Chapter Four

Results of The Calculations

The optimum binary interaction coefficients predicted by both objective functions for each equation of state are given in Table 4.1 to Table 4.6. Table 4.1 and 4.2 shows the values of K_{ij} and the absolute average percent deviation (AAD) in bubble point pressures using four equations for carbon dioxide-hydrocarbon mixtures, whereas, Table 4.3 and 4.4 are for methane mixtures and Table 4.5 and 4.6 are for ethane mixtures. In those tables, N is the number of experimental data points used to evaluate the optimum K_{ij} and "Range of P" is the minimum and maximum pressure of the data set for the temperature (T) specified in the second column. The absolute average percent deviation (%AAD) was calculated as

$$\%AAD = \frac{100}{N} \sum_{m=1}^{N} \frac{(P_m^{exp} - P_m^{calc})}{P_m^{exp}} \qquad (4.1)$$

The application of the rapid fugacity method was intended to indicate its advantage of less computation time. In addition, the optimum K_{ij} values predicted from the minimization of the deviation in bubble pressure method

certainly yielded better result in bubble point calculations. Therefore, in the VLE prediction part, the optimum K_{ij} values from the bubble pressure method would be used to evaluate the bubble point pressure and vapor phase composition for each data set in all systems. These results, which include the absolute errors of all data point, are given in details in Appendix B.

Additionally, taken from these VLE results, the isotherm pressure composition diagrams from experimental data and those evaluated by SW and PT equations for each system are shown in Figures 4.1 to 4.6 for CO_2 systems, Figures 4.7 to 4.11 for methane systems, and Figures 4.12 to 4.14 for ethane systems.

TABLE 4.1 Binary interaction coefficients and the deviations in bubble point pressure calculations of CO2 systems for the four equations of state using the bubble point pressure criterion

System	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
CO2 - Ethane	250.00	14.23-18.51	13	0.1436	0.39	0.1084	1.03	0.1439	0.53	0.1431	1.89
CO2 - n-Propane	266.49	7.96-25.79	11	0.1340	1.99	0.1180	2.08	0.1366	1.87	0.1447	1.93
	244.27	4.97-13.40	10	0.1322	1.86	0.1172	2.71	0.1373	1.12	0.1436	1.29
CO2 - i-Butane	310.94	7.14-70.90	8	0.1291	0.94	0.1153	1.07	0.1250	1.39	0.1236	1.63
	344.27	21.36-65.05	5	0.1367	0.68	0.1214	0.48	0.1413	0.54	0.1501	1.10
	377.61	35.72-61.17	4	0.1734	2.11	0.1452	1.63	0.1814	1.77	0.1608	2.02
	394.27	35.65-47.70	4	0.1867	0.69	0.1617	1.22	0.1903	0.98	0.1854	1.87
CO2 - n-Pentane	277.66	2.25-37.01	10	0.1426	5.52	0.1179	6.72	0.1359	4.82	0.1335	5.11
	311.05	4.56-72.87	14	0.1423	3.46	0.1244	4.41	0.1195	3.12	0.1157	4.58
	344.16	4.08-90.97	15	0.1368	2.39	0.1291	2.40	0.1214	3.64	0.1077	9.98
	377.61	8.98-95.05	9	0.1508	2.01	0.1361	3.43	0.1307	2.76	0.0320	4.23
CO2 - n-Heptane	310.66	1.84- 74.64	23	0.1177	2.18	0.1003	2.10	0.0965	2.31	0.0587	4.36
	352.61	4.18-114.58	17	0.1129	0.82	0.1013	1.01	0.0838	1.18	-0.0002	8.12
	394.27	11.16-131.38	16	0.1027	1.76	0.0912	2.73	0.0649	1.57	-0.0824	4.46
	477.22	17.28- 97.91	7	0.1250	0.63	0.1356	2.61	0.0879	1.98	-0.0953	3.02
CO2 - n-Decane	462.56	19.36-50.70	4	0.1489	1.01	0.1280	1.28	0.0731	1.00	-0.1433	1.04
	476.96	14.25-50.10	4	0.1500	1.06	0.1275	1.48	0.0686	0.89	-0.1698	1.11
	542.96	19.38-51.00	4	0.1968	1.50	0.1672	2.18	0.0857	1.34	-0.2581	1.54
	583.66	19.76-50.40	4	0.3262	1.84	0.3117	3.00	0.1922	1.89	-0.1962	1.84

TABLE 4.2 Binary interaction coefficients and the deviations in bubble point pressure calculations of CO2 systems for the four equations of state using the fugacity criterion

System	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
CO2 - Ethane	250.00	14.23-18.51	13	0.1291	0.81	0.1192	2.12	0.1338	1.82	0.0943	7.05
CO2 - n-Propane	266.49	7.96-25.79	11	0.1323	2.05	0.1179	2.08	0.1325	2.14	0.1433	1.97
	244.27	4.97-13.40	10	0.1336	1.95	0.1155	2.83	0.1340	1.63	0.1440	1.30
CO2 - i-Butane	310.94	7.14-70.90	12	0.1285	1.10	0.1187	1.65	0.1250	1.39	0.1246	2.01
	344.27	21.36-65.05	7	0.1407	1.79	0.1214	0.48	0.1413	0.54	0.1502	1.10
	377.61	35.72-61.17	6	0.1702	3.22	0.1447	1.88	0.1827	2.14	0.1604	1.98
	394.27	35.65-47.70	4	0.1903	1.88	0.1643	1.93	0.1896	1.21	0.1822	2.16
CO2 - n-Pentane	277.66	2.25-37.01	10	0.1516	6.39	0.1423	7.91	0.1472	6.18	0.1424	6.18
	311.05	4.56-72.87	14	0.1538	4.97	0.1457	5.61	0.1216	5.11	0.0895	8.19
	344.16	4.08-90.97	15	0.1639	5.94	0.1539	8.12	0.1275	4.23	0.1030	10.85
	377.61	8.98-95.05	9	0.1650	3.08	0.1630	7.25	0.1414	3.54	0.0575	5.92
CO2 - n-Heptane	310.66	1.84- 74.64	23	0.1170	2.18	0.1017	5.44	0.0953	3.87	0.0790	8.11
	352.61	4.18-114.58	17	0.1132	0.83	0.1053	1.53	0.0822	1.25	0.0094	8.63
	394.27	11.16-131.38	16	0.1120	2.83	0.1089	5.21	0.0715	2.30	-0.0675	6.03
	477.22	17.28- 97.91	7	0.1560	3.91	0.1642	8.98	0.0901	4.32	-0.0995	7.95
CO2 - n-Decane	462.56	19.36-50.70	4	0.1568	2.34	0.1402	3.46	0.0778	1.85	-0.1293	3.06
	476.96	14.25-50.10	4	0.1621	2.81	0.1455	4.22	0.0770	2.12	-0.1492	3.63
	542.96	19.38-51.00	4	0.2387	4.24	0.2276	6.55	0.1168	3.30	-0.1867	5.41
	583.66	19.76-50.40	4	0.3888	4.70	0.4387	9.26	0.2450	4.30	-0.0644	6.52

TABLE 4.3 Binary interaction coefficients and the deviations in bubble point pressure calculations of Methane systees for the four equations of state using the bubble point pressure criterion

Systee	T (K)	Range of P (ate)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
Methane - Ethane	280.00	28.50-62.10	8	0.0353	2.09	0.0489	1.81	0.0241	1.14	0.0587	1.67
	270.00	22.53-60.22	9	0.0239	1.22	0.0304	3.72	0.0142	0.58	0.0402	1.76
	260.00	17.80-65.18	11	0.0103	1.26	0.0215	3.78	0.0031	0.71	0.0203	1.95
	199.93	3.62-50.35	11	0.0000	2.82	0.0000	3.12	0.0000	2.93	0.0000	3.44
	192.40	2.65-46.40	8	0.0000	2.29	0.0000	3.72	0.0000	2.29	0.0000	3.58
	190.85	2.69-45.60	8	0.0000	1.06	0.0000	2.52	0.0000	1.07	0.0000	2.11
	189.66	2.44-43.15	9	0.0000	1.24	0.0000	3.18	0.0000	1.68	0.0000	2.75
	186.12	2.50-38.65	11	0.0000	1.08	0.0000	4.28	0.0000	1.21	0.0000	3.22
	172.05	2.10-23.05	9	0.0000	1.85	0.0000	3.64	0.0000	1.72	0.0000	1.71
	158.16	1.76-13.55	10	0.0000	3.39	0.0000	5.51	0.0000	3.45	0.0000	3.38
	144.27	1.86- 6.67	7	0.0028	0.74	0.0000	2.62	0.0019	0.66	0.0056	1.78
	130.38	1.91- 3.31	4	0.0115	1.21	0.0000	5.11	0.0101	1.32	0.0090	3.65
Methane - n-Propane	273.16	6.80-95.26	11	0.0215	2.77	0.0251	2.24	0.0132	2.99	0.0386	2.52
	256.49	6.80-88.45	13	0.0059	1.41	0.0150	1.06	0.0043	1.05	0.0175	1.65
	241.49	6.80-88.45	13	0.0103	1.24	0.0150	1.51	0.0041	1.19	0.0300	2.01
	226.49	6.80-74.84	8	0.0159	3.49	0.0230	3.53	0.0131	3.25	0.0359	3.55
	213.72	1.87-63.90	10	0.0056	1.32	0.0087	1.89	0.0010	1.17	0.0229	1.95
	195.16	2.08-48.20	13	0.0094	1.34	0.0156	2.39	0.0049	1.27	0.0120	2.75
	192.26	2.04-45.85	10	0.0062	1.39	0.0103	1.65	0.0017	1.30	0.0105	1.80
	187.55	2.79-39.85	9	0.0123	1.41	0.0111	2.49	0.0034	1.34	0.0116	1.77
	172.05	2.10-23.25	8	0.0242	4.79	0.0150	4.35	0.0074	2.56	0.0221	3.32
	158.16	1.70-13.70	8	0.0255	4.26	0.0144	3.68	0.0125	1.79	0.0213	2.51
	144.27	2.11- 7.35	6	0.0119	2.55	0.0034	4.19	0.0095	2.48	0.0197	3.01
	130.38	1.84- 2.86	3	0.0123	1.69	0.0015	1.83	0.0042	1.03	0.0079	2.10
Methane - n-Butane	283.16	3.47- 95.26	9	0.0139	1.46	0.0208	1.90	0.0000	1.27	0.0160	3.00
	255.36	1.36-108.66	9	0.0244	4.44	0.0205	3.20	0.0021	3.73	0.0225	3.20
	227.56	3.40- 81.44	8	0.0114	4.11	0.0136	4.45	0.0000	3.88	0.0143	3.52
	210.96	1.36- 66.20	10	0.0022	2.11	0.0081	2.52	0.0000	3.43	0.0072	2.86
	194.11	1.36- 46.06	9	0.0095	2.74	0.0147	3.68	0.0013	2.41	0.0115	3.11
	185.96	1.36- 37.35	9	0.0201	2.95	0.0219	3.80	0.0101	2.32	0.0192	2.90
	177.56	1.36- 27.49	8	0.0167	1.44	0.0200	2.47	0.0093	1.14	0.0176	2.27
	166.46	1.36- 19.26	8	0.0231	2.12	0.0194	3.09	0.0111	1.44	0.0245	2.11

TABLE 4.3 (Continued)

System	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
Methane - n-Pentane	273.17	13.62-136.09	10	0.0298	5.91	0.0430	5.12	0.0142	5.79	0.0325	5.50
	248.35	6.82-122.48	10	0.0163	3.85	0.0208	3.77	0.0000	3.99	0.0215	5.53
	223.93	6.82- 81.65	7	0.0091	7.53	0.0124	6.93	0.0000	9.29	0.0101	7.71
	199.87	3.42- 40.83	5	0.0087	5.80	0.0147	5.52	0.0000	7.00	0.0085	7.78
	194.18	6.81- 40.83	4	0.0125	5.55	0.0174	5.04	0.0000	5.80	0.0155	6.90
	192.64	6.82- 40.83	4	0.0219	5.06	0.0263	4.64	0.0081	5.24	0.0240	5.20
	176.22	1.37- 20.43	6	0.0291	2.25	0.0321	2.05	0.0167	2.29	0.0305	3.26
Methane - n-Hexane	423.16	10.00-100.00	10	0.1172	1.69	0.1191	1.26	0.0521	1.12	0.1246	3.21
	373.16	10.00-100.00	10	0.0595	0.51	0.0622	0.76	0.0067	0.80	0.0710	1.50
	348.16	10.00-100.00	10	0.0478	0.29	0.0536	0.25	0.0016	0.48	0.0502	0.92
	323.16	10.00-100.00	10	0.0396	0.37	0.0464	0.35	0.0000	0.50	0.0387	0.43
	298.16	10.00-100.00	10	0.0374	0.66	0.0436	0.55	0.0009	0.87	0.0335	0.70
	273.17	1.71-149.69	16	0.0427	1.81	0.0492	2.18	0.0117	1.28	0.0520	1.53
	248.15	1.37-159.01	17	0.0400	4.14	0.0450	4.90	0.0132	3.63	0.0586	3.76
	223.16	1.37-115.67	16	0.0353	6.07	0.0384	6.68	0.0127	5.71	0.0515	7.05
	210.16	1.37- 81.65	10	0.0526	1.91	0.0565	2.27	0.0307	1.84	0.0601	2.00
	198.06	1.35- 68.04	10	0.0455	1.25	0.0499	1.23	0.0253	1.27	0.0505	1.31

TABLE 4.4 Binary interaction coefficients and the deviations in bubble point pressure calculations of Methane systems for the four equations of state using the fugacity criterion

System	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
Methane - Ethane	280.00	28.50-62.10	8	0.0353	2.09	0.0518	2.14	0.0274	1.36	0.0611	2.25
	270.00	22.53-60.22	9	0.0239	1.22	0.0366	4.30	0.0184	0.60	0.0397	2.56
	260.00	17.80-65.18	11	0.0103	1.26	0.0200	2.01	0.0065	0.75	0.0201	1.97
	199.93	3.62-50.35	11	0.0000	2.82	0.0000	3.12	0.0000	2.93	0.0000	3.44
	192.40	2.65-46.40	8	0.0000	2.29	0.0000	3.72	0.0000	2.29	0.0000	3.58
	190.85	2.69-45.60	8	0.0000	1.06	0.0000	2.52	0.0000	1.07	0.0000	2.11
	189.66	2.44-43.15	9	0.0000	1.24	0.0000	3.18	0.0000	1.68	0.0000	2.75
	186.12	2.50-38.65	11	0.0000	1.08	0.0000	4.28	0.0000	1.21	0.0000	3.22
	172.05	2.10-23.05	9	0.0000	1.85	0.0000	3.64	0.0000	1.72	0.0000	1.71
	158.16	1.76-13.55	10	0.0000	3.39	0.0000	5.51	0.0000	3.45	0.0000	3.38
	144.27	1.86- 6.67	7	0.0044	1.12	0.0000	2.62	0.0035	1.03	0.0056	1.78
	130.38	1.91- 3.31	4	0.0091	1.27	0.0000	5.11	0.0056	1.44	0.0087	3.79
Methane - n-Propane	273.16	6.80-95.26	11	0.0250	2.88	0.0348	3.11	0.0156	3.06	0.0444	3.01
	256.49	6.80-88.45	13	0.0059	1.41	0.0200	1.83	0.0000	1.32	0.0187	1.97
	241.49	6.80-88.45	13	0.0132	1.37	0.0213	2.60	0.0064	1.26	0.0307	2.11
	226.49	6.80-74.84	8	0.0159	3.49	0.0268	3.74	0.0100	3.40	0.0324	3.80
	213.72	1.87-63.90	10	0.0056	1.32	0.0118	2.18	0.0005	2.08	0.0221	1.99
	195.16	2.08-48.20	13	0.0095	1.34	0.0135	3.16	0.0049	1.27	0.0121	2.77
	192.26	2.04-45.85	10	0.0051	1.41	0.0103	1.65	0.0011	1.34	0.0096	1.86
	187.55	2.79-39.85	9	0.0123	1.41	0.0111	2.49	0.0078	1.43	0.0101	2.01
	172.05	2.10-23.25	8	0.0242	4.79	0.0200	5.10	0.0200	4.40	0.0213	5.45
	158.16	1.70-13.70	8	0.0255	4.26	0.0109	4.66	0.0217	3.97	0.0198	4.44
	144.27	2.11- 7.35	6	0.0145	2.57	0.0000	5.14	0.0105	2.49	0.0188	3.56
	130.38	1.84- 2.86	3	0.0123	1.69	0.0000	2.34	0.0087	1.71	0.0077	2.13
Methane - n-Butane	283.16	3.47- 95.26	9	0.0146	1.48	0.0260	2.56	0.0000	1.27	0.0158	3.22
	255.36	1.36-108.66	9	0.0244	4.44	0.0330	5.54	0.0019	3.73	0.0215	4.31
	227.56	3.40- 81.44	8	0.0114	4.18	0.0188	4.83	0.0000	3.88	0.0135	3.55
	210.96	1.36- 66.20	10	0.0042	2.15	0.0112	2.63	0.0000	3.43	0.0072	2.86
	194.11	1.36- 46.06	9	0.0105	2.76	0.0153	3.74	0.0017	2.42	0.0115	3.11
	185.96	1.36- 37.35	9	0.0227	3.30	0.0222	3.81	0.0146	2.91	0.0190	2.91
	177.56	1.36- 27.49	8	0.0170	1.46	0.0207	2.52	0.0095	1.16	0.0166	2.37
	166.46	1.36- 19.26	8	0.0231	2.12	0.0193	3.09	0.0161	1.82	0.0248	2.17

TABLE 4.4 (Continued)

System	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
Methane - n-Pentane	273.17	13.62-136.09	10	0.0201	7.24	0.0487	5.42	0.0000	7.08	0.0304	5.56
	248.35	6.82-122.48	10	0.0057	5.21	0.0285	4.35	0.0000	3.99	0.0212	5.61
	223.93	6.82- 81.65	7	0.0000	7.61	0.0161	7.38	0.0000	9.29	0.0101	7.71
	199.87	3.42- 40.83	5	0.0050	6.04	0.0105	5.81	0.0000	7.00	0.0079	8.82
	194.18	6.81- 40.83	4	0.0124	5.57	0.0173	5.04	0.0000	5.80	0.0152	6.91
	192.64	6.82- 40.83	4	0.0218	5.08	0.0254	4.66	0.0081	5.24	0.0229	5.83
	176.22	1.37- 20.43	6	0.0291	2.25	0.0321	2.05	0.0166	2.29	0.0307	3.38
Methane - n-Hexane	423.16	10.00-100.00	10	0.1135	1.77	0.1317	2.38	0.0450	1.41	0.1162	3.32
	373.16	10.00-100.00	10	0.0589	0.52	0.0757	2.57	0.0050	0.89	0.0703	1.84
	348.16	10.00-100.00	10	0.0438	1.02	0.0528	0.31	0.0000	0.59	0.0501	0.92
	323.16	10.00-100.00	10	0.0385	0.48	0.0470	0.45	0.0000	0.50	0.0387	0.43
	298.16	10.00-100.00	10	0.0320	1.73	0.0428	0.62	0.0000	0.92	0.0329	0.77
	273.17	1.71-149.69	16	0.0409	1.86	0.0520	2.53	0.0083	1.71	0.0487	2.08
	248.15	1.37-159.01	17	0.0349	4.62	0.0521	5.97	0.0099	3.89	0.0510	4.44
	223.16	1.37-115.67	16	0.0349	6.11	0.0428	6.80	0.0063	6.80	0.0507	7.12
	210.16	1.37- 81.65	10	0.0526	1.91	0.0578	2.34	0.0307	1.84	0.0586	2.21
	198.06	1.35- 68.04	10	0.0454	1.26	0.0483	1.32	0.0252	1.28	0.0511	1.43

TABLE 4.5 Binary interaction coefficients and the deviations in bubble point pressure calculations of Ethane systems for the four equations of state using the bubble point pressure criterion

System	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
Ethane - n-Propane	310.94	13.61-40.82	5	0.0000	1.59	0.0000	1.62	0.0000	0.69	0.0000	0.55
	333.16	23.81-44.23	4	0.0000	0.76	0.0000	1.62	0.0000	0.70	0.0000	1.71
Ethane - i-Butane	311.27	10.55-45.18	5	0.0000	3.27	0.0000	5.01	0.0000	2.92	0.0000	2.35
	344.49	13.00-41.37	5	0.0000	0.53	0.0000	2.66	0.0000	0.61	0.0000	2.02
Ethane - n-Pentane	277.60	6.80-23.81	4	0.0069	0.40	0.0000	1.10	0.0000	0.99	0.0000	1.53
	310.94	6.80-40.82	6	0.0000	0.75	0.0000	0.95	0.0000	1.06	0.0000	1.20
	344.27	6.80-47.63	6	0.0055	1.82	0.0000	1.78	0.0000	1.49	0.0000	3.65
	410.94	13.61-47.63	6	0.0278	1.19	0.0139	2.09	0.0173	1.17	0.0125	1.61

TABLE 4.6 Binary interaction coefficients and the deviations in bubble point pressure calculations of Ethane systeas for the four equations of state using the fugacity criterion

Systee	T (K)	Range of P (ata)	N	SRK EOS Kij	SRK EOS AAD(%)	PR EOS Kij	PR EOS AAD(%)	PT EOS Kij	PT EOS AAD(%)	SW EOS Kij	SW EOS AAD(%)
Ethane - n-Propane	310.94	13.61-40.82	5	0.0000	1.59	0.0000	1.62	0.0000	0.69	0.0000	0.55
	333.16	23.81-44.23	4	0.0000	0.76	0.0000	1.62	0.0000	0.70	0.0000	1.71
Ethane - i-Butane	311.27	10.55-45.18	5	0.0000	3.27	0.0005	5.01	0.0000	2.92	0.0040	2.38
	344.49	13.00-41.37	5	0.0033	0.59	0.0000	2.66	0.0000	0.61	0.0000	2.02
Ethane - n-Pentane	277.60	6.80-23.81	4	0.0071	0.41	0.0000	1.10	0.0000	0.99	0.0011	1.56
	310.94	6.80-40.82	6	0.0000	0.75	0.0012	1.01	0.0000	1.06	0.0012	1.21
	344.27	6.80-47.63	6	0.0060	1.68	0.0055	1.81	0.0033	1.50	0.0025	3.72
	410.94	13.61-47.63	6	0.0285	1.21	0.0146	2.12	0.0187	1.19	0.0137	1.73

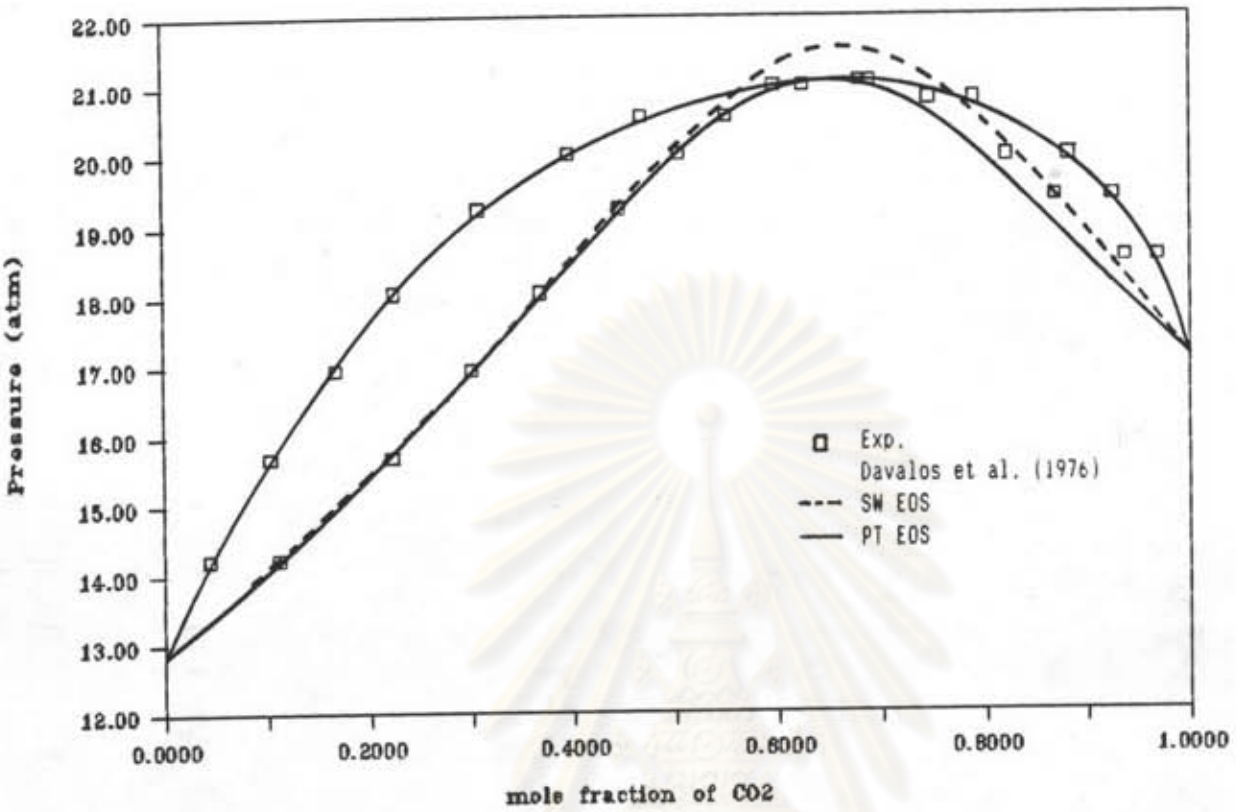

FIGURE 4.1 Comparison of calculated and experimental VLE for CO_2-Ethane system at 250 K

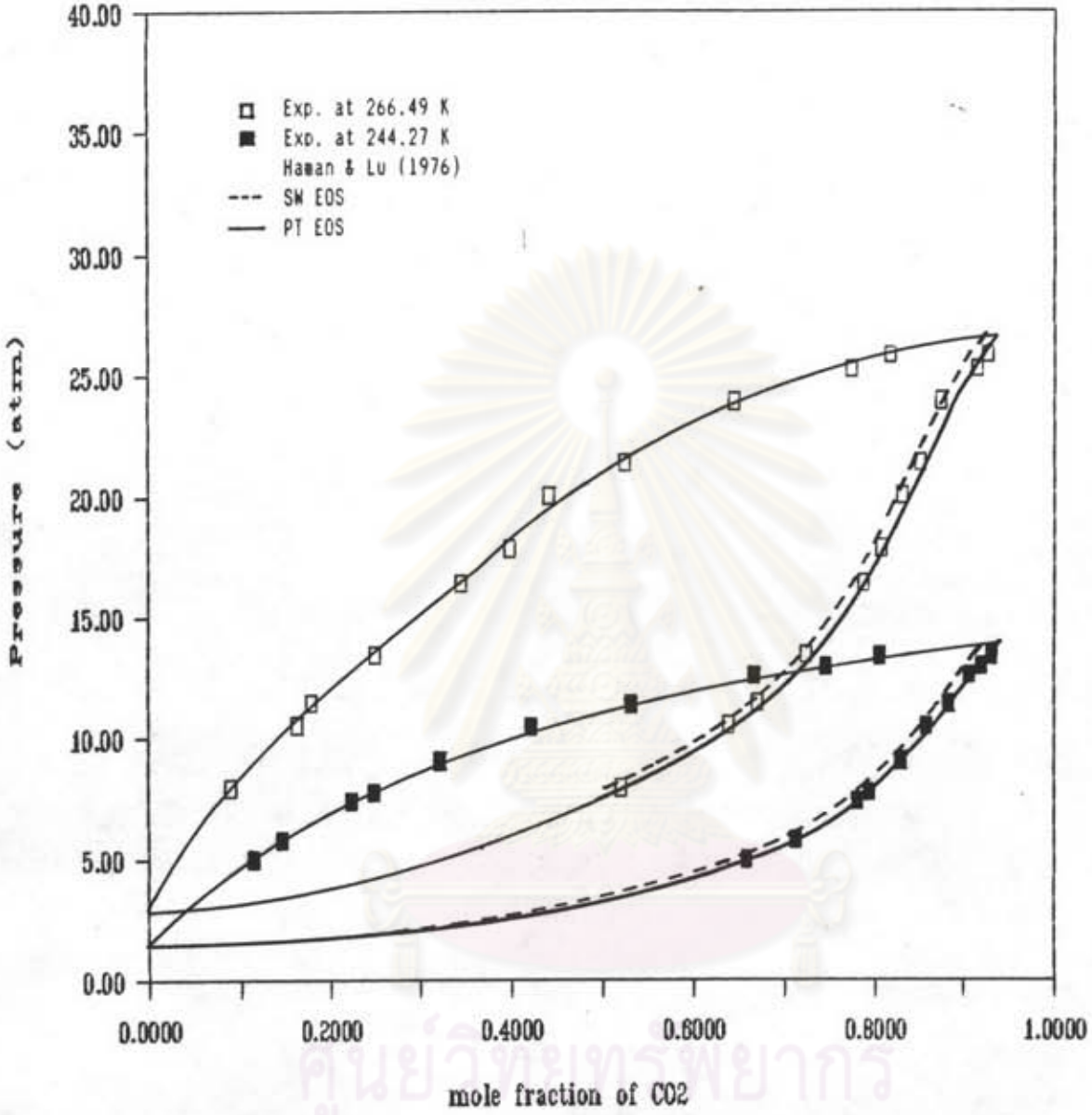

FIGURE 4.2 Comparison of calculated and experimental VLE for CO_2-n-Propane system

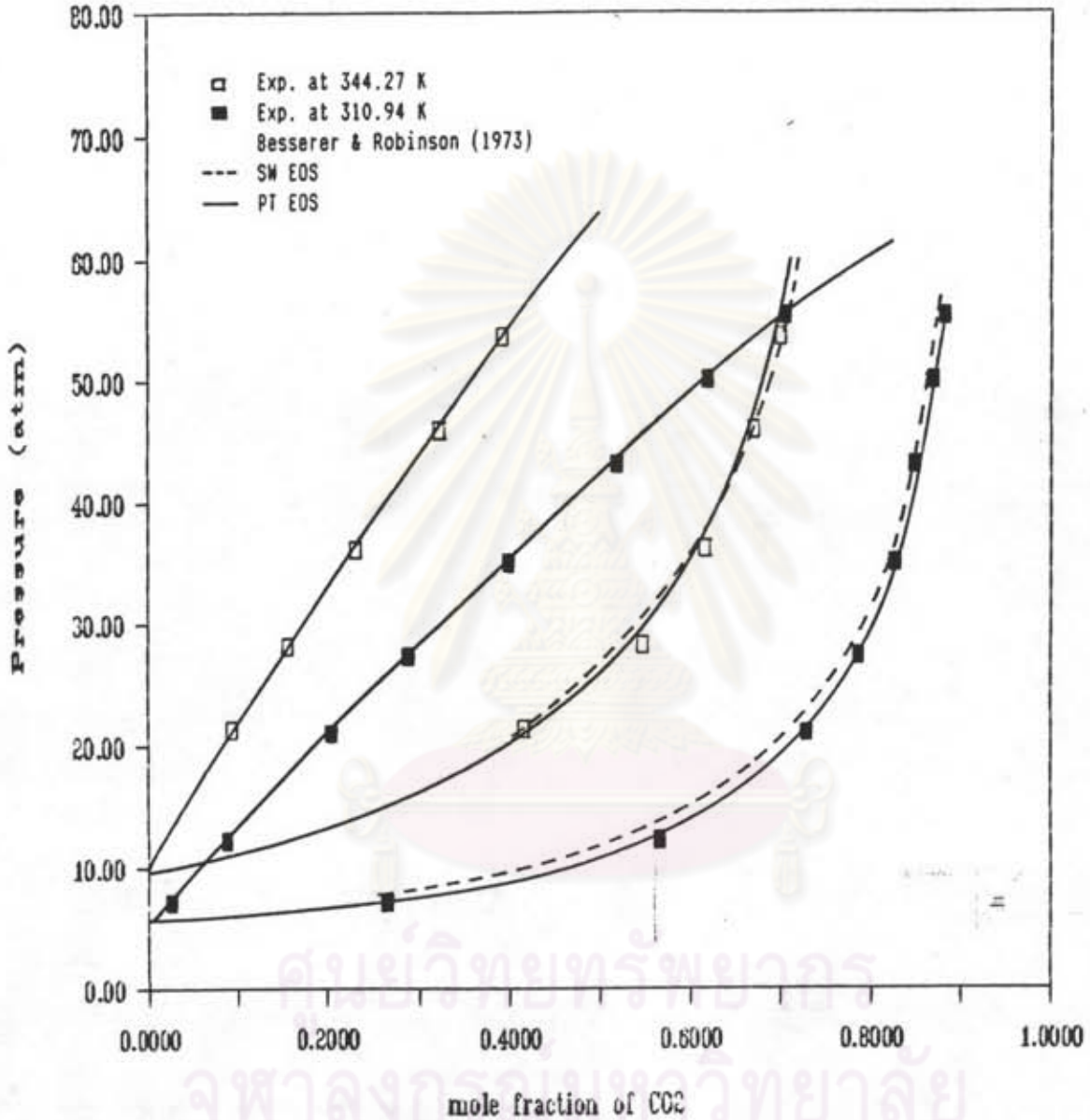

FIGURE 4.3 Comparison of calculated and experimental VLE for CO_2-i-Butane system

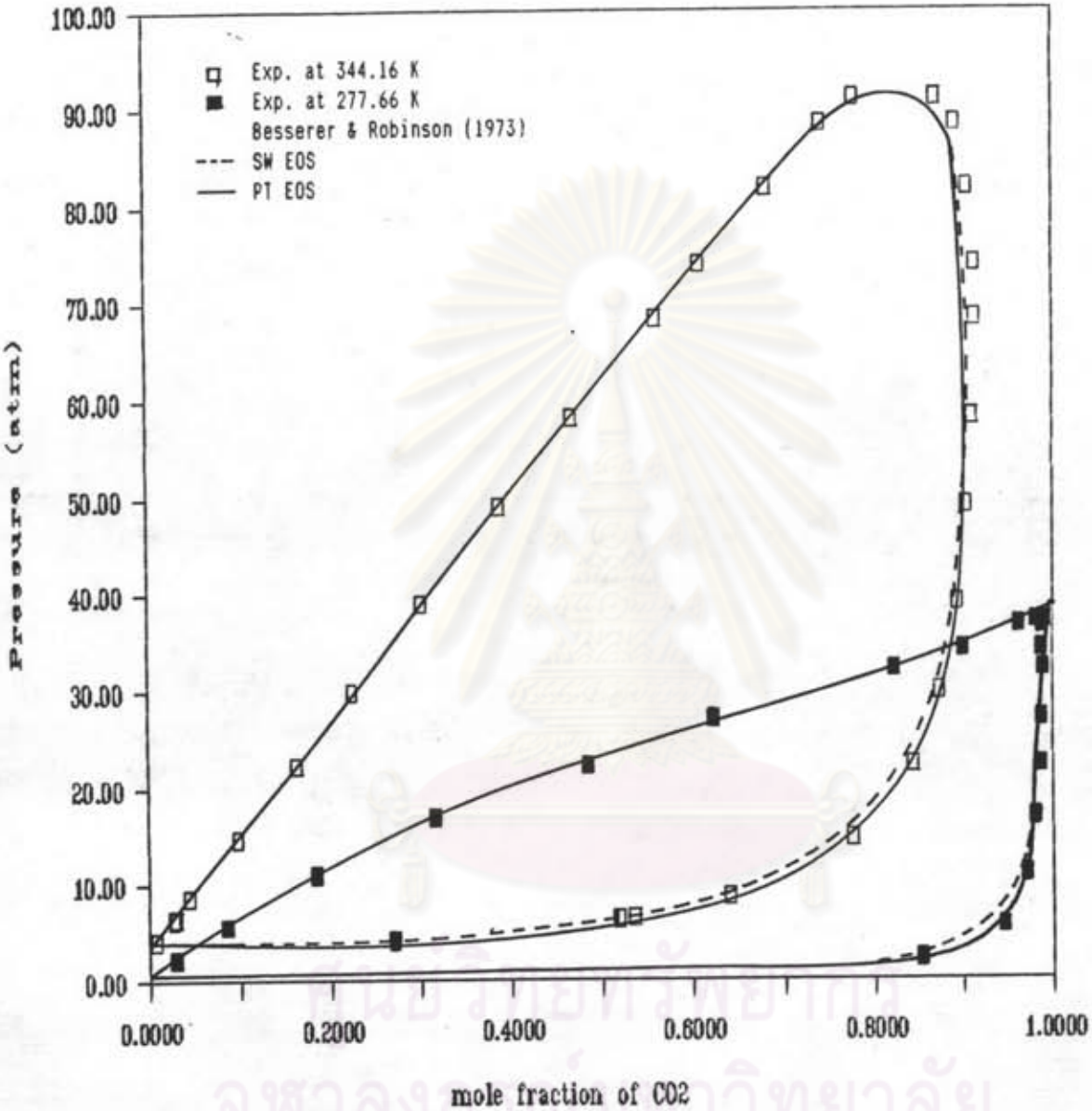

FIGURE 4.4 Comparison of calculated and experimental VLE for CO_2-n-Pentane system

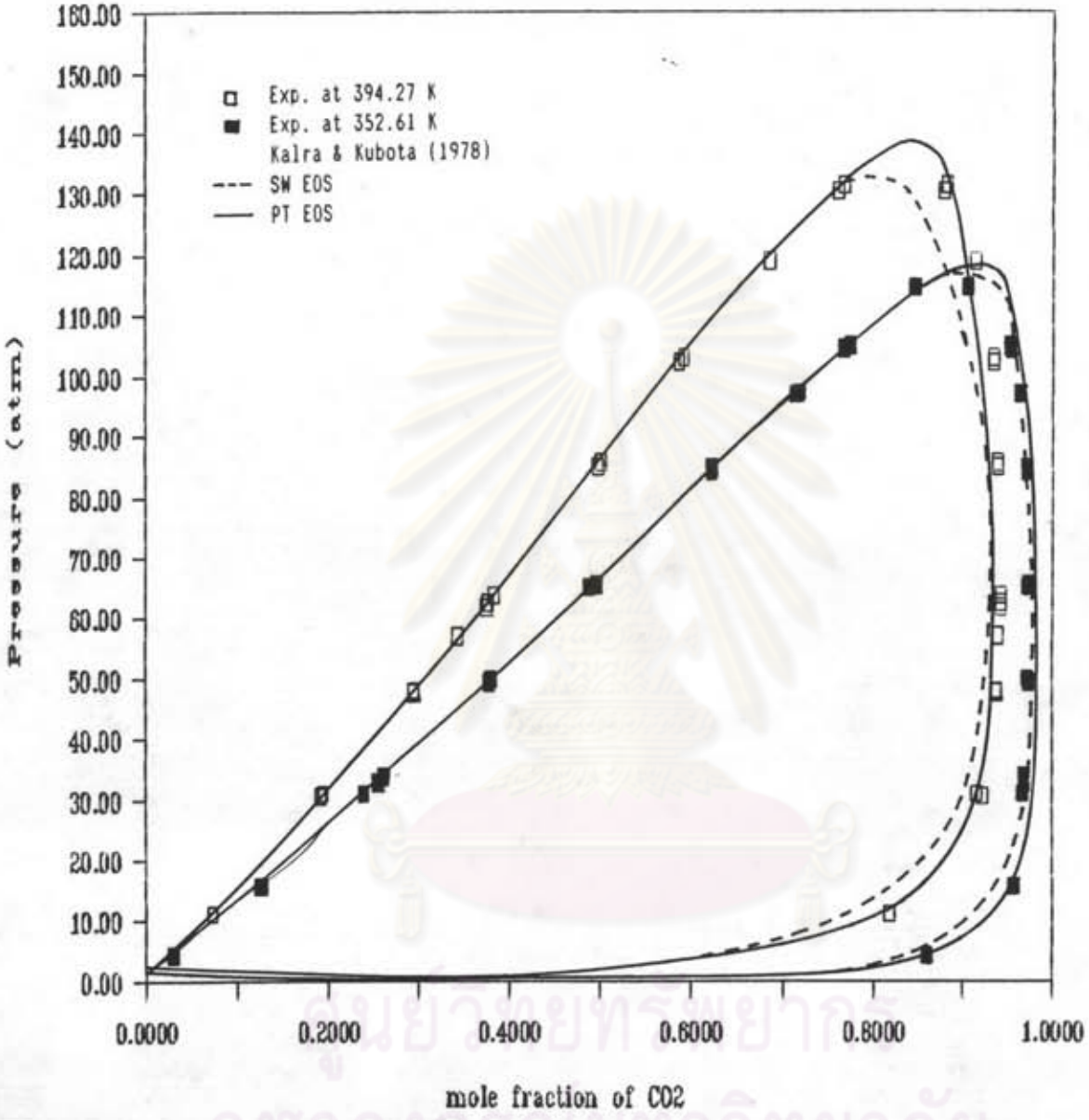

FIGURE 4.5 Comparison of calculated and experimental VLE for CO_2-n-Heptane system

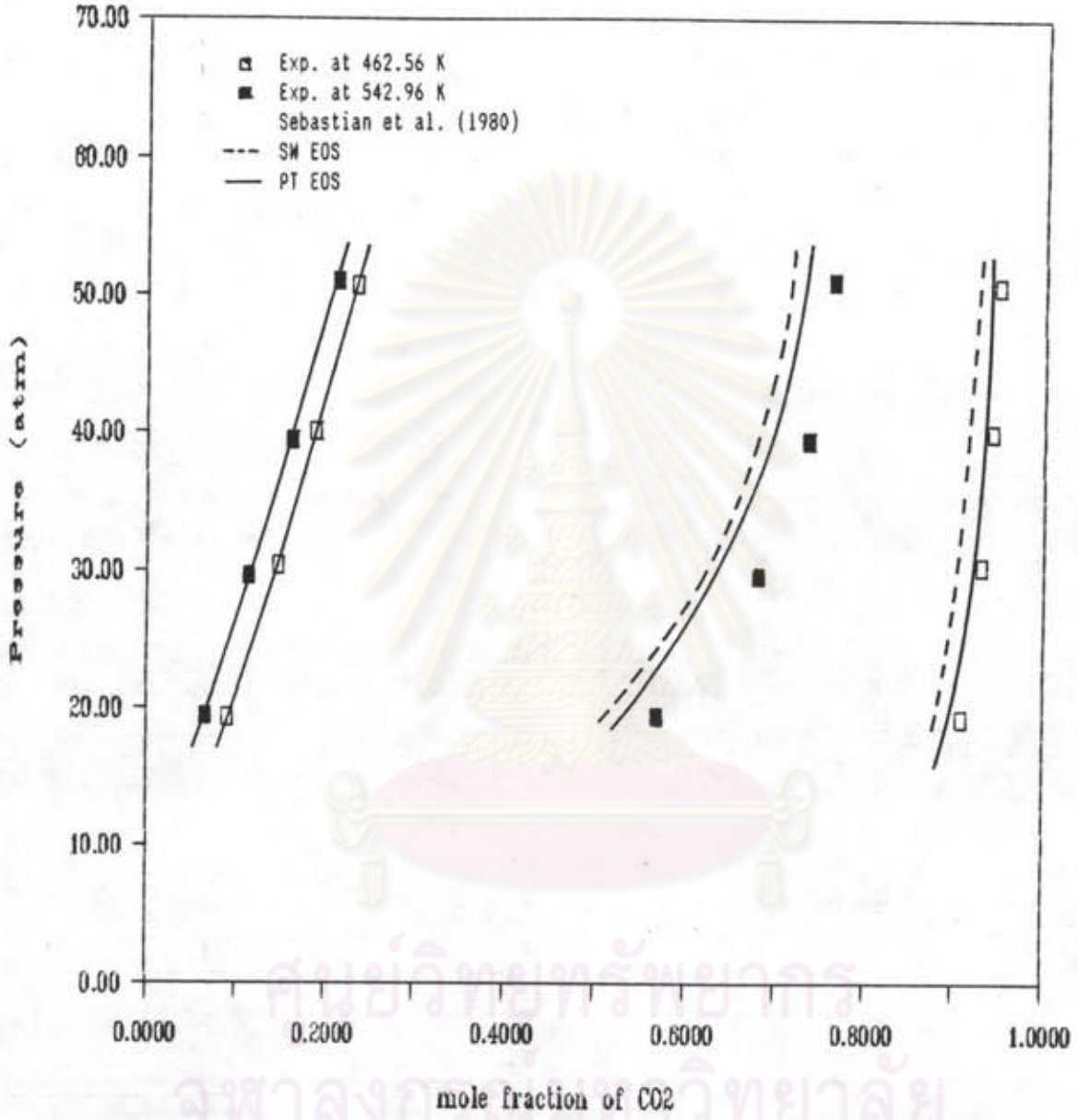

FIGURE 4.6 Comparison of calculated and experimental VLE for CO_2-n-Decane system

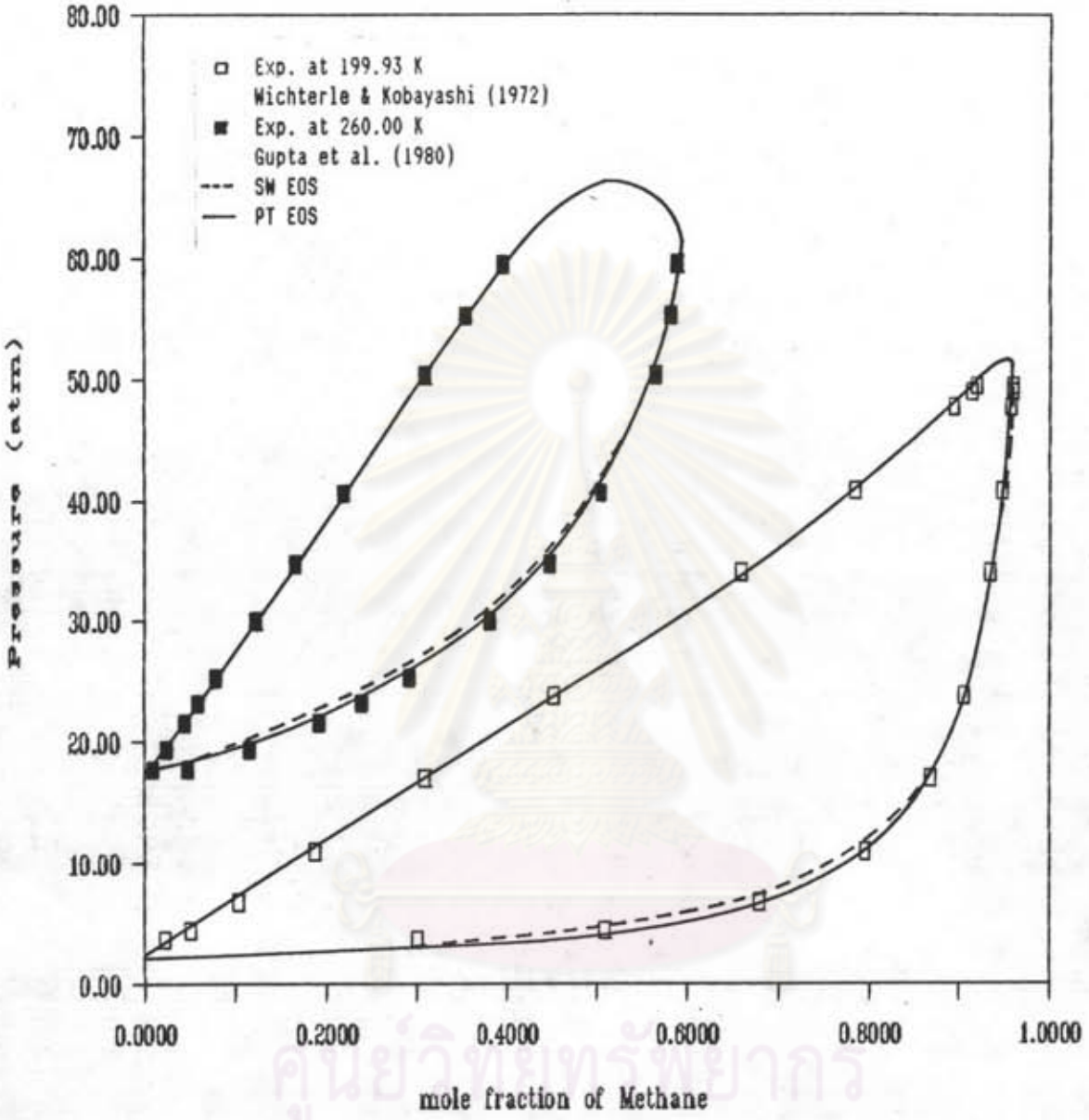

FIGURE 4.7 Comparison of calculated and experimental VLE for Methane-Ethane system

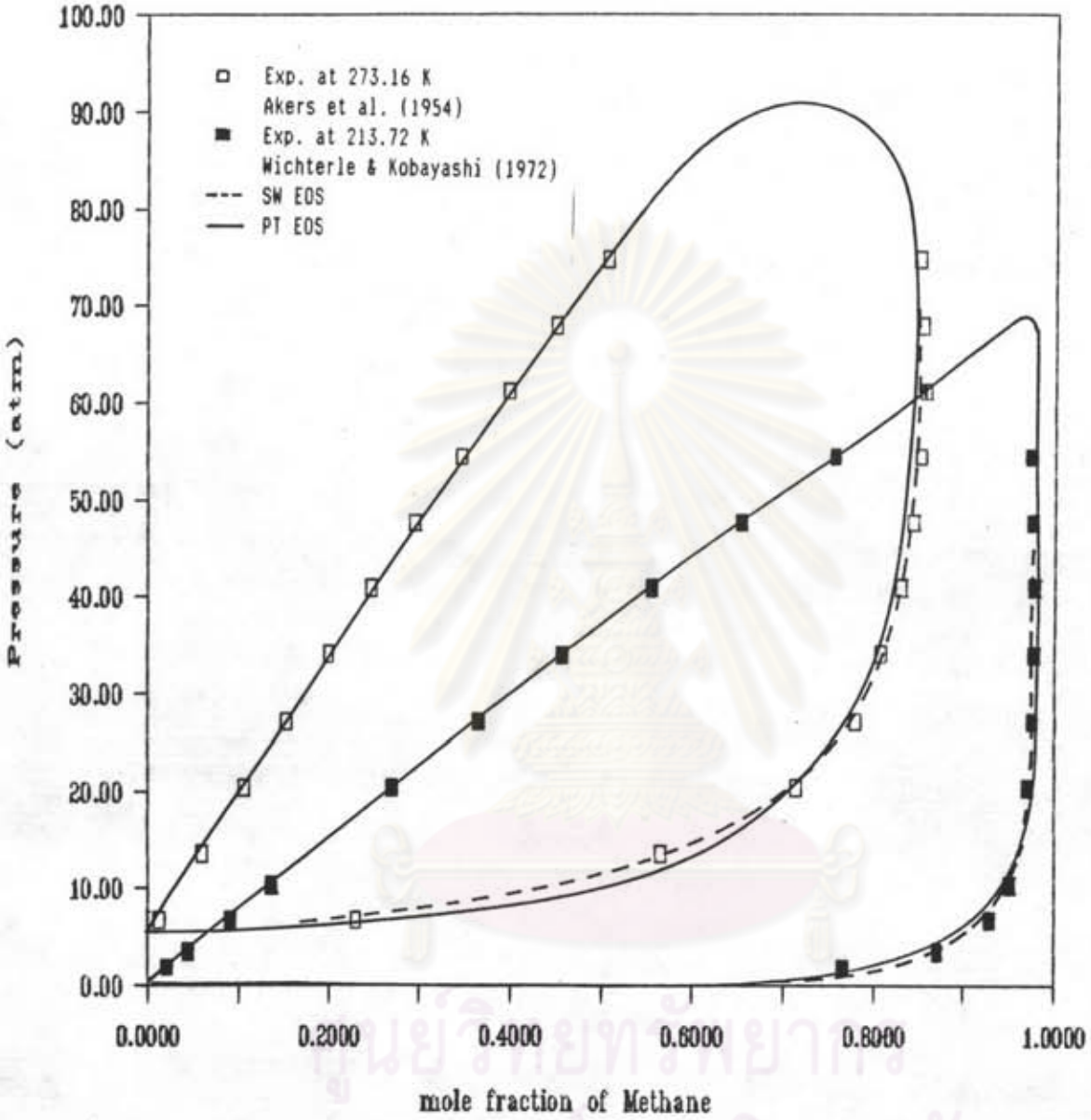

FIGURE 4.8 Comparison of calculated and experimental VLE for Methane-n-Propane system

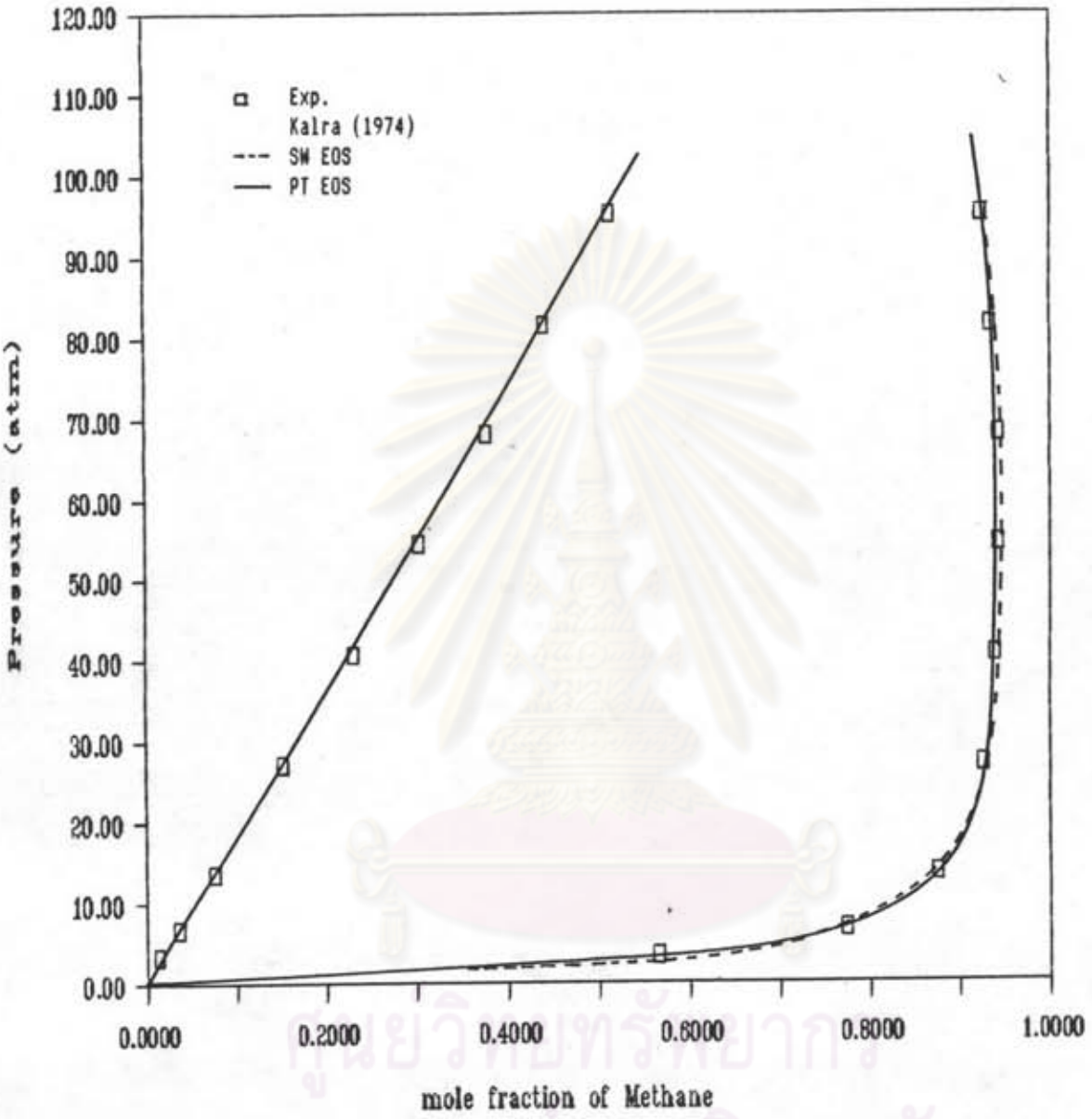

FIGURE 4.9 Comparison of calculated and experimental VLE for Methane-n-Butane system at 283.16 K

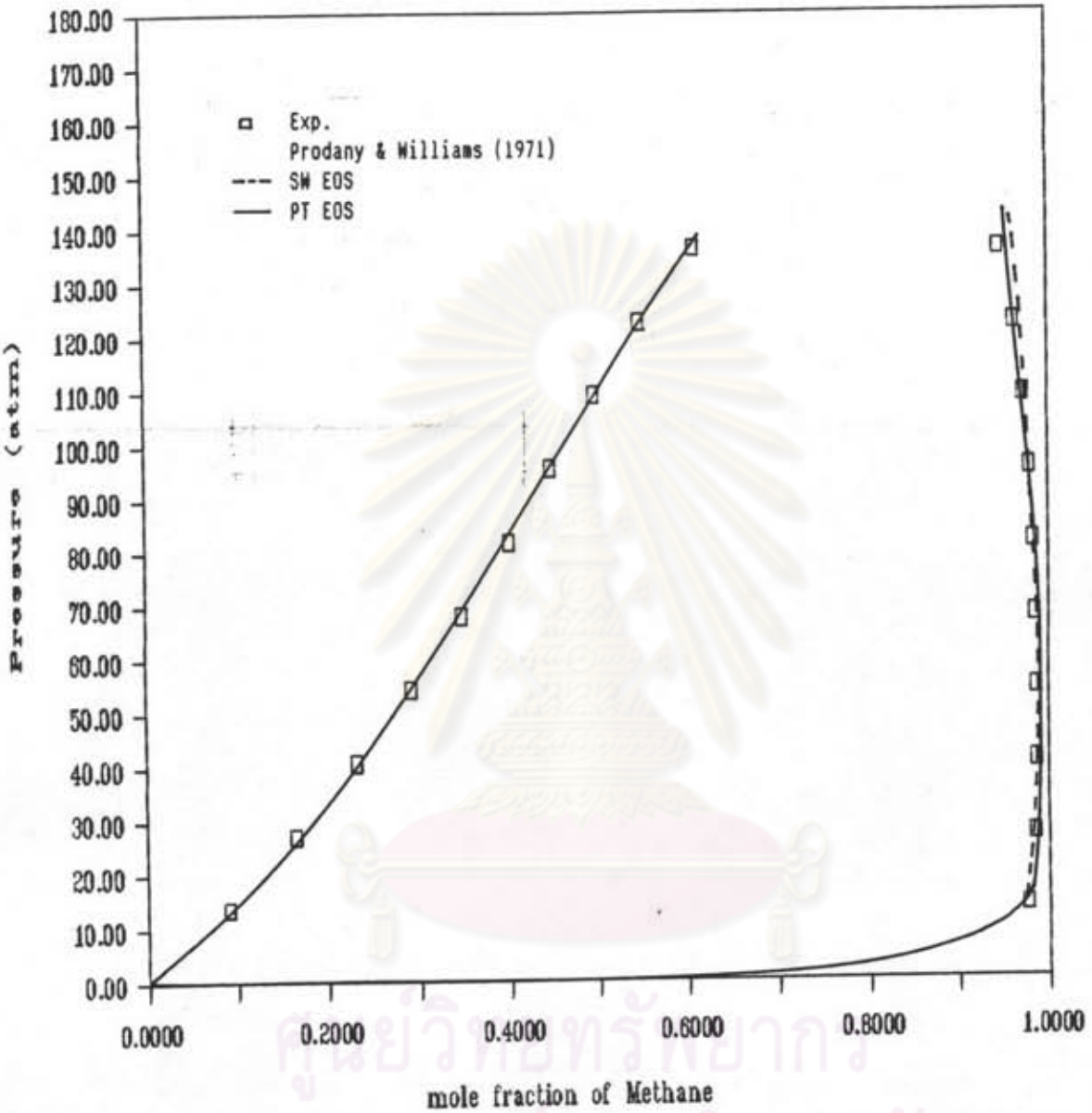

FIGURE 4.10 Comparison of calculated and experimental VLE for Methane-n-Pentane system at 273.17 K

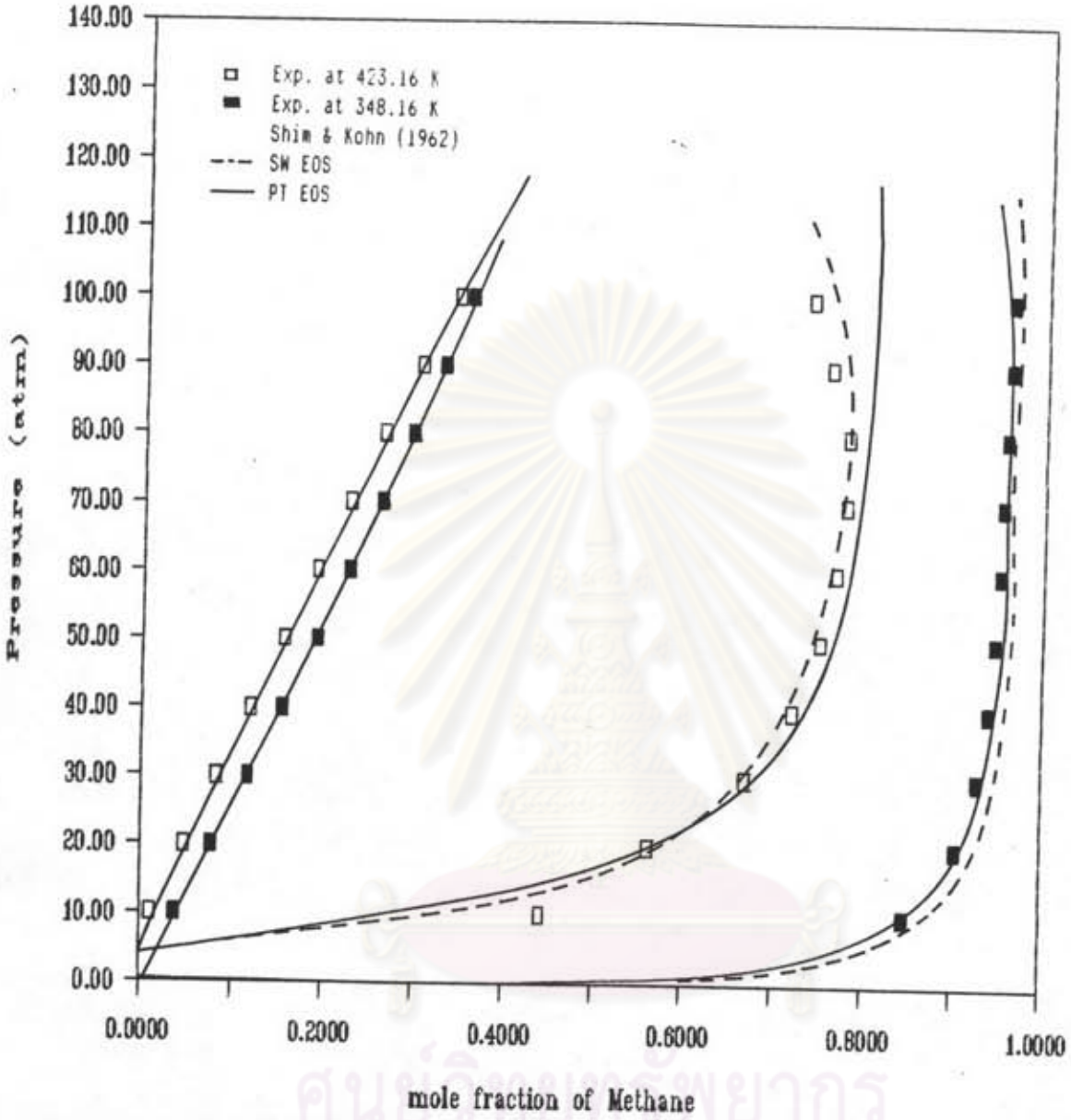

FIGURE 4.11 Comparison of calculated and experimental VLE for Methane-n-Hexnae system

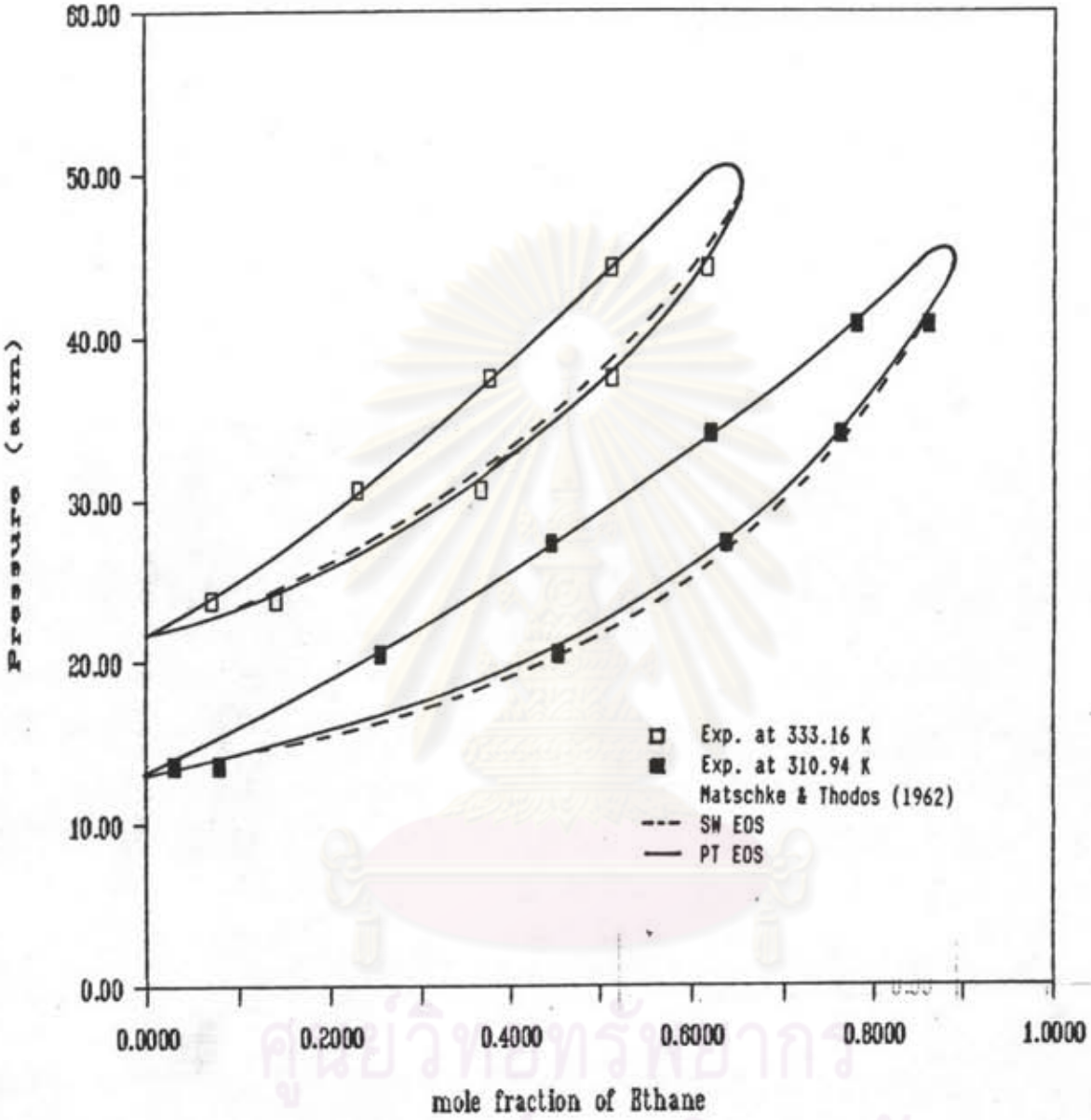

FIGURE 4.12 Comparison of calculated and experimental VLE for Ethane-n-Propane system

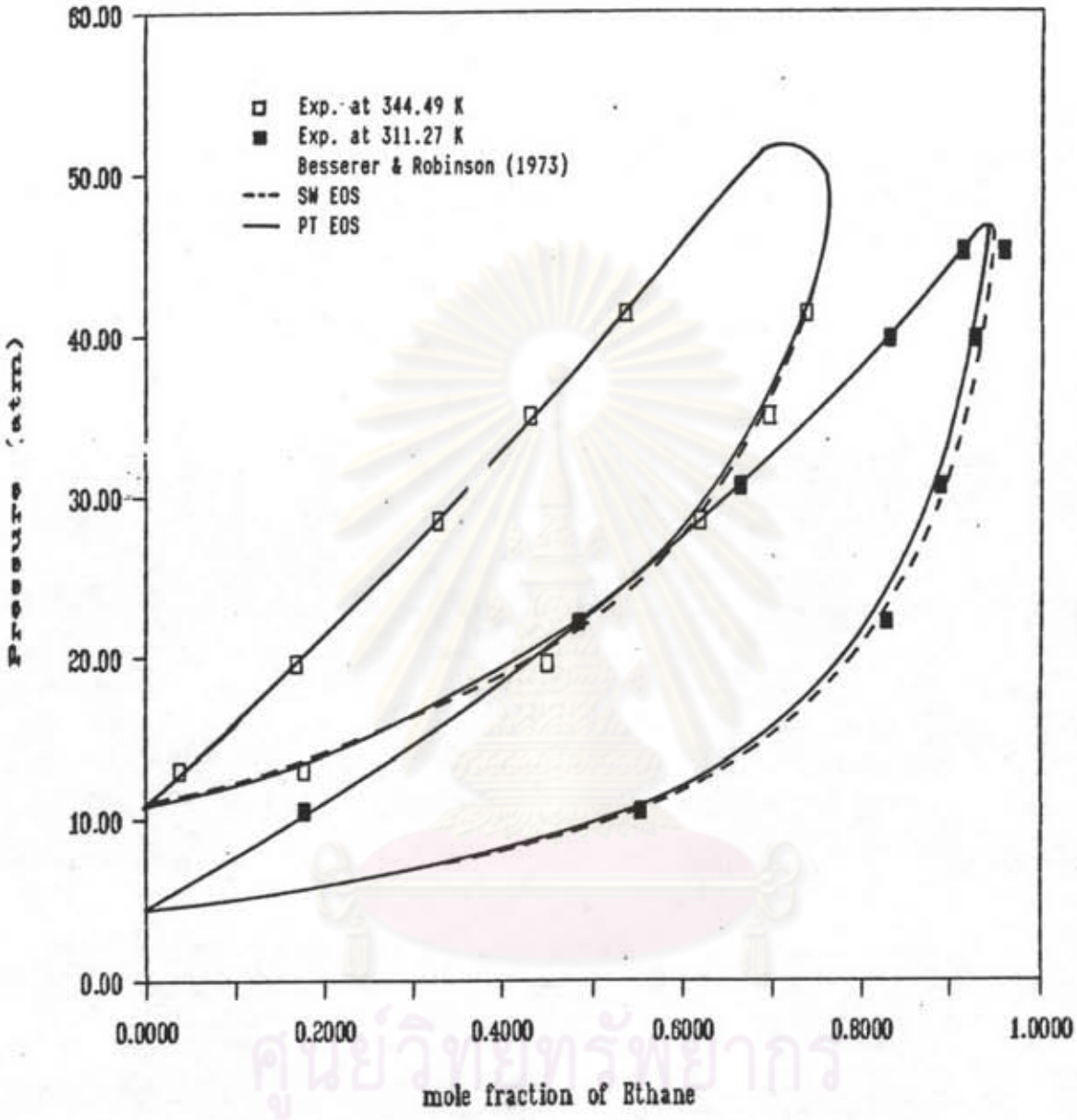

FIGURE 4.13 Comparison of calculated and experimental VLE for Ethane-i-Butane system

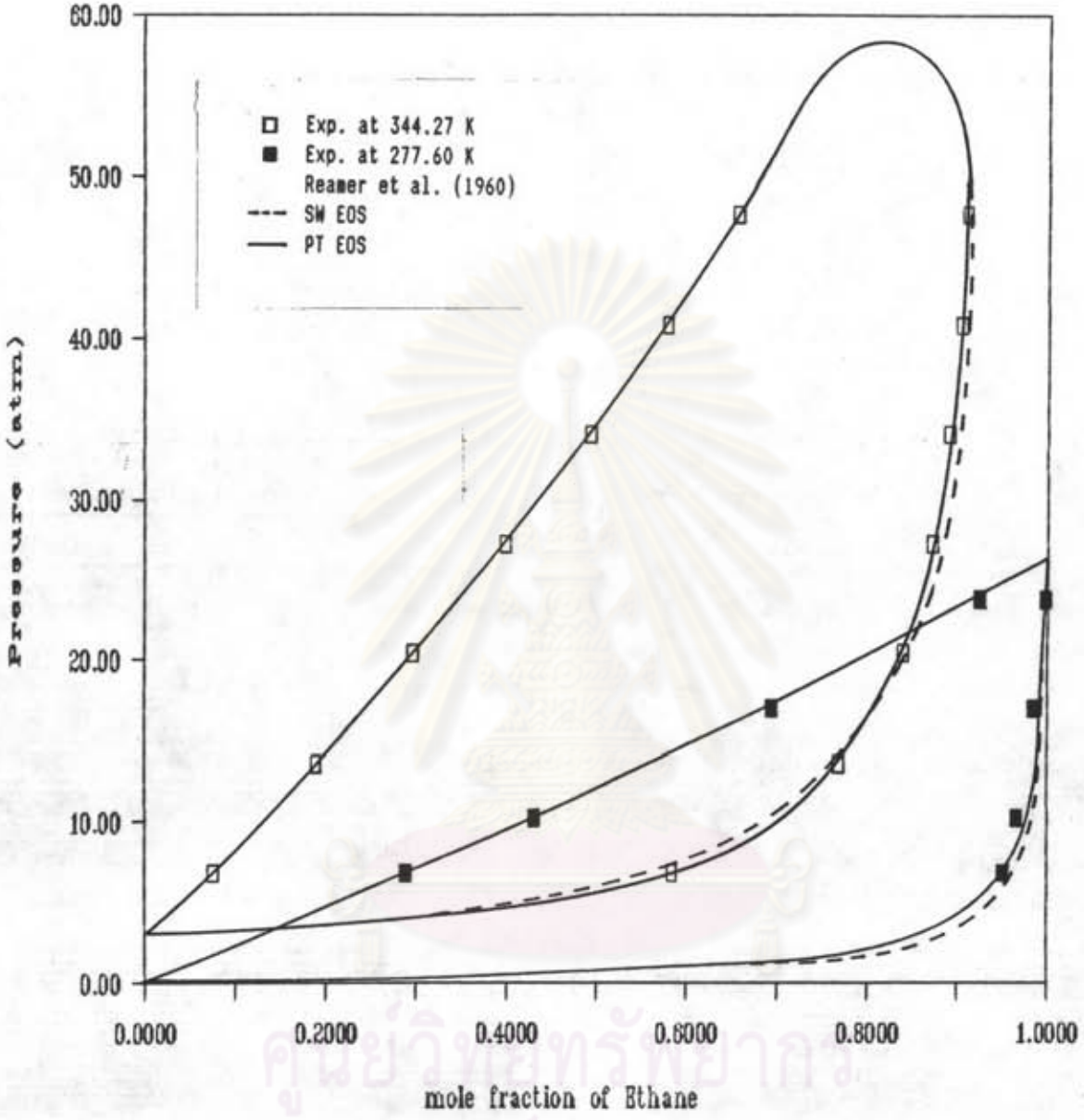

FIGURE 4.14 Comparison of calculated and experimental VLE for Ethane-n-Pentane system