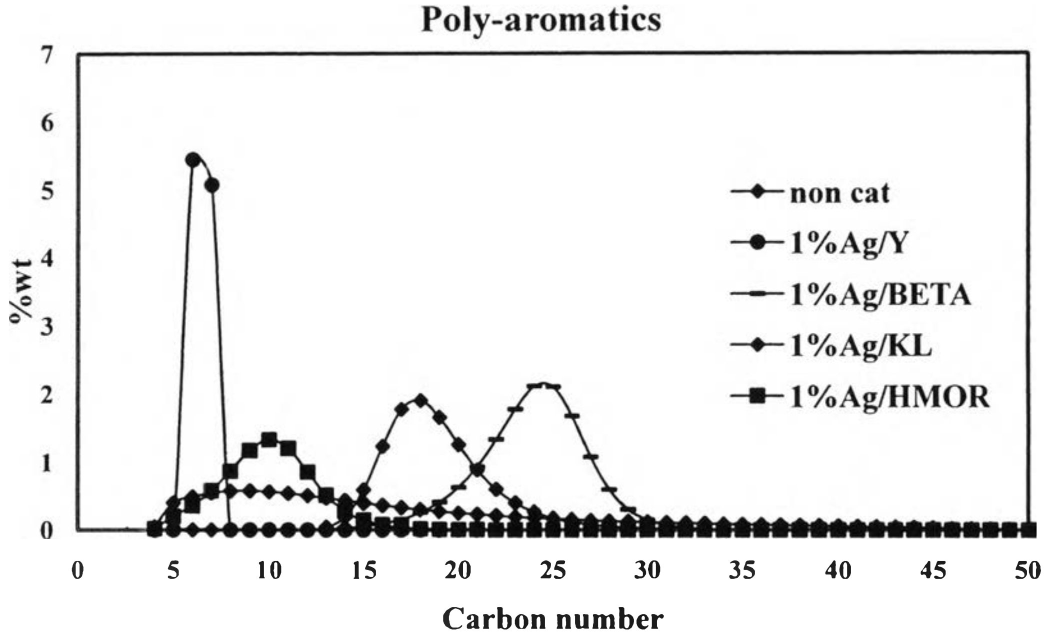


Figure H19 Influence of different zeolites loaded with 1%Ag on carbon number distribution of poly-aromatics.

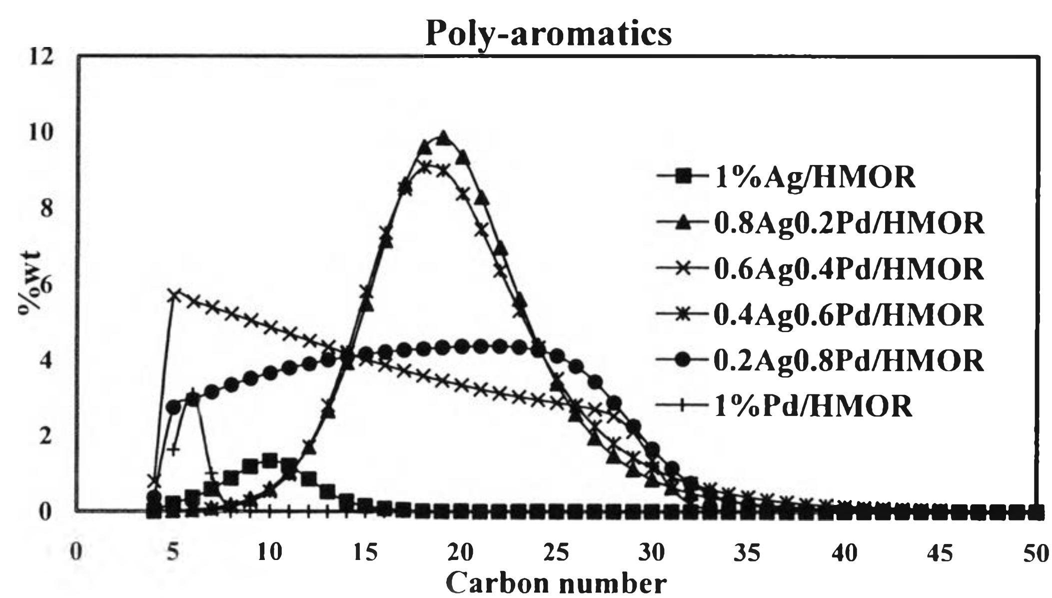


Figure H20 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of poly-aromatics.

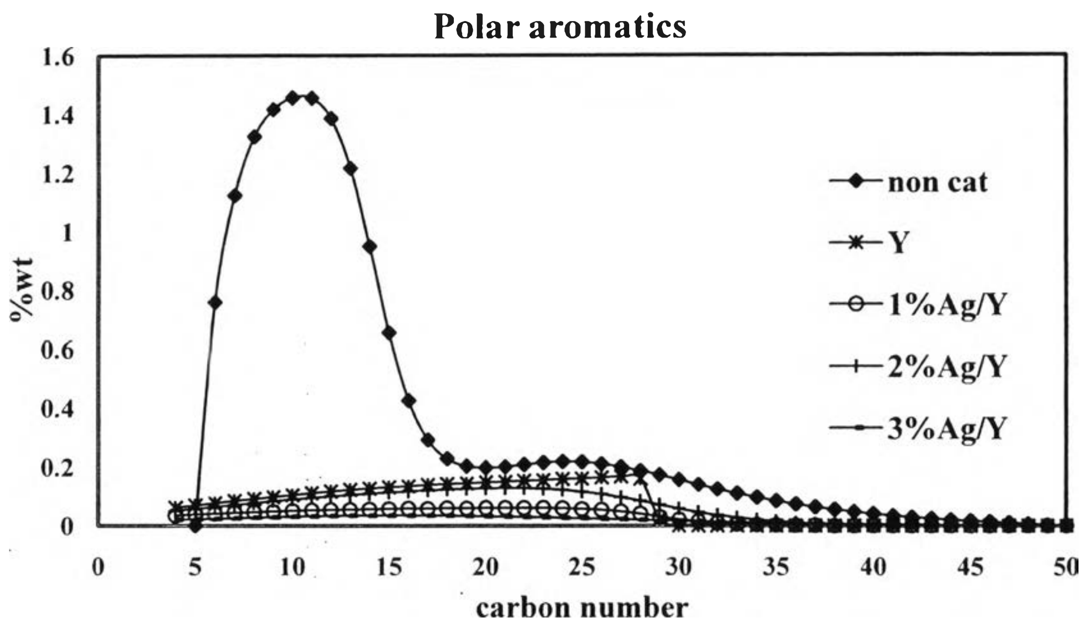


Figure H21 Influence of Y zeolite, 1%Ag/Y, 2%Ag/Y, and 3%Ag/Y catalysts on carbon distribution in polar aromatics.

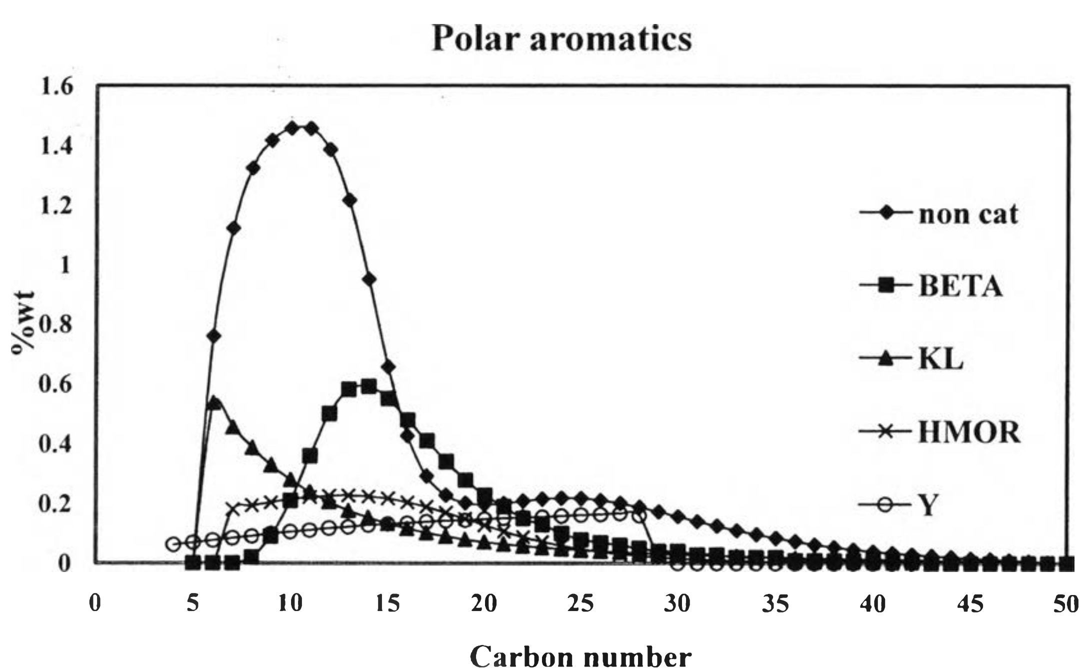


Figure H22 Influence of HMOR, KL, BETA, and Y catalysts on carbon distribution in polar aromatics.

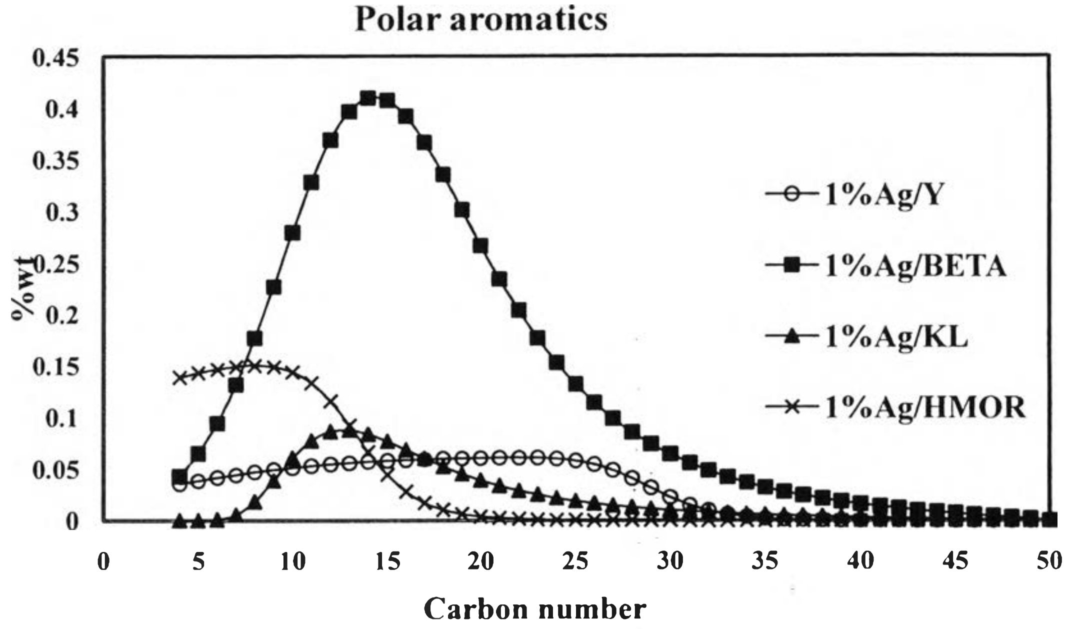


Figure H23 Influence of different zeolites loaded with 1%Ag on carbon distribution in polar aromatics

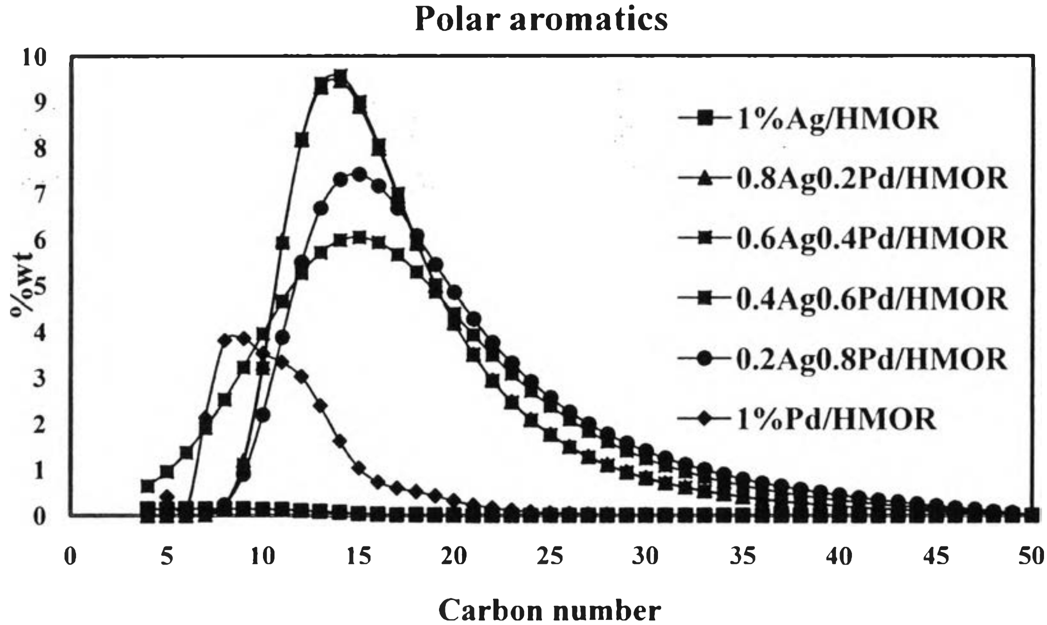


Figure H24 Influence of Pd –Ag/HMOR catalysts on carbon number distribution of polar-aromatics.

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Presentations:

1. Wehatoranawee, A. and Jitkanka, S. (2010, October 12-14) Effect of Silver Supported HMOR-zeolite on Waste Tire Pyrolysis Products. Oral presented at the 2nd Asian Conference on Innovative Energy & Environmental Chemical Engineering, Laguna Beach Resort, Phuket, Thailand.
2. Wehatoranawee, A. and Jitkanka, S. (2011, April 26) Catalytic Pyrolysis of Waste Tire over Ag-Loaded Catalysts. Poster presented at the 2nd Research Symposium on Petroleum, Petrochemicals, and Advanced Materials and the 17th PPC Symposium on Petroleum, Petrochemicals, and Polymers, Queen Sirikit National Convention Centre, Bangkok, Thailand.