ภาคผนวก ก

ตารางข้อมูลการทดลอง

ตารางที่ ก.1 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	91.00	74.70	44.30	24.80	19.40	22.50	27.20	24.20	24.60
1	91.00	89.40	54.90	25.40	19.60	23.90	27.10	24.60	25.00
2	91.00	89.80	61.10	25.10	11.10	19.00	27.00	24.90	25.30
3	91.00	90.00	62.90	25.00	1.60	2.50	27.00	25.30	25.50
4	90.80	90.10	65.70	25.00	1.50	2.20	27.10	25.50	25.70
5	90.50	89.90	68.10	25.10	1.50	2.10	27.00	25.60	25.80
6	90.30	89.70	70.20	24.50	1.70	2.20	27.00	25.70	25.90
7	27.60	89.00	71.80	25.00	3.10	5.00	26.90	25.80	26.00
8	27.40	33.50	61.70	25.40	5.50	9.30	26.90	25.90	26.10
9	27.50	28.60	50.70	24.70	7.80	11.20	27.00	26.00	26.10
10	27.50	27.90	44.90	25.00	9.50	12.10	27.00	26.10	26.20
11	27.50	27.60	41.20	25.10	10.90	12.50	27.10	26.20	26.30
12	27.40	27.50	39.10	25.50	12.10	12.70	27.10	26.10	25.00
13	27.30	27.30	40.70	25.50	12.00	9.50	27.20	23.20	20.30
14	27.20	27.30	41.00	26.10	13.90	11.40	27.10	20.30	18.20
15	27.30	27.20	40.20	26.00	14.70	13.20	27.10	19.30	18.80
16	27.20	27.20	39.40	25.80	15.50	14.80	27.10	19.00	19.40
17	27.30	27.20	38.80	25.70	16.40	16.10	27.10	19.40	19.70
18	27.30	27.20	38.10	25.10	17.00	17.10	27.10	19.90	20.20
19	27.30	27.20	37.40	25.20	17.50	17.70	27.10	20.40	20.60
20	27.40	27.30	37.00	25.30	18.00	18.20	27.10	20.90	20.90
21	27.50	27.30	36.50	25.10	18.30	18.50	27.10	21.30	21.30
22	27.50	27.20	35.90	25.20	18.40	18.70	27.20	21.60	21.50
23	27.40	27.30	35.40	25.40	18.50	18.80	27.10	21.90	21.80
24	27.50	27.30	35.00	25.10	18.70	19.00	27.10	22.20	22.10
25	27.50	27.30	34.70	24.70	18.80	19.10	27.20	22.40	22.30
26	27.50	27.30	34.20	24.20	18.80	19.30	27.20	22.60	22.60
27	27.50	27.20	33.70	25.20	18.70	19.40	27.20	22.80	22.80
28	27.50	27.20	33.50	24.50	18.80	19.40	27.20	23.10	23.00
29	27.40	27.20	32.90	25.10	18.80	19.50	27.20	23.20	23.20
30	27.50	27.30	32.70	25.80	19.00	19.60	27.20	23.50	23.40
31	27.50	27.20	32.40	25.90	19.10	19.70	27.20	23.70	23.50
32	27.40	27.20	32.00	26.00	19.20	20.00	27.20	23.70	23.70
33	27.40	27.20	31.70	25.40	19.40	20.20	27.20	23.90	23.80
34	27.40	27.10	31.40	25.20	19.50	20.50	27.20	24.00	23.90

ตารางที่ ก.2 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	79.00	56.90	33.90	25.20	20.10	21.30	27.20	24.90	25.00
1	80.70	78.30	44.30	25.20	20.30	21.60	27.20	25.20	25.30
2	81.20	79.60	52.00	24.70	20.70	22.00	27.20	25.50	25.50
3	81.70	80.50	56.70	25.30	20.90	22.60	27.20	25.70	25.70
4	81.90	81.00	59.90	24.90	21.30	23.30	27.10	25.90	25.90
5	82.20	81.30	60.30	25.10	5.50	6.80	27.20	26.00	26.10
6	82.40	81.60	61.80	24.50	5.80	6.50	27.10	26.00	26.10
7	82.60	81.80	63.60	24.50	6.30	6.90	27.10	26.10	26.20
8	82.70	81.90	65.20	26.60	6.40	6.90	27.10	26.10	26.20
9	82.80	82.00	66.70	26.70	5.70	6.30	27.10	26.20	26.10
10	82.80	82.20	68.00	26.90	4.60	5.50	27.30	26.40	26.20
11	83.00	82.60	69.40	27.50	4.00	4.70	27.50	26.60	26.30
12	82.80	81.90	70.60	27.70	3.40	4.70	27.70	26.70	26.40
13	27.60	78.10	70.90	27.50	5.90	6.80	27.80	26.70	26.50
14	27.80	29.90	58.10	26.20	7.50	9.00	27.90	26.70	26.60
15	27.90	28.70	49.60	26.40	9.30	10.60	27.80	26.90	26.70
16	27.90	28.30	44.90	25.60	10.50	11.80	27.70	27.00	26.80
17	27.90	28.10	41.80	25.50	11.70	13.00	27.80	27.10	26.90
18	28.00	28.10	40.00	25.80	12.60	13.90	27.70	26.90	25.90
19	27.90	28.00	41.30	25.30	13.30	14.80	27.70	24.70	21.90
20	28.00	28.10	41.80	25.10	13.60	15.50	27.70	21.70	19.70
21	27.90	28.10	41.10	26.30	14.50	16.00	27.70	20.60	20.20
22	28.00	28.10	40.30	25.80	15.30	16.60	27.80	20.40	20.80
23	28.00	28.00	39.50	26.10	16.00	17.20	27.70	20.60	21.10
24	28.00	27.90	38.90	26.00	16.70	17.70	27.70	21.20	21.40
25	27.90	27.90	38.10	25.70	17.30	18.10	27.80	21.70	21.70
26	28.00	28.00	37.50	25.00	17.80	18.50	27.80	22.00	22.00
27	28.00	28.00	36.90	25.10	18.10	18.70	27.80	22.40	22.30
28	28.00	27.90	36.40	25.00	18.30	18.80	27.70	22.50	22.50
29	27.90	27.80	35.70	25.10	18.40	19.10	27.70	22.90	22.80
30	28.00	28.00	35.40	25.20	18.60	19.20	27.70	23.10	23.00
31	28.00	27.90	34.90	25.00	18.70	19.20	27.70	23.20	23.20
32	28.00	27.90	34.50	24.90	18.80	19.30	27.70	23.50	23.40
33	28.10	27.90	34.10	25.00	18.90	19.30	27.70	23.60	23.60
34	28.00	27.80	33.70	25.20	18.90	19.50	27.60	23.80	23.80
35	28.10	27.80	33.40	25.40	19.00	19.60	27.70	23.90	23.90
36	28.00	27.80	32.90	25.50	19.20	19.90	27.70	24.20	24.20
37	28.00	27.80	32.70	25.80	19.40	20.20	27.80	24.40	24.30

ตารางที่ ก.2 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
38	28.00	27.80	32.40	25.80	19.70	20.50	27.70	24.50	24.40
39	27.90	27.70	32.00	26.00	20.00	21.00	27.70	24.70	24.50
40	27.90	27.70	31.80	26.10	20.40	21.30	27.70	24.70	24.60
41	27.90	27.70	31.50	26.30	20.70	21.70	27.80	25.00	24.80
42	27.70	27.60	31.20	25.30	21.00	21.90	27.60	24.90	24.80
43	27.70	27.50	30.90	25.70	21.30	22.20	27.70	25.10	25.00

ตารางที่ ก.3 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	75.70	42.30	45.70	25.50	26.10	27.30	26.40	26.20	26.30
1	82.50	76.80	54.10	24.90	26.10	27.30	26.30	26.10	26.40
2	85.10	83.00	62.70	25.60	25.20	26.10	26.40	26.10	26.30
3	86.90	85.20	67.60	24.80	2.10	3.10	26.30	26.00	25.00
4	87.10	85.50	70.80	24.90	2.40	2.50	26.30	26.10	25.00
5	26.80	76.60	69.40	24.20	5.60	4.70	26.30	25.60	25.30
6	27.10	31.80	56.10	25.70	8.80	6.90	26.60	25.40	25.50
7	27.10	28.50	48.10	25.70	10.80	8.90	26.60	25.60	25.60
8	26.90	27.60	43.10	24.50	12.00	10.70	26.80	25.80	25.80
9	27.10	27.90	40.20	25.30	13.20	12.20	26.90	25.90	25.80
10	27.10	27.50	43.80	25.40	13.80	12.70	27.00	24.10	22.80
11	27.10	27.40	47.10	25.30	14.60	12.60	27.00	20.40	17.20
12	27.00	27.60	46.70	24.10	15.30	14.50	27.10	18.50	16.80
13	27.10	27.40	45.60	25.20	16.00	15.30	27.00	17.70	17.30
14	27.10	27.30	44.40	24.40	16.50	15.90	27.10	17.60	18.10
15	27.10	27.50	43.40	25.10	16.90	16.10	27.00	18.00	18.60
16	27.20	27.30	42.60	24.20	17.30	16.30	27.10	18.90	19.00
17	27.20	27.50	41.80	24.60	17.50	16.50	27.00	19.30	19.30
18	27.20	27.40	41.10	24.80	17.70	16.80	27.10	19.80	19.60
19	27.20	27.40	40.50	25.60	17.80	17.20	27.10	20.10	19.90
20	27.20	27.40	39.80	25.90	18.00	17.50	27.10	20.40	20.20
21	27.20	27.30	39.10	26.00	18.30	17.70	27.00	20.70	20.40
22	27.30	27.30	38.60	26.00	18.60	18.30	27.20	21.10	20.70
23	27.20	27.30	37.90	25.70	18.80	18.60	27.10	21.30	21.00
24	27.20	27.20	37.40	25.70	19.10	18.80	27.10	21.60	21.30
25	27.30	27.20	36.90	25.10	19.40	19.20	27.10	21.80	21.50
26	27.20	27.20	36.40	25.10	19.60	19.40	27.20	22.10	21.80
27	27.30	27.10	35.80	25.10	19.80	19.60	27.20	22.20	22.00
28	27.30	27.20	35.40	24.90	20.10	19.70	27.10	22.40	22.20
29	27.40	27.20	34.90	25.50	20.30	20.00	27.20	22.70	22.50
30	27.40	27.20	34.50	25.80	20.50	20.20	27.10	22.60	23.10

ตารางที่ ก.4 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	81.50	55.60	34.10	25.90	22.80	23.60	28.30	25.70	25.90
1	83.80	80.10	45.00	25.60	23.00	23.90	28.30	26.10	26.20
2	84.80	83.20	53.40	24.80	23.20	24.40	28.30	26.40	26.40
3	85.30	84.20	57.90	24.70	23.30	25.50	28.20	26.60	26.60
4	85.50	84.60	60.60	25.40	9.70	12.20	28.20	26.80	26.90
5	85.60	84.70	61.70	25.00	9.20	10.10	28.20	27.00	27.10
6	85.80	84.90	63.90	24.80	9.60	10.30	28.20	27.10	27.20
7	86.00	85.20	65.70	24.80	10.00	10.70	28.20	27.20	27.30
8	86.20	85.40	67.70	24.60	10.40	11.00	28.10	27.20	27.30
9	86.40	85.60	69.30	24.40	10.80	11.40	28.10	27.20	27.30
10	86.10	84.90	70.70	26.00	11.30	12.50	28.10	27.20	27.30
11	28.90	84.70	71.90	26.80	12.90	16.50	28.10	27.30	27.30
12	29.10	33.30	59.10	27.30	14.30	17.90	28.30	27.50	27.20
13	29.00	30.00	50.40	27.50	15.70	18.50	28.50	27.60	27.40
14	28.90	29.60	45.70	27.60	16.60	19.00	28.70	27.80	27.50
15	28.80	29.30	43.30	28.00	17.30	19.60	28.90	27.80	27.50
16	28.90	29.20	42.40	28.60	14.00	18.30	29.10	27.90	26.90
17	28.80	29.10	42.80	26.70	17.20	18.20	29.20	26.40	23.40
18	28.80	28.90	42.30	26.30	17.50	19.30	29.20	24.00	22.40
19	28.70	28.90	41.40	25.90	18.00	20.40	29.10	23.20	22.90
20	28.80	28.90	40.60	25.70	18.40	20.70	29.00	22.90	23.30
21	28.80	28.80	39.70	26.10	18.90	21.00	28.90	23.20	23.50
22	28.80	28.80	38.80	25.90	19.30	21.30	28.80	23.60	23.80
23	28.90	28.80	38.30	25.20	19.80	21.50	28.80	24.00	23.90
24	28.80	28.70	37.60	24.90	20.20	21.70	28.70	24.20	24.10
25	28.90	28.70	37.00	24.90	20.60	21.90	28.60	24.30	24.20
26	29.00	28.70	36.50	25.20	21.00	22.20	28.50	24.50	24.40
27	29.00	28.80	36.00	25.80	21.30	22.30	28.60	24.70	24.50
28	28.90	28.60	35.30	25.00	21.50	22.50	28.60	24.80	24.70
29	28.90	28.60	34.90	24.90	21.80	22.70	28.60	25.00	24.90
30	29.00	28.60	34.50	24.90	22.00	22.80	28.50	25.10	24.90
31	29.00	28.70	34.10	24.90	22.20	22.90	28.40	25.10	25.00
32	29.10	28.70	33.80	24.80	22.50	23.20	28.50	25.30	25.20
33	29.10	28.70	33.50	24.90	22.70	23.30	28.50	25.50	25.30
34	28.90	28.60	33.10	25.50	22.70	23.20	28.20	25.30	25.20
35	28.90	28.40	32.60	24.40	22.80	23.60	28.50	25.70	25.50
36	28.80	28.50	32.40	24.90	22.90	23.50	28.20	25.50	25.50

ตารางที่ ก.5 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	79.10	49.80	31.10	25.60	24.40	24.90	27.80	26.80	26.70
1	82.40	79.00	41.90	25.30	24.60	24.80	27.60	26.70	26.70
2	83.20	81.50	50.30	25.70	24.60	24.90	27.60	26.80	26.70
3	83.70	82.50	55.70	25.10	24.80	25.20	27.70	26.80	26.80
4	84.10	83.30	59.20	25.40	25.10	25.70	27.60	26.90	26.80
5	84.40	83.60	61.90	26.00	25.70	35.70	27.60	26.90	26.80
6	84.70	83.70	61.20	26.60	10.70	11.60	27.60	27.00	27.00
7	84.70	83.90	63.00	27.40	9.90	10.80	27.70	27.10	27.00
8	84.70	83.90	64.80	27.70	8.70	9.50	27.80	27.10	26.90
9	84.80	84.20	66.30	27.50	7.50	8.30	27.90	27.10	26.90
10	85.00	84.40	67.80	26.90	6.90	7.50	28.20	27.30	27.10
11	85.40	84.60	69.20	25.90	7.50	8.10	28.40	27.30	27.10
12	85.50	84.90	70.60	25.60	8.20	8.60	28.30	27.20	27.20
13	28.30	84.40	72.00	26.20	9.50	12.10	28.20	27.30	27.30
14	28.30	42.20	64.30	25.90	11.00	14.60	28.10	27.30	27.40
15	28.20	30.50	53.40	24.60	12.30	15.70	28.10	27.50	27.40
16	28.30	29.20	47.50	25.70	13.40	15.90	27.80	27.30	27.30
17	28.30	28.70	43.90	25.80	14.40	16.20	27.80	27.30	27.20
18	28.30	28.60	42.10	25.30	15.10	16.40	27.90	27.30	27.00
19	28.10	28.30	42.10	24.90	15.50	16.60	27.90	25.70	23.50
20	28.20	28.50	42.60	24.90	17.10	14.10	27.90	22.60	20.10
21	28.20	28.40	41.80	24.60	17.10	15.10	28.00	21.20	20.70
22	28.30	28.40	41.00	25.00	17.30	15.80	27.90	20.70	21.20
23	28.20	28.20	40.20	25.30	17.50	16.40	27.90	20.90	21.60
24	28.30	28.40	39.40	25.40	17.90	16.90	27.90	21.30	21.90
25	28.30	28.20	38.80	24.70	18.20	17.40	27.90	21.90	22.20
26	28.20	28.20	38.20	24.60	18.40	17.90	27.90	22.40	22.50
27	28.30	28.20	37.50	24.40	18.80	18.30	27.80	22.60	22.60
28	28.30	28.30	37.10	24.90	19.10	19.00	27.90	23.00	23.00
29	28.40	28.20	36.40	25.00	19.50	19.40	27.80	23.10	23.10
30	28.30	28.10	35.90	24.70	19.70	19.80	27.80	23.40	23.30
31	28.30	28.10	35.40	24.40	20.10	20.10	27.90	23.50	23.50
32	28.30	28.10	34.90	24.70	20.40	20.50	27.80	23.70	23.70
33	28.40	28.20	34.60	25.10	20.70	20.80	27.80	23.90	23.80
34	28.30	28.10	34.20	25.00	20.90	21.20	27.90	24.20	24.10
35	28.30	28.10	33.80	25.60	21.20	21.50	27.90	24.30	24.20
36	28.40	28.20	33.50	26.00	21.50	21.70	27.90	24.50	24.30
37	28.40	28.20	33.10	26.10	21.70	22.00	27.90	24.50	24.50
38	28.30	28.20	32.80	25.90	22.00	22.30	27.90	24.80	24.70

ตารางที่ ก.6 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0.0	39.80	28.30	31.60	24.50	23.00	23.90	28.20	26.00	26.10
1.0	82.50	60.30	35.60	24.20	23.10	23.90	28.20	26.30	26.40
2.0	84.20	81.20	45.60	24.10	23.10	24.30	28.20	26.60	26.60
3.0	85.00	83.20	52.30	24.50	23.20	25.20	28.20	26.80	26.80
4.0	85.40	84.20	57.00	24.30	23.30	26.90	28.10	26.80	26.80
5.0	85.60	84.70	60.80	24.60	23.30	28.80	28.10	26.90	27.00
6.0	85.70	84.80	61.30	24.00	13.80	14.70	28.00	27.00	27.10
7.0	86.10	85.10	63.70	24.70	14.20	14.90	28.00	27.00	27.20
8.0	86.20	85.40	65.80	23.80	14.50	15.20	27.90	27.10	27.30
9.0	86.40	85.60	67.60	24.70	15.00	15.60	27.90	27.10	27.30
10.0	86.60	85.90	69.40	24.40	15.40	15.90	27.90	27.10	27.30
11.0	86.50	85.80	71.00	24.70	15.70	16.60	27.90	27.20	27.30
12.0	76.40	85.60	73.10	24.60	16.70	16.80	27.90	27.10	27.30
13.0	28.50	48.30	69.20	24.90	17.30	17.50	27.80	27.10	27.30
14.0	28.40	30.90	55.70	24.90	17.80	19.30	27.80	27.10	27.30
15.0	28.40	29.60	48.90	25.40	18.30	20.20	27.90	27.30	27.20
16.0	28.40	29.10	46.50	25.60	18.80	19.50	27.80	27.20	27.20
17.0	28.40	28.80	44.40	25.50	19.20	18.90	27.90	27.30	27.30
18.0	28.30	28.70	42.70	25.90	16.30	20.10	28.00	27.20	26.80
19.0	28.20	28.40	42.20	25.90	17.20	20.00	28.00	26.20	23.20
20.0	28.20	28.40	41.50	26.00	18.50	19.80	28.00	23.70	22.70
21.0	28.20	28.40	40.70	25.80	19.20	20.20	27.90	23.00	23.10
22.0	28.10	28.20	39.70	25.60	19.80	20.50	27.90	23.10	23.10
23.0	28.10	28.20	39.00	25.30	20.30	20.70	27.90	23.60	23.30
24.0	28.10	28.10	38.30	25.10	20.70	21.00	27.90	23.80	23.40
25.0	28.10	28.20	37.70	24.90	21.00	21.20	27.90	23.90	23.60
26.0	28.10	28.10	37.00	25.00	21.30	21.40	27.90	24.10	23.70
27.0	28.20	28.10	36.50	25.20	21.50	21.60	27.90	24.20	23.90
28.0	28.20	28.10	36.00	25.60	21.70	21.80	27.90	24.30	24.00
29.0	28.10	28.00	35.40	25.90	21.80	21.90	27.80	24.40	24.10
30.0	28.30	28.20	35.20	26.00	22.20	22.10	27.90	24.60	24.20
31.0	28.20	28.10	34.70	25.90	22.40	22.30	27.80	24.60	24.30
32.0	28.20	28.10	34.20	26.20	22.50	22.70	28.00	25.00	24.60
33.0	28.20	28.10	33.80	25.50	22.60	22.80	28.00	25.10	24.50
34.0	28.20	28.10	33.40	25.20	22.70	23.00	28.00	25.20	24.90
35.0	28.30	28.10	33.10	25.30	22.80	23.20	28.00	25.30	25.00
36.0	28.20	28.00	32.70	24.80	22.70	23.10	27.90	25.20	25.00
37.0	28.20	27.90	32.60	25.10	22.80	23.20	27.90	25.30	25.10
38.0	28.30	28.20	32.40	24.80	23.00	23.40	27.90	25.50	25.30

ตารางที่ ก.7 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	64.50	32.40	31.80	27.40	23.60	24.30	28.30	26.30	26.10
1	83.70	75.30	39.40	28.00	23.90	24.60	28.50	26.70	26.50
2	84.50	82.90	48.50	27.50	24.10	25.40	28.60	26.90	26.70
3	85.50	84.10	54.40	26.40	24.30	27.30	28.80	27.30	27.00
4	85.60	84.80	58.90	26.00	24.40	29.40	28.60	27.20	27.00
5	85.80	85.00	62.50	25.50	22.90	24.70	28.50	27.40	27.20
6	85.90	85.10	62.90	24.90	11.30	12.20	28.40	27.50	27.50
7	86.00	85.30	65.20	25.20	11.70	12.50	28.30	27.60	27.60
8	86.30	85.50	67.50	26.10	12.20	12.70	28.20	27.50	27.50
9	86.40	85.80	69.30	25.00	12.60	13.10	28.10	27.50	27.50
10	86.60	86.00	71.00	25.40	13.00	13.40	28.10	27.50	27.50
11	28.00	85.20	72.30	25.00	15.30	13.90	27.90	27.40	27.50
12	28.50	50.30	65.40	25.70	14.80	14.70	27.90	27.40	27.50
13	28.40	31.60	53.80	25.10	15.40	15.50	28.00	27.40	27.30
14	28.40	29.40	47.70	25.00	16.10	16.10	27.80	27.20	27.20
15	28.30	28.80	44.40	25.20	16.50	16.80	27.80	27.30	27.20
16	28.40	28.70	43.10	25.40	17.20	17.40	27.80	27.20	27.20
17	28.40	28.70	42.60	25.40	17.90	17.60	27.80	26.50	22.40
18	28.30	28.60	42.00	25.70	18.40	17.80	27.80	23.40	22.10
19	28.50	28.50	41.20	26.20	19.00	18.60	28.00	22.80	22.70
20	28.40	28.50	40.30	26.20	19.40	19.30	28.00	22.50	22.90
21	28.30	28.30	39.50	26.40	19.90	19.90	28.10	22.90	23.10
22	28.40	28.40	38.70	26.60	20.40	20.40	28.10	23.30	23.30
23	28.30	28.30	37.90	25.60	20.70	21.00	28.10	23.60	23.50
24	28.30	28.40	37.40	25.60	21.20	21.40	28.00	23.90	23.70
25	28.40	28.20	36.80	25.90	21.50	21.60	28.00	24.00	23.80
26	28.30	28.20	36.10	25.50	21.80	21.90	28.00	24.10	24.00
27	28.30	28.30	35.70	25.20	22.00	22.20	28.00	24.40	24.20
28	28.30	28.20	35.20	25.80	22.20	22.40	28.00	24.60	24.30
29	28.30	28.20	34.70	24.70	22.50	22.70	28.00	24.70	24.60
30	28.30	28.20	34.20	24.90	22.60	22.70	27.80	24.70	24.50
31	28.40	28.20	33.80	25.40	22.80	22.90	27.80	24.80	24.60
32	28.40	28.20	33.50	25.10	23.00	23.00	27.80	25.00	24.80
33	28.30	28.00	32.80	24.90	22.90	23.10	27.90	25.00	24.90
34	28.60	28.30	32.70	25.10	23.30	23.30	27.90	25.20	25.00
35	28.50	28.30	32.40	25.60	23.30	23.40	27.90	25.30	25.10
36	28.60	28.40	32.20	26.10	23.50	23.50	27.90	25.40	25.20

ตารางที่ ก.8 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 2)

TIME	Tw,ads1_in	Tw,ads1_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap1_in8	Tevap_out	Tevap
0	64.20	34.50	31.90	25.10	22.70	23.20	27.90	25.50	25.80
1	83.90	73.40	40.20	25.10	22.80	23.50	27.80	25.80	26.00
2	84.80	83.00	50.00	25.00	22.80	24.80	27.80	26.00	26.20
3	85.60	84.20	56.10	25.40	22.70	27.20	27.80	26.20	26.40
4	85.90	84.90	60.00	25.00	22.60	30.20	27.70	26.40	26.50
5	86.10	85.10	60.60	24.60	15.50	20.20	27.70	26.60	26.70
6	86.10	85.30	62.90	24.40	14.90	16.60	27.70	26.60	26.80
7	86.50	85.50	65.20	26.10	15.30	16.70	27.70	26.70	26.80
8	86.50	85.80	67.20	26.80	14.80	16.60	27.80	26.80	26.90
9	86.60	85.90	68.70	27.50	13.70	15.70	27.80	26.90	26.80
10	86.70	86.10	70.00	27.50	12.40	14.00	27.90	26.90	26.80
11	36.20	85.40	71.40	27.20	12.80	13.60	28.00	26.90	26.80
12	28.40	53.80	67.90	26.90	11.40	13.50	28.50	27.30	27.10
13	28.40	30.70	55.20	26.60	12.80	14.00	28.40	27.30	27.10
14	28.40	29.30	48.40	26.00	13.90	14.40	28.30	27.50	27.30
15	28.30	28.70	44.20	25.50	14.70	16.60	28.20	27.50	27.30
16	28.20	28.50	41.50	25.00	15.30	16.40	28.00	27.40	27.20
17	28.20	28.40	41.30	25.40	13.00	13.80	28.10	27.20	26.00
18	28.20	28.30	42.20	25.10	15.40	14.90	27.90	24.10	21.30
19	28.10	28.10	41.80	25.50	15.80	15.80	27.90	22.10	21.20
20	28.10	28.20	40.70	24.70	16.60	16.50	27.90	21.50	21.70
21	28.20	28.10	39.90	24.80	17.20	17.10	27.90	21.40	22.00
22	28.30	28.20	39.10	25.20	17.80	17.70	27.90	21.80	22.30
23	28.40	28.20	38.40	24.80	18.40	18.30	27.90	22.30	22.60
24	28.40	28.20	37.80	24.90	18.90	18.90	27.90	22.70	22.80
25	28.40	28.20	37.20	25.00	19.40	19.30	27.90	23.00	23.00
26	28.40	28.30	36.70	25.30	19.80	19.90	27.90	23.20	23.20
27	28.50	28.40	36.30	25.40	20.20	20.30	27.90	23.50	23.40
28	28.50	28.40	35.80	24.90	20.50	20.70	28.00	23.70	23.70
29	28.60	28.50	35.40	24.70	20.90	21.10	28.10	23.90	23.90
30	28.60	28.40	34.90	25.20	21.00	21.30	28.10	24.10	24.10
31	28.60	28.40	34.60	25.30	21.40	21.60	28.20	24.30	24.20
32	28.60	28.40	34.20	25.00	21.50	21.80	28.10	24.30	24.30
33	28.70	28.40	33.80	25.10	21.70	22.00	28.10	24.50	24.40
34	28.70	28.40	33.60	25.20	21.90	22.30	28.10	24.70	24.70
35	28.80	28.50	33.30	25.00	22.20	22.50	28.10	24.90	24.90
36	28.80	28.50	33.00	25.70	22.30	22.60	28.20	25.00	24.90
37	28.80	28.60	32.70	25.80	22.50	22.90	28.20	25.30	25.10
38	28.70	28.60	32.40	26.10	22.60	23.10	28.20	25.40	25.20

ตารางที่ ก.9 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 70°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	30.20	28.30	31.40	25.80	23.80	24.00	28.10	26.20	26.20
1	82.60	60.90	35.10	25.20	23.90	24.10	28.10	26.50	26.50
2	84.30	81.90	45.40	25.20	23.80	24.10	28.10	26.70	26.60
3	85.40	83.70	52.40	25.40	24.00	24.10	27.90	26.60	26.60
4	85.70	84.70	57.10	25.50	24.00	24.60	27.90	26.70	26.80
5	85.70	84.80	60.80	24.70	21.50	23.60	27.90	26.80	26.80
6	86.00	84.90	61.60	24.70	14.90	15.50	27.80	27.00	27.10
7	86.20	85.40	63.90	24.90	15.20	15.80	27.80	27.00	27.10
8	86.20	85.40	66.00	24.70	15.40	16.10	27.80	27.00	27.20
9	86.40	85.60	68.00	25.00	15.70	16.40	27.80	27.10	27.20
10	86.70	86.10	70.00	27.30	15.90	16.40	27.80	27.10	27.20
11	86.00	85.20	71.50	27.20	15.80	16.50	28.00	27.30	27.30
12	28.50	82.80	71.50	26.40	17.00	17.50	28.10	27.30	27.20
13	28.60	32.70	58.40	27.60	18.20	18.80	28.40	27.50	27.30
14	28.50	29.70	50.40	28.10	19.10	19.80	28.50	27.60	27.30
15	28.50	29.00	47.10	28.10	19.90	20.90	28.70	27.80	27.50
16	28.40	28.90	45.00	27.50	20.50	21.60	28.70	27.90	27.50
17	28.30	28.60	43.10	28.30	21.00	22.30	28.70	27.90	27.50
18	28.50	28.80	41.80	28.70	21.80	22.90	29.00	28.10	27.30
19	28.40	28.60	42.10	28.20	22.80	21.70	29.10	26.20	23.00
20	28.40	28.60	41.50	28.30	23.50	21.60	29.20	24.30	23.10
21	28.40	28.50	40.60	28.30	23.90	22.00	29.20	23.80	23.50
22	28.40	28.50	39.80	27.40	24.30	22.40	29.20	23.80	23.90
23	28.40	28.50	39.10	27.30	24.50	22.60	29.10	24.20	24.20
24	28.40	28.40	38.40	26.20	24.70	22.60	28.80	24.50	24.50
25	28.50	28.40	37.80	25.70	24.70	22.70	28.70	24.80	24.60
26	28.30	28.20	37.10	26.00	24.70	22.90	28.60	25.10	24.90
27	28.30	28.20	36.50	25.70	24.70	23.00	28.40	25.30	24.80
28	28.50	28.30	36.00	25.60	24.80	23.10	28.30	25.30	25.00
29	28.30	28.20	35.40	25.80	24.70	23.10	28.20	25.30	25.10
30	28.40	28.20	34.90	25.80	24.70	23.30	28.20	25.40	25.20
31	28.30	28.20	34.50	25.60	24.70	23.20	28.00	25.30	25.20
32	28.30	28.10	34.00	25.40	24.70	23.40	28.00	25.40	25.20
33	28.20	28.00	33.40	25.30	24.60	23.50	28.00	25.50	25.30
34	28.10	28.00	33.00	25.20	24.50	23.70	28.00	25.70	25.40
35	28.20	28.10	32.80	25.10	24.60	23.80	28.00	25.70	25.50
36	28.20	28.00	32.50	25.40	24.60	23.90	28.00	25.80	25.70
37	28.30	28.10	32.10	25.50	24.60	24.00	28.10	25.90	25.70
38	28.30	28.10	31.90	25.20	24.60	24.00	27.90	25.90	25.70

ตารางที่ ก.10 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	85.50	58.90	35.30	26.20	23.10	24.10	28.10	26.50	26.40
1	87.10	84.10	46.10	27.20	23.40	24.90	28.30	26.90	26.70
2	88.00	86.50	53.80	27.90	23.80	26.40	28.30	27.00	26.80
3	88.20	87.10	59.00	28.20	24.00	28.70	28.50	27.30	26.90
4	88.40	87.60	62.80	28.20	24.40	31.10	28.50	27.40	27.00
5	88.40	87.70	65.90	28.40	24.60	33.10	28.60	27.40	27.10
6	88.50	87.90	68.60	28.30	24.80	34.80	28.80	27.70	27.30
7	88.90	88.20	70.20	28.60	9.20	13.60	28.90	27.90	27.50
8	88.90	88.30	69.40	28.80	5.80	6.90	29.00	28.20	27.80
9	89.10	88.50	71.10	29.00	4.80	5.70	29.30	28.20	28.00
10	89.70	88.70	72.40	28.80	3.70	4.60	29.20	28.20	27.90
11	90.60	89.70	73.70	29.30	2.90	3.70	29.20	28.20	27.80
12	91.40	90.50	75.10	26.60	2.40	3.00	29.30	28.20	27.90
13	92.20	91.30	76.40	26.40	3.10	3.70	29.30	28.20	27.90
14	93.00	92.20	77.80	26.00	3.80	4.30	29.30	28.20	28.00
15	93.70	92.70	79.30	25.80	4.40	5.00	29.20	28.20	28.10
16	93.90	93.00	80.60	26.30	4.90	5.50	29.00	28.20	28.10
17	85.10	92.00	81.70	25.40	6.50	9.50	28.90	28.20	28.10
18	28.00	91.90	80.20	25.60	8.50	13.20	28.60	28.20	28.20
19	28.20	44.40	67.50	25.30	8.70	9.10	28.40	28.30	28.20
20	28.30	31.80	56.80	25.10	10.10	10.80	28.30	28.20	28.00
21	28.30	29.70	51.00	24.90	11.50	12.10	28.10	28.00	27.80
22	28.30	29.00	47.00	25.10	12.70	13.30	28.10	27.90	27.80
23	28.20	28.60	45.30	25.10	13.60	14.40	28.20	27.90	27.80
24	28.20	28.50	44.40	25.00	14.40	15.20	28.10	27.80	27.80
25	28.00	28.20	43.30	25.10	14.90	15.90	28.20	27.70	27.60
26	28.20	28.30	42.00	25.00	14.80	16.50	28.20	27.70	27.60
27	28.00	28.10	41.00	25.30	15.30	16.50	28.10	27.60	27.50
28	28.00	28.20	40.30	25.10	15.50	16.60	27.80	27.30	27.00
29	28.00	28.00	40.70	25.00	15.60	16.80	27.80	26.30	24.70
30	28.00	28.10	41.50	24.80	15.60	16.90	27.80	23.60	19.90
31	28.10	28.10	42.10	25.00	15.90	17.10	27.90	20.80	19.40
32	28.10	28.00	41.50	25.10	16.20	17.40	27.80	19.80	20.20
33	28.00	28.10	40.90	25.50	16.70	17.70	27.80	20.40	20.70
34	28.00	28.00	40.30	25.80	17.20	18.10	27.80	21.20	21.20
35	27.90	28.20	39.60	25.70	17.70	18.50	27.80	21.80	21.60
36	27.90	28.10	39.10	25.50	18.20	18.90	27.80	22.30	22.00
37	27.90	28.20	38.70	25.40	18.60	19.30	27.80	22.70	22.30
38	27.90	28.00	38.00	24.80	19.00	19.60	27.80	23.00	22.60

ตารางที่ ก.10 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 1) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.90	27.90	37.40	24.70	19.10	19.70	27.80	23.40	23.00
40	27.90	27.90	36.90	25.10	19.30	19.80	27.70	23.60	23.20
41	28.00	27.90	36.40	25.00	19.40	19.90	27.80	23.90	23.50
42	28.10	27.90	36.00	24.30	19.50	20.00	27.80	24.10	23.70
43	28.10	28.00	35.50	24.90	19.60	20.10	27.80	24.30	23.90
44	28.20	27.90	35.10	25.30	19.60	20.20	27.80	24.50	24.10
45	28.20	28.10	34.70	25.00	19.80	20.40	27.90	24.70	24.30
46	28.20	28.10	34.30	25.70	19.80	20.60	27.90	24.90	24.40
47	28.20	28.00	34.00	25.60	20.10	20.80	27.90	25.00	24.60
48	28.20	28.00	33.50	25.90	20.30	21.10	27.90	25.10	24.70
49	28.20	28.00	33.10	25.90	20.50	21.40	27.90	25.10	24.90
50	28.10	27.90	32.80	25.90	20.80	21.70	27.90	25.10	24.90
51	28.00	27.80	32.30	25.70	21.00	22.00	27.90	25.20	25.10

ตารางที่ ก.11 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	28.20	28.90	32.60	25.80	19.90	21.00	27.90	24.50	24.80
1	85.90	59.80	35.80	26.00	20.10	22.20	27.90	25.10	25.30
2	87.50	84.40	47.40	25.50	20.30	23.40	27.90	25.50	25.70
3	88.20	86.50	54.90	25.10	20.30	25.60	27.90	25.90	26.00
4	88.60	87.40	60.00	25.20	20.50	28.70	27.90	26.10	26.20
5	88.50	87.60	63.30	25.30	20.30	31.90	27.90	26.30	26.30
6	88.60	87.90	66.20	25.20	20.40	34.60	27.80	26.30	26.40
7	88.90	88.10	68.60	24.70	20.60	36.90	27.90	26.50	26.50
8	89.00	88.30	70.80	24.90	20.80	38.80	27.80	26.50	26.70
9	89.10	88.40	72.70	24.80	20.90	40.00	27.70	26.60	26.70
10	89.00	88.40	71.50	26.40	7.20	8.30	27.80	26.80	26.80
11	89.30	88.40	72.20	27.30	6.90	7.70	27.80	26.90	26.80
12	89.30	88.70	73.30	27.90	5.80	6.50	27.90	26.80	26.80
13	89.40	88.80	74.40	27.80	4.60	5.20	27.90	26.80	26.70
14	89.30	88.80	75.40	28.10	3.50	4.30	28.20	27.10	26.80
15	89.50	89.00	76.60	28.60	2.70	3.40	28.50	27.20	27.00
16	89.70	89.30	77.60	26.70	2.60	3.20	28.60	27.20	27.10
17	89.80	89.40	78.50	26.20	3.20	3.80	28.70	27.30	27.20
18	90.00	89.50	79.40	25.40	3.90	4.50	28.60	27.30	27.20
19	90.10	89.70	80.30	25.60	4.50	5.00	28.50	27.30	27.20
20	28.90	89.10	80.90	25.30	5.40	6.70	28.30	27.20	27.30
21	28.00	65.90	76.30	25.10	7.30	9.60	27.90	27.10	27.20
22	28.00	32.00	62.10	24.70	9.10	11.40	27.80	27.20	27.20
23	28.10	29.20	54.00	24.80	10.70	12.80	27.90	27.50	27.40
24	28.10	28.90	48.80	25.20	12.10	13.40	27.60	27.20	27.10
25	28.00	28.40	45.40	25.40	13.20	13.90	27.70	27.20	27.10
26	28.00	28.20	43.10	24.90	14.20	14.50	27.60	27.20	27.10
27	28.00	28.20	43.20	24.90	9.00	11.60	27.700001	27.10	27.10
28	28.20	28.20	43.40	24.30	9.80	13.10	27.70	26.80	25.60
29	28.20	28.20	44.30	25.40	11.30	14.10	27.80	22.50	19.30
30	28.20	28.20	43.90	25.60	12.70	15.00	27.80	20.90	19.60
31	28.20	28.10	43.10	25.60	14.00	15.70	27.80	20.20	20.10
32	28.00	28.10	42.20	25.80	15.20	16.40	27.70	20.10	20.40
33	28.00	28.00	41.50	26.00	16.10	17.10	27.70	20.30	20.70
34	28.00	27.90	40.70	25.40	17.10	17.70	27.70	20.70	21.00
35	28.10	27.90	40.20	24.80	17.70	18.30	27.80	21.10	21.20
36	28.00	27.90	39.50	25.10	18.20	18.70	27.80	21.50	21.60
37	28.10	27.90	38.90	24.70	18.60	19.00	27.80	21.80	21.90
38	28.20	28.00	38.40	25.50	18.90	19.30	27.70	22.00	22.00

ตารางที่ ก.11 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.20	28.00	37.80	25.20	19.10	19.50	27.70	22.30	22.40
40	28.20	28.00	37.40	25.00	19.00	20.20	27.70	22.20	22.20
41	28.10	27.90	36.90	24.70	18.90	20.50	27.70	22.00	22.60
42	28.10	27.90	36.30	24.60	17.70	21.00	27.70	22.30	23.00
43	28.10	27.90	35.70	24.40	17.70	20.90	27.70	22.50	23.00
44	28.20	27.90	35.20	24.90	17.90	21.00	27.70	22.60	23.10
45	28.20	28.00	34.80	25.00	18.10	21.10	27.70	22.80	23.20
46	28.20	28.00	34.40	25.10	18.20	21.20	27.70	23.00	23.40
47	28.20	27.90	33.90	24.50	18.20	21.40	27.70	23.30	23.50
48	28.20	27.90	33.60	24.80	18.40	21.60	27.80	23.50	23.70
49	28.10	27.90	33.20	25.20	18.50	21.70	27.70	23.60	24.00

ตารางที่ ก.12 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	63.90	31.20	32.00	25.60	21.50	22.60	27.80	25.90	25.80
1	87.30	77.60	39.80	25.50	21.70	22.90	27.90	26.30	26.10
2	88.20	85.80	50.50	24.90	21.90	23.10	27.80	26.50	26.40
3	88.40	87.00	56.50	25.30	22.20	23.30	27.80	26.60	26.50
4	88.60	87.60	60.80	24.60	22.70	23.90	27.80	26.70	26.70
5	88.80	87.80	64.40	24.90	23.10	24.50	27.70	26.70	26.70
6	88.90	88.00	67.20	24.70	23.50	25.50	27.80	26.90	26.90
7	88.90	88.10	69.80	24.70	23.20	27.40	27.60	26.70	26.80
8	89.20	88.30	68.60	26.80	7.80	9.00	27.70	27.10	27.10
9	89.90	88.80	69.90	27.50	7.40	8.20	27.70	27.00	27.00
10	90.60	89.40	71.50	28.00	6.20	7.00	27.80	27.00	26.90
11	91.40	90.20	73.20	28.20	5.10	5.70	27.80	27.00	26.80
12	92.10	91.00	74.50	28.50	3.90	4.90	28.20	27.20	27.10
13	92.80	92.00	76.10	28.40	3.10	3.90	28.30	27.30	27.00
14	93.50	92.70	77.50	26.80	2.40	3.10	28.50	27.30	27.10
15	94.10	93.40	78.90	26.60	3.00	3.50	28.6	27.30	27.10
16	93.90	93.50	80.10	26.10	3.70	4.20	28.60	27.30	27.20
17	93.60	93.10	81.00	26.00	4.30	4.90	28.60	27.30	27.20
18	28.10	92.60	81.80	25.70	6.10	8.30	28.50	27.30	27.30
19	28.20	85.80	76.50	25.20	7.00	7.60	28.20	27.20	27.20
20	28.20	41.20	62.50	25.10	8.70	9.40	28.00	26.90	26.30
21	28.10	32.90	54.10	25.00	10.30	11.00	27.90	25.60	24.70
22	28.10	29.80	51.20	24.70	11.70	12.60	28.00	23.90	23.30
23	28.20	29.00	50.10	24.70	13.00	13.70	28.00	22.60	22.50
24	28.10	28.60	48.60	25.00	14.00	14.70	28.00	22.10	22.00
25	28.10	28.50	47.20	25.00	15.00	15.50	28.10	22.30	21.70
26	28.10	28.40	45.90	24.90	15.80	16.10	27.80	21.80	21.00
27	28.20	28.60	44.80	24.40	16.40	16.70	27.90	21.60	21.10
28	28.20	28.40	43.80	24.80	16.90	17.10	27.80	21.50	21.10
29	28.20	28.20	42.90	24.80	17.30	17.50	27.90	21.10	21.20
30	28.20	28.30	42.20	24.70	17.50	17.80	27.80	21.70	21.30
31	28.20	28.20	41.40	24.20	17.70	18.00	27.80	21.80	21.50
32	28.20	28.10	40.60	24.20	17.80	18.30	27.80	22.00	21.60
33	28.30	28.20	40.00	24.30	17.90	18.40	27.70	22.50	21.70
34	28.20	28.20	39.20	25.10	18.10	18.40	27.80	23.20	21.80
35	28.30	28.20	38.50	25.10	18.30	18.70	27.90	23.40	22.00
36	28.30	28.20	38.10	25.60	18.50	18.90	27.90	23.60	22.20
37	28.20	28.20	37.40	25.50	18.60	19.10	27.90	23.60	22.40
38	28.30	28.20	36.90	25.80	19.00	19.40	27.90	23.90	22.60

ตารางที่ ก.12 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 3) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.30	28.20	36.40	25.90	19.30	19.60	27.90	24.00	22.70
40	28.20	28.10	35.80	24.90	19.40	19.90	27.90	24.20	23.00
41	28.20	28.10	35.30	25.10	19.50	20.00	28.00	24.40	23.10
42	28.20	28.10	34.80	24.90	19.50	20.10	28.00	24.40	23.30
43	28.20	28.10	34.50	25.20	19.60	20.10	27.40	24.70	23.60
44	28.20	28.10	34.10	25.10	19.70	20.10	27.20	24.80	23.60
45	28.30	28.10	33.80	25.20	19.70	20.20	27.20	24.90	23.90
46	28.30	28.10	33.40	25.00	19.70	20.30	27.20	25.10	24.00

ตารางที่ ก.13 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	30.40	28.30	32.50	25.40	18.80	21.50	27.80	24.70	25.10
1	86.70	64.40	36.50	25.80	19.00	21.50	27.70	25.20	25.40
2	88.70	84.90	48.90	25.70	19.30	21.80	27.80	25.60	25.70
3	88.90	87.60	56.80	25.30	19.80	22.00	27.80	25.80	25.90
4	88.90	87.90	61.50	25.60	20.30	22.30	27.70	25.90	26.00
5	88.90	88.00	64.20	25.40	20.80	23.00	27.60	26.10	26.20
6	89.00	88.30	66.90	25.50	21.20	23.90	27.60	26.20	26.30
7	89.10	88.30	69.30	25.20	21.50	24.90	27.60	26.30	26.40
8	89.10	88.40	71.30	25.00	21.80	25.90	27.60	26.40	26.50
9	89.20	88.60	71.50	24.90	11.10	13.00	27.60	26.50	26.70
10	89.10	88.50	71.20	25.60	11.20	12.00	27.60	26.70	26.70
11	89.20	88.60	72.60	26.50	11.50	12.30	27.60	26.70	26.80
12	89.20	88.60	73.70	27.20	11.00	11.70	27.60	26.80	26.80
13	89.30	88.70	74.90	27.60	9.90	10.60	27.70	26.80	26.70
14	89.30	88.80	75.90	28.60	8.50	9.10	27.80	26.80	26.70
15	89.30	88.80	76.70	27.10	7.00	7.80	27.9	26.80	26.80
16	89.50	89.00	77.70	26.30	7.50	8.30	28.30	27.00	26.90
17	90.10	89.30	78.80	26.00	8.20	8.60	28.10	26.80	26.80
18	90.90	89.90	79.70	26.10	8.80	9.50	28.30	27.00	27.00
19	91.50	90.60	80.70	25.70	9.30	9.80	28.00	26.80	26.90
20	28.30	90.40	81.80	25.40	10.60	10.60	27.90	26.90	27.00
21	28.00	87.10	79.60	24.70	11.30	11.90	27.80	27.00	27.00
22	28.00	39.80	66.50	25.80	12.50	13.00	27.60	27.10	27.10
23	28.00	31.50	56.70	24.40	13.60	14.10	27.60	27.10	27.10
24	28.10	29.60	50.80	24.20	14.50	15.10	27.50	27.10	27.00
25	28.10	28.90	48.70	24.70	15.10	15.70	27.60	27.10	27.00
26	28.00	28.60	46.90	25.10	15.50	16.30	27.60	27.10	27.00
27	28.00	28.50	45.50	24.60	15.90	16.80	27.60	27.10	27.00
28	28.00	28.10	43.90	24.30	15.90	17.10	27.70	27.00	27.00
29	27.90	28.00	42.70	25.50	16.00	17.30	27.60	26.90	26.90
30	27.90	27.90	41.50	24.00	15.90	17.50	27.70	27.10	27.00
31	28.00	28.00	40.60	25.10	16.00	17.70	27.70	27.00	26.90
32	27.90	27.90	40.60	25.60	18.10	14.30	27.70	26.20	24.60
33	28.00	28.10	42.10	25.40	18.00	14.90	27.70	22.20	19.20
34	28.00	28.10	41.90	25.80	17.80	16.70	27.70	20.60	19.30
35	28.00	28.00	41.20	25.80	17.90	17.30	27.70	19.90	19.70
36	27.90	27.90	40.50	26.10	18.00	17.70	27.70	19.80	20.20
37	27.90	27.90	39.90	25.60	18.30	18.10	27.60	20.10	20.60
38	27.90	27.90	39.30	25.50	18.60	18.40	27.70	20.60	21.00

ตารางที่ ก.13 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 1) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.90	27.90	38.70	25.50	18.90	18.80	27.70	21.60	21.60
40	27.90	27.80	38.10	25.20	19.10	19.30	27.70	22.20	22.00
41	27.90	27.70	37.60	24.60	19.20	19.60	27.80	22.60	22.40
42	27.90	27.80	37.10	25.20	19.40	20.00	27.80	23.00	22.70
43	28.00	27.80	36.60	24.90	19.50	20.20	27.70	23.20	23.00
44	28.00	27.80	36.20	24.70	19.70	20.70	27.80	23.60	23.30
45	28.00	27.80	35.70	25.30	19.80	20.80	27.70	23.70	23.50
46	28.00	27.90	35.30	25.10	20.00	21.10	27.80	23.90	23.70
47	28.00	27.80	34.80	25.60	20.10	21.40	27.90	24.20	24.00
48	27.90	27.80	34.40	25.50	20.20	21.70	27.90	24.40	24.10
49	27.90	27.70	34.00	26.00	20.50	21.90	27.90	24.50	24.20
50	28.00	27.80	33.60	25.60	20.60	22.20	27.80	24.70	24.40
51	28.00	27.80	33.20	25.60	20.90	22.50	27.80	24.80	24.50
52	28.00	27.80	32.90	25.00	21.00	22.60	27.80	25.00	24.70
53	28.00	27.80	32.60	25.10	21.20	22.80	27.90	25.10	24.90
54	28.00	27.70	32.20	25.20	21.40	23.00	27.90	25.30	25.00
55	28.00	27.70	32.00	25.10	21.40	23.10	27.80	25.40	25.10
56	27.90	27.70	31.70	25.10	21.50	23.30	27.80	25.50	25.30

ตารางที่ ก.14 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	84.70	52.60	33.50	25.90	22.00	23.60	27.80	26.20	26.10
1	87.80	83.90	45.20	25.80	22.10	23.90	27.80	26.50	26.30
2	88.40	86.90	53.90	25.70	22.30	24.60	27.80	26.60	26.50
3	88.50	87.50	59.10	25.30	22.50	26.00	27.80	26.70	26.60
4	88.30	87.60	62.50	25.20	22.60	27.80	27.80	26.80	26.80
5	88.50	87.70	65.00	25.20	22.80	29.30	27.70	26.80	26.80
6	88.50	87.80	67.50	24.60	22.70	30.60	27.70	26.90	26.90
7	88.70	87.90	69.80	25.20	22.90	31.50	27.70	26.90	27.00
8	88.60	88.00	70.90	25.30	14.60	19.80	27.60	26.80	27.10
9	88.80	88.00	70.20	26.80	12.10	12.90	27.60	27.10	27.10
10	88.80	88.10	71.30	27.70	11.30	12.10	27.60	27.10	26.90
11	88.70	88.10	72.50	28.20	10.00	10.80	27.90	27.20	27.00
12	88.80	88.20	73.70	28.60	8.70	9.60	28.10	27.30	27.10
13	89.00	88.50	75.00	28.20	7.60	8.40	28.20	27.30	27.10
14	89.30	88.70	76.10	26.20	7.70	8.20	28.30	27.30	27.20
15	89.20	88.80	77.20	26.10	8.30	8.90	28.40	27.40	27.20
16	89.40	88.90	78.20	25.50	8.80	9.50	28.20	27.30	27.20
17	89.50	89.00	79.20	25.10	9.50	10.00	28.20	27.30	27.30
18	89.60	89.10	80.10	24.60	9.90	10.40	28.00	27.20	27.30
19	89.50	89.00	80.60	25.20	10.10	10.80	27.90	27.20	27.30
20	36.40	88.60	81.40	24.50	10.80	12.10	27.60	26.90	27.10
21	27.80	84.50	79.20	25.30	12.20	14.70	27.50	27.00	27.10
22	27.80	32.50	64.40	24.90	13.30	15.80	27.40	27.10	27.10
23	27.80	29.70	55.30	24.90	14.20	16.40	27.40	27.10	27.00
24	27.80	28.40	49.90	25.00	15.10	16.90	27.50	27.00	27.10
25	27.90	28.40	47.90	24.50	15.80	17.30	27.60	27.10	27.00
26	27.90	28.00	46.20	24.70	16.20	17.50	27.60	27.00	27.10
27	27.90	28.00	44.50	24.70	16.10	17.80	27.60	27.10	27.10
28	28.00	27.90	43.00	25.70	16.00	18.10	27.70	27.10	27.10
29	27.90	27.90	42.00	25.60	15.40	18.30	27.70	26.80	26.10
30	27.90	27.90	43.10	25.80	15.20	18.60	27.60	24.80	22.20
31	27.80	27.90	43.40	25.80	15.50	18.90	27.70	21.70	19.70
32	27.90	27.80	42.70	26.00	17.10	17.30	27.60	20.60	20.30
33	27.80	27.90	42.00	26.00	17.60	18.00	27.60	20.50	20.80
34	27.80	27.80	41.20	25.70	18.10	18.60	27.60	21.20	21.20
35	27.90	27.80	40.50	25.20	18.60	19.00	27.70	21.80	21.60
36	27.90	27.80	39.90	25.50	18.90	19.30	27.80	22.20	21.90
37	28.00	27.90	39.30	25.00	19.10	19.60	27.80	22.50	22.20
38	28.00	27.90	38.70	25.50	19.30	19.80	27.80	22.80	22.50

ตารางที่ ก.14 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.10	28.00	38.20	25.00	19.50	20.00	27.90	23.10	22.80
40	28.00	27.90	37.50	25.10	19.40	20.20	27.90	23.30	23.10
41	28.00	27.90	37.00	24.90	19.50	20.40	27.90	23.60	23.30
42	28.10	27.90	36.40	25.00	19.60	20.50	27.80	23.70	23.50
43	28.10	27.90	36.00	25.20	19.70	20.60	27.80	23.90	23.70
44	28.10	28.00	35.50	25.10	19.80	20.90	27.80	24.10	23.80
45	28.10	27.90	35.00	25.00	19.90	21.10	27.80	24.30	24.00
46	28.10	27.90	34.50	25.60	20.10	21.30	27.80	24.50	24.20
47	28.10	27.80	34.10	25.80	20.30	21.60	27.90	24.60	24.30
48	28.10	27.90	33.70	25.90	20.50	21.90	27.90	24.90	24.50
49	28.10	27.90	33.30	26.00	20.80	22.10	27.90	24.90	24.60
50	28.10	28.00	33.00	26.10	21.10	22.50	27.90	25.10	24.80
51	28.10	27.90	32.50	25.40	21.40	22.70	27.90	25.20	24.90

ตารางที่ ก.15 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	49.70	28.00	31.50	25.90	21.80	23.20	27.80	26.10	26.10
1	87.00	68.60	36.90	26.90	21.70	23.70	27.90	26.50	26.30
2	88.20	85.30	48.80	27.30	21.80	25.30	28.00	26.70	26.40
3	88.40	87.30	56.00	27.60	22.00	28.20	28.10	26.80	26.50
4	88.50	87.60	60.10	28.20	22.20	31.80	28.30	27.00	26.70
5	88.80	88.00	63.20	28.20	22.50	34.90	28.50	27.20	26.90
6	89.00	88.20	66.00	28.40	22.80	37.30	28.60	27.40	27.10
7	89.00	88.50	68.40	26.30	23.00	39.20	28.60	27.50	27.20
8	89.40	88.70	70.80	26.60	23.20	40.80	28.60	27.50	27.30
9	89.40	88.80	70.60	26.00	6.30	8.10	28.60	27.70	27.50
10	89.40	88.80	70.90	26.00	5.60	6.40	28.40	27.80	27.60
11	89.40	88.90	72.20	26.00	6.00	6.80	28.30	27.70	27.70
12	89.60	89.00	73.60	25.30	6.60	7.10	28.10	27.60	27.60
13	89.40	89.00	74.70	25.10	7.00	7.60	28.00	27.60	27.60
14	89.70	89.00	75.90	25.60	7.50	8.00	27.90	27.60	27.60
15	89.60	89.10	77.20	25.40	7.90	8.40	27.80	27.40	27.40
16	89.50	88.90	78.20	25.40	8.50	8.70	27.60	27.20	27.20
17	89.60	89.00	79.00	24.60	8.70	9.20	27.50	27.20	27.20
18	89.50	89.10	79.90	24.70	9.10	9.60	27.50	27.20	27.20
19	89.60	89.00	80.70	25.30	9.60	10.10	27.40	27.10	27.10
20	27.90	88.40	80.40	24.70	10.80	13.00	27.40	27.10	27.10
21	27.90	32.10	65.80	24.60	11.60	11.90	27.40	27.10	27.00
22	27.90	29.00	55.80	24.80	12.60	13.00	27.50	27.10	27.00
23	28.00	28.90	50.10	24.70	13.60	14.00	27.50	27.00	27.00
24	28.00	28.30	46.30	25.00	14.40	15.00	27.60	27.00	27.00
25	28.00	28.10	45.20	24.90	15.00	15.60	27.70	27.10	27.00
26	28.00	28.00	44.20	25.80	15.40	16.20	27.70	27.10	27.00
27	27.90	27.90	43.10	25.70	15.90	16.70	27.70	27.10	26.90
28	27.90	27.90	42.90	25.70	17.10	14.70	27.70	26.10	23.90
29	27.90	27.80	43.70	25.80	17.70	15.10	27.70	23.00	19.50
30	27.80	27.90	43.30	25.70	18.20	17.50	27.70	21.20	19.80
31	27.80	27.80	42.50	25.20	18.50	18.30	27.70	20.50	20.50
32	27.80	27.80	41.70	25.40	18.80	18.80	27.70	20.60	21.20
33	27.90	27.80	41.00	24.90	18.90	19.20	27.70	21.30	21.70
34	28.00	27.80	40.20	25.30	19.00	19.50	27.70	22.00	22.00
35	28.00	27.90	39.60	25.20	19.00	19.70	27.70	22.50	22.30
36	28.00	27.80	38.80	24.70	18.90	20.00	27.80	22.90	22.60
37	28.00	27.80	38.20	25.10	19.00	20.10	27.70	23.00	22.80
38	28.10	27.90	37.80	24.90	19.10	20.40	27.80	23.40	23.10

ตารางที่ ก.15 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 3) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.00	27.90	37.10	25.40	19.10	20.80	27.90	23.60	23.40
40	28.10	27.80	36.60	25.30	19.20	20.90	27.90	23.80	23.50
41	28.10	28.00	36.10	25.70	19.50	21.20	27.90	23.90	23.70
42	28.10	27.90	35.60	25.90	19.60	21.50	27.90	24.20	23.90
43	28.10	27.90	35.10	25.70	19.80	21.70	27.90	24.30	24.00
44	28.10	27.90	34.70	25.70	20.10	21.90	27.90	24.50	24.20
45	28.10	27.90	34.20	25.20	20.30	22.00	27.90	24.60	24.40
46	28.10	27.90	33.70	25.10	20.40	22.20	27.90	24.80	24.50
47	28.10	27.90	33.50	25.00	20.40	22.40	27.90	25.00	24.70
48	28.20	27.90	33.10	25.20	20.50	22.60	27.90	25.10	24.80

ตารางที่ ก.16 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	28	27.80	32.30	25.10	23.20	23.70	27.80	25.50	25.40
1	85.60	61.50	35.30	24.90	23.40	23.80	27.80	25.90	25.80
2	87.80	84.90	47.60	25.10	23.40	23.90	27.80	26.20	26.20
3	88.50	86.90	55.70	24.40	23.50	24.00	27.80	26.30	26.30
4	88.80	87.80	60.60	24.60	23.70	24.30	27.80	26.50	26.40
5	88.90	88.00	64.00	24.60	23.90	24.90	27.70	26.40	26.40
6	88.90	88.10	66.50	25.00	24.10	25.80	27.60	26.50	26.50
7	89.00	88.10	68.90	24.60	24.40	26.80	27.60	26.60	26.60
8	89.00	88.30	71.20	24.80	24.70	27.60	27.50	26.50	26.50
9	89.00	88.40	72.50	24.60	19.00	22.30	27.50	26.50	26.60
10	89.00	88.20	71.30	24.30	15.30	16.30	27.50	26.60	26.80
11	89.20	88.50	72.60	25.00	15.90	16.50	27.40	26.60	26.70
12	89.10	88.40	73.90	26.10	16.10	16.80	27.40	26.50	26.70
13	89.30	88.60	75.30	26.80	15.60	16.40	27.60	26.70	26.70
14	89.20	88.70	76.30	27.50	14.50	15.20	27.60	26.70	26.60
15	89.30	88.70	77.30	28.10	12.90	13.80	27.80	26.80	26.60
16	89.40	88.90	78.10	25.80	12.00	12.70	27.90	26.70	26.60
17	89.50	89.00	79.00	24.90	12.60	13.20	28.00	26.70	26.60
18	89.70	89.10	80.00	25.60	13.20	13.80	28.00	26.70	26.60
19	88.50	88.60	80.70	25.40	13.60	14.90	27.80	26.60	26.60
20	27.80	84.80	79.10	25.00	14.50	17.40	27.90	26.60	26.70
21	27.90	33.10	64.30	24.40	15.30	18.40	27.80	26.80	26.80
22	27.90	29.10	54.70	25.10	16.00	18.70	27.70	26.90	26.80
23	27.90	28.60	50.10	25.10	16.60	18.70	27.50	26.80	26.70
24	27.90	28.30	48.40	25.00	17.10	18.70	27.50	26.80	26.70
25	27.90	28.10	46.40	24.50	17.60	18.60	27.60	26.80	26.70
26	27.90	28.00	44.60	25.30	18.00	18.50	27.50	26.80	26.70
27	27.80	27.80	43.10	25.50	18.50	18.50	27.50	26.60	26.20
28	27.80	27.80	43.70	25.70	18.50	18.60	27.70	25.50	22.70
29	27.80	27.70	43.80	25.10	18.70	18.70	27.50	22.30	20.60
30	27.80	27.80	43.10	25.40	19.10	19.10	27.50	21.10	21.30
31	27.70	27.70	42.30	24.80	19.40	19.50	27.50	21.20	21.70
32	27.80	27.70	41.50	24.60	19.80	19.90	27.50	22.00	22.00
33	27.70	27.70	40.70	24.70	20.10	20.30	27.50	22.50	22.30
34	27.80	27.70	40.00	24.60	20.40	20.60	27.50	22.80	22.50
35	27.80	27.70	39.30	24.70	20.60	20.90	27.50	22.90	22.70
36	27.90	27.70	38.80	24.40	20.80	21.20	27.60	23.20	22.90
37	27.90	27.70	38.00	25.10	20.90	21.50	27.60	23.40	23.00
38	27.90	27.70	37.40	25.40	21.20	21.70	27.60	23.60	23.20

ตารางที่ ก.16 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 1) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.80	27.70	36.80	25.70	21.40	21.90	27.50	23.80	23.40
40	27.80	27.70	36.30	25.90	21.50	22.00	27.50	23.90	23.50
41	27.80	27.60	35.70	25.10	21.70	22.30	27.50	24.00	23.70
42	27.70	27.60	35.10	24.80	21.80	22.60	27.60	24.30	23.90
43	27.80	27.60	34.70	25.80	22.10	22.70	27.60	24.40	24.00
44	27.80	27.60	34.30	24.70	22.20	22.90	27.60	24.50	24.30
45	27.80	27.60	33.90	25.10	22.30	23.10	27.60	24.70	24.40
46	27.80	27.60	33.50	24.80	22.50	23.20	27.60	24.80	24.50
47	27.80	27.60	33.10	24.50	22.60	23.40	27.60	24.90	24.70
48	27.90	27.60	32.80	25.50	22.70	23.40	27.50	24.90	24.80
49	27.90	27.70	32.50	24.50	22.90	23.50	27.50	25.00	24.90
50	27.90	27.70	32.20	24.80	23.00	23.70	27.60	25.30	25.10

ตารางที่ ก.17 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	81.80	48.10	33.00	25.90	23.20	23.90	27.60	26.00	25.90
1	88.00	81.20	43.80	25.60	23.20	24.10	27.70	26.30	26.20
2	88.80	86.90	53.20	25.10	23.40	24.20	27.60	26.40	26.20
3	88.80	87.70	58.80	25.40	23.70	24.30	27.50	26.40	26.30
4	88.90	88.10	62.50	24.80	24.20	25.00	27.50	26.50	26.40
5	89.00	88.20	65.10	25.40	24.60	25.80	27.50	26.60	26.50
6	89.10	88.30	67.80	24.90	25.00	26.80	27.50	26.60	26.60
7	89.20	88.50	70.20	24.80	25.30	27.70	27.40	26.60	26.60
8	89.20	88.50	69.60	24.60	15.60	16.80	27.50	26.80	26.70
9	89.10	88.50	70.70	24.60	16.00	16.90	27.40	26.80	26.80
10	89.20	88.60	72.20	26.60	15.80	16.60	27.40	26.70	26.70
11	89.20	88.70	73.60	27.30	14.90	15.70	27.50	26.80	26.70
12	89.10	88.60	74.70	28.10	13.30	14.10	27.60	26.80	26.60
13	89.20	88.70	75.80	26.30	11.80	12.60	27.70	26.80	26.50
14	89.40	88.80	76.90	26.20	12.20	12.70	27.80	26.70	26.50
15	89.30	88.80	78.00	25.50	12.70	13.30	27.90	26.80	26.60
16	89.50	89.00	78.90	25.60	13.30	13.90	27.90	26.70	26.60
17	89.60	89.10	79.70	25.20	13.80	14.40	27.70	26.70	26.70
18	89.60	89.00	80.50	25.50	14.20	14.80	27.60	26.70	26.70
19	29.40	88.70	81.30	25.10	14.80	16.70	27.50	26.70	26.70
20	27.70	50.90	74.60	24.80	15.50	18.50	27.40	26.70	26.70
21	27.70	32.50	59.80	25.10	16.10	18.90	27.40	26.80	26.80
22	27.80	29.60	52.60	25.40	16.60	19.10	27.40	26.80	26.70
23	27.70	28.70	50.30	25.60	17.10	19.00	27.50	26.80	26.80
24	27.80	28.30	47.90	25.40	17.50	18.90	27.50	26.80	26.80
25	27.60	28.20	45.60	25.80	18.00	18.80	27.50	26.90	26.70
26	27.60	27.90	44.60	25.80	18.40	18.80	27.60	26.10	24.80
27	27.60	27.80	45.00	25.70	18.70	18.90	27.50	23.60	21.20
28	27.60	28.10	44.50	25.30	19.00	19.20	27.50	21.70	21.20
29	27.60	27.90	43.50	25.20	19.40	19.60	27.40	21.30	21.40
30	27.70	27.80	42.60	25.40	19.70	20.00	27.40	21.30	21.70
31	27.70	27.80	41.70	25.00	20.00	20.30	27.40	21.70	21.80
32	27.60	27.70	40.90	25.10	20.20	20.70	27.40	22.00	22.00
33	27.70	27.70	40.10	24.50	20.40	20.90	27.40	22.20	22.10
34	27.70	27.70	39.30	25.00	20.50	21.20	27.50	22.50	22.30
35	27.80	27.70	38.80	25.40	20.70	21.40	27.50	22.60	22.40
36	27.70	27.60	38.00	25.50	20.90	21.60	27.50	22.70	22.60
37	27.60	27.60	37.30	25.60	21.00	21.80	27.40	22.90	22.60
38	27.80	27.60	36.90	24.80	21.30	22.00	27.50	23.10	22.90

ตารางที่ ก.17 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.70	27.70	36.30	25.40	21.50	22.20	27.50	23.20	23.10
40	27.70	27.70	35.80	24.80	21.60	22.40	27.40	23.40	23.20
41	27.80	27.60	35.30	25.00	21.70	22.60	27.50	23.60	23.50
42	27.80	27.70	34.90	25.60	21.80	22.70	27.50	23.70	23.50
43	27.80	27.70	34.40	25.60	21.90	22.90	27.50	23.80	23.60
44	27.80	27.60	34.00	25.40	22.00	23.00	27.50	23.90	23.70
45	27.70	27.50	33.50	25.70	22.20	23.10	27.50	24.10	23.90
46	27.70	27.60	33.10	25.70	22.30	23.30	27.50	24.20	24.00
47	27.70	27.60	32.80	24.90	22.50	23.50	27.50	24.30	24.20
48	27.70	27.60	32.50	24.70	22.60	23.60	27.50	24.40	24.30

ตารางที่ ก.18 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 80°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	86	66.10	45.60	24.30	22.70	28.30	27.30	26.70	26.90
1	87.30	84.40	56.50	24.60	23.10	28.20	27.60	26.90	27.10
2	88.20	86.60	62.40	24.70	23.00	27.70	27.40	26.60	26.70
3	88.90	87.60	67.10	25.40	23.30	27.40	27.30	26.50	26.70
4	89.50	88.40	69.90	24.10	23.60	27.50	27.40	26.50	26.60
5	90.10	88.90	70.20	24.40	15.30	16.40	27.40	26.60	26.80
6	90.60	89.60	71.70	24.20	15.70	16.50	27.40	26.60	26.70
7	91.20	90.20	73.30	26.20	15.90	16.70	27.40	26.60	26.70
8	91.80	90.70	74.80	26.60	15.30	16.00	27.30	26.50	26.50
9	92.60	91.60	76.40	27.50	14.00	14.90	27.60	26.70	26.60
10	93.50	92.50	77.70	28.20	12.70	13.60	27.80	26.80	26.70
11	93.90	93.10	79.00	26.10	12.10	12.80	28.00	26.70	26.70
12	94.30	93.50	80.30	25.30	12.70	13.30	28.10	26.70	26.70
13	92.10	92.20	81.60	25.40	13.40	16.40	28.00	26.70	26.70
14	28.10	92.60	81.80	25.80	14.40	19.40	27.80	26.70	26.60
15	28.00	34.60	67.50	25.90	15.30	20.50	27.80	27.00	26.80
16	27.90	29.50	56.80	25.10	15.90	20.50	27.70	27.00	26.90
17	27.90	28.80	51.70	24.80	16.50	20.20	27.70	27.00	26.90
18	27.90	28.30	49.50	25.20	17.00	19.70	27.60	26.90	26.70
19	27.80	28.10	47.30	25.40	17.50	19.40	27.70	26.90	26.70
20	28.00	28.00	45.50	24.90	18.00	19.10	27.70	26.90	26.70
21	27.90	28.00	44.20	24.60	18.50	19.00	27.60	26.30	25.30
22	28.00	28.00	44.90	24.70	19.00	19.00	27.70	23.70	20.90
23	28.00	28.00	44.40	25.50	19.20	19.00	27.70	21.60	21.00
24	28.00	28.00	43.60	25.60	19.50	19.40	27.80	21.10	21.50
25	28.00	27.90	42.50	25.40	19.80	19.70	27.80	21.60	21.80
26	28.00	27.90	41.70	25.90	20.20	20.00	27.80	22.10	22.00
27	28.00	27.90	40.90	25.70	20.50	20.40	27.80	22.50	22.20
28	28.00	27.90	40.10	25.80	20.80	20.70	27.80	22.80	22.40
29	27.90	27.80	39.50	25.10	21.10	21.00	27.80	23.00	22.60
30	27.90	27.80	38.80	25.10	21.40	21.30	27.70	23.30	22.80
31	27.90	27.80	38.20	25.30	21.50	21.50	27.80	23.50	23.00
32	28.00	27.80	37.50	25.30	21.70	21.80	27.80	23.70	23.30
33	28.00	27.90	37.10	25.20	21.90	22.00	27.80	23.80	23.50
34	28.00	27.80	36.40	25.60	22.10	22.20	27.80	24.10	23.60
35	28.10	28.00	36.00	25.20	22.20	22.50	27.80	24.20	23.80
36	28.10	27.90	35.50	25.10	22.30	22.50	27.80	24.40	24.00
37	28.10	27.90	35.00	25.20	22.40	22.70	27.80	24.50	24.20
38	28.00	27.90	34.50	25.70	22.50	22.90	27.80	24.70	24.30

ตารางที่ ก.19 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	71.90	38.30	36.80	26.10	23.90	24.70	27.30	27.20	26.50
1	82.20	74.70	46.80	25.80	24.20	24.90	27.30	27.30	26.70
2	84.30	81.30	57.50	25.70	24.30	25.00	27.30	27.40	26.90
3	85.70	83.90	63.80	26.20	24.40	25.30	27.30	27.50	27.00
4	86.50	85.20	68.00	26.10	24.60	26.00	27.30	27.80	27.30
5	87.20	86.00	71.20	26.30	24.80	26.50	27.90	27.80	27.30
6	88.10	86.80	73.10	26.30	25.20	27.30	28.50	27.80	27.50
7	88.80	87.80	75.30	26.30	25.40	28.00	28.70	27.80	27.50
8	89.60	88.60	76.90	26.10	25.70	28.80	28.90	27.90	27.60
9	90.20	89.30	78.40	26.20	25.90	29.40	28.90	27.90	27.60
10	91.00	89.90	79.60	25.70	26.00	30.00	28.90	27.90	27.60
11	91.60	90.60	80.90	25.60	26.10	30.40	28.90	27.90	27.50
12	92.40	91.40	82.10	26.10	26.30	30.80	28.90	27.80	27.50
13	92.90	92.00	82.90	26.20	26.10	28.60	29.00	27.80	27.50
14	93.50	92.40	79.00	26.50	4.20	5.60	28.90	28.00	27.70
15	94.20	93.20	79.80	26.50	2.60	3.40	28.90	27.90	27.60
16	94.60	93.70	80.90	25.80	1.70	2.50	29.00	27.80	27.60
17	95.00	94.10	81.80	24.90	1.00	1.80	28.90	27.70	27.40
18	95.50	94.60	83.00	24.80	1.30	2.10	28.90	27.60	27.60
19	96.20	95.30	84.20	25.70	2.10	2.60	29.00	27.50	27.50
20	96.60	95.80	85.00	25.80	2.60	3.10	29.00	27.40	27.50
21	96.80	96.00	85.80	25.50	3.00	3.60	29.00	27.40	27.40
22	96.90	96.30	86.60	25.40	3.60	4.00	28.90	27.20	27.20
23	97.10	96.50	87.30	25.10	4.00	4.60	29.00	27.30	27.30
24	97.20	96.60	88.00	25.50	4.50	5.00	29.00	27.20	27.20
25	97.10	96.60	88.50	25.60	4.80	5.50	29.00	27.10	27.20
26	97.10	96.60	89.00	25.30	5.30	5.80	28.90	26.90	27.10
27	96.90	96.60	89.60	25.30	5.70	6.30	28.90	26.80	26.90
28	96.60	96.40	89.90	25.90	6.40	6.80	29.00	26.80	26.90
29	96.40	96.10	90.10	26.60	6.10	6.60	29.00	26.70	26.80
30	96.10	95.90	90.20	26.40	5.40	6.00	28.90	26.70	26.70
31	96.40	95.80	90.30	26.00	4.40	4.90	28.90	26.60	26.70
32	96.50	96.00	90.50	26.20	3.40	4.20	28.90	26.80	26.80
33	96.50	95.70	90.60	25.90	2.50	3.20	28.90	26.90	26.80
34	28.70	95.60	89.50	25.30	4.80	5.30	29.00	26.70	26.60
35	28.80	32.10	72.50	24.80	6.50	7.90	28.90	26.60	26.50
36	28.70	30.40	59.40	25.30	8.60	10.00	28.80	26.60	26.60
37	28.70	29.80	51.90	25.40	10.30	11.80	28.70	27.00	26.70
38	28.80	29.60	46.50	25.70	11.90	13.50	28.90	27.10	26.80

ตารางที่ ก.19 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 1) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.70	29.20	42.80	25.60	13.10	14.90	28.80	27.30	26.90
40	28.70	28.90	40.00	25.60	14.00	16.20	28.80	27.60	27.10
41	28.70	28.90	37.80	25.50	14.70	16.90	28.80	27.50	27.10
42	28.70	28.80	36.20	25.70	15.20	17.50	28.90	26.10	26.10
43	28.70	28.70	34.90	25.40	15.80	18.00	28.80	26.00	24.90
44	28.70	28.70	33.90	25.40	16.40	18.40	28.80	24.40	21.40
45	28.70	28.80	33.50	25.30	17.20	18.90	28.80	19.00	16.60
46	28.70	28.80	33.10	25.70	19.00	18.90	28.80	17.00	16.30
47	28.70	28.70	32.80	25.30	19.50	19.70	28.80	16.80	16.20
48	28.70	28.70	32.50	25.40	19.80	19.80	28.90	17.20	16.40
49	28.60	28.70	32.40	25.40	20.00	20.10	28.80	17.50	16.70
50	28.70	28.70	32.30	25.50	20.20	20.40	28.90	17.70	17.10
51	28.60	28.60	32.20	25.60	20.30	20.60	28.80	17.50	16.10
52	28.70	28.70	32.20	24.80	20.40	20.80	28.70	17.50	16.20
53	28.70	28.60	32.40	25.40	20.40	20.90	28.80	17.70	16.70
54	28.70	28.60	32.60	25.30	20.40	21.10	28.60	17.80	17.00
55	28.60	28.50	32.60	25.70	20.50	21.40	28.70	18.00	17.50
56	28.70	28.50	33.00	25.90	20.90	21.70	28.70	18.40	17.70
57	28.60	28.60	33.20	26.10	21.10	22.00	28.50	18.70	18.10
58	28.70	28.70	33.50	26.10	21.40	22.40	28.70	18.70	18.30
59	28.60	28.60	33.60	26.20	21.70	22.70	28.60	18.80	18.70
60	28.50	28.40	33.70	25.20	21.70	22.80	28.60	18.90	18.80
61	28.70	28.50	33.80	25.40	21.90	22.60	28.60	19.20	19.10
62	28.70	28.50	34.00	25.70	21.80	22.60	28.60	19.30	19.30
63	28.60	28.50	34.10	25.30	21.80	22.60	28.70	19.40	19.60
64	28.50	28.60	34.40	25.70	21.70	22.70	28.50	19.60	19.80
65	28.60	28.60	34.40	25.60	21.90	22.80	28.50	20.20	20.10
66	28.40	28.40	34.10	25.20	21.70	22.90	28.50	20.50	20.20
67	28.50	28.50	34.10	25.30	21.70	22.80	28.50	20.70	20.50
68	28.60	28.50	34.10	25.70	21.70	22.90	28.50	20.90	20.70
69	28.40	28.60	34.10	25.60	21.90	22.80	28.50	21.00	20.90
70	28.50	28.60	34.10	25.20	21.80	22.90	28.50	21.30	21.10
71	28.60	28.40	34.10	25.30	21.70	22.80	28.50	21.50	21.30
72	28.40	28.50	34.10	25.70	21.90	22.90	28.50	21.70	21.50
73	28.50	28.50	34.10	25.60	21.70	22.80	28.50	21.90	21.70
74	28.60	28.60	34.10	25.20	21.70	22.90	28.50	22.00	21.90
75	28.40	28.60	34.10	25.30	21.70	22.80	28.50	24.30	22.60
76	28.50	28.40	34.10	25.70	21.90	22.90	28.50	25.20	23.20

ตารางที่ ก.20 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	83.50	56.70	36.20	25.80	21.80	22.60	28.30	27.20	26.80
1	86.80	81.70	53.90	25.90	21.80	22.80	28.30	27.30	27.00
2	88.60	86.10	64.40	25.70	22.10	23.10	28.30	27.50	27.10
3	89.30	87.60	70.30	24.70	21.90	23.80	28.30	27.50	27.20
4	90.10	88.80	74.60	25.30	22.10	24.50	28.20	27.40	27.20
5	90.60	89.40	77.40	25.40	21.90	25.40	28.30	27.50	27.20
6	91.20	90.10	79.70	25.20	21.80	26.20	28.20	27.40	27.30
7	92.10	90.90	81.80	25.60	22.00	27.00	28.10	27.40	27.30
8	92.70	91.60	83.40	25.90	22.10	27.80	28.10	27.50	27.30
9	93.20	92.20	84.80	25.40	22.20	28.30	28.00	27.40	27.10
10	93.80	92.80	86.10	25.50	22.40	28.70	28.00	27.30	27.10
11	94.30	93.30	84.40	25.30	6.40	7.60	27.90	27.40	27.20
12	94.90	93.80	84.60	24.90	6.80	7.60	27.90	27.50	27.20
13	95.40	94.50	85.40	26.50	7.20	7.80	27.80	27.40	27.20
14	95.90	95.10	86.20	26.70	6.90	7.30	27.70	27.40	27.10
15	96.30	95.50	86.90	27.60	5.90	6.50	27.70	27.40	27.10
16	96.50	95.80	87.40	27.00	4.80	5.40	27.70	27.40	27.00
17	96.90	96.40	88.00	26.70	3.90	4.40	27.70	27.40	27.00
18	97.10	96.50	88.60	26.00	2.90	3.50	27.70	27.30	26.90
19	97.20	96.60	89.30	26.00	3.30	3.80	27.80	27.30	27.00
20	97.30	96.80	89.90	25.50	4.10	4.40	27.80	27.10	26.90
21	97.10	96.70	90.20	26.10	4.60	5.20	27.80	27.10	26.90
22	96.90	96.60	90.50	26.20	5.20	5.70	27.70	27.00	26.80
23	96.80	96.40	90.80	26.40	5.70	6.10	27.70	26.90	26.80
24	96.60	96.20	91.00	26.00	6.20	6.60	27.60	26.80	26.70
25	51.40	95.60	91.20	25.50	7.30	8.30	27.60	26.80	26.70
26	28.00	95.60	89.10	25.50	9.00	8.70	28.1	26.80	26.70
27	28.10	73.00	79.90	25.70	9.70	10.90	27.70	27.20	26.90
28	28.10	35.70	63.70	25.80	11.70	12.90	27.60	27.20	26.80
29	28.00	30.70	53.30	26.00	13.40	14.60	27.80	27.20	26.80
30	27.80	29.30	47.20	26.00	14.70	16.00	27.90	27.20	26.80
31	27.70	28.70	43.00	25.90	15.60	17.30	27.90	27.30	26.90
32	27.80	28.40	40.00	25.70	16.40	18.10	27.90	27.40	27.00
33	27.70	28.10	37.60	25.80	17.00	18.70	27.90	26.40	26.00
34	27.70	27.90	35.80	26.00	17.60	19.10	27.80	24.90	20.30
35	27.60	27.90	34.40	26.00	19.00	18.50	27.80	21.90	19.70
36	27.70	28.10	33.40	25.90	19.30	19.70	27.80	21.60	20.10
37	27.60	27.90	32.60	25.80	19.60	20.30	27.70	20.50	20.30
38	27.60	28.00	32.20	25.60	19.90	20.70	27.70	19.00	20.50

ตารางที่ ก.20 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.70	27.90	31.80	25.20	20.20	20.90	27.70	18.70	20.70
40	27.80	28.00	31.60	25.30	20.30	21.00	27.70	18.70	21.00
41	27.80	27.90	31.40	25.80	20.30	21.10	27.70	18.80	21.20
42	27.90	28.10	31.30	26.00	20.70	21.30	27.70	18.80	21.30
43	27.80	27.90	31.20	26.10	20.90	21.50	27.80	18.90	21.40
44	27.80	27.80	31.10	26.10	21.10	21.70	27.70	19.80	21.50
45	27.70	27.70	31.20	26.00	21.30	22.00	27.80	21.00	21.60
46	27.80	27.80	31.20	26.20	21.60	22.40	28.00	22.00	21.90
47	27.60	27.70	31.30	26.90	22.10	22.30	27.90	23.00	22.20
48	27.60	27.70	31.40	26.40	22.30	22.40	28.20	24.30	22.50
49	27.70	27.70	31.50	26.30	22.30	22.40	28.10	24.40	22.70
50	27.90	27.90	31.80	26.10	22.30	22.50	28.20	24.60	23.00
51	27.80	27.80	31.80	26.20	21.90	22.40	28.20	24.80	23.20
52	27.60	27.60	31.80	26.40	21.60	22.50	28.30	24.80	23.30
53	27.90	27.80	32.00	26.10	21.60	22.60	28.30	25.00	23.60

ตารางที่ ก.21 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	84.60	53.10	33.40	26.20	21.40	23.00	28.40	26.60	25.90
1	92.70	86.20	52.20	26.00	21.20	23.10	28.30	26.90	26.40
2	93.70	91.10	65.50	26.40	21.20	24.10	28.30	27.10	26.60
3	94.20	92.80	72.60	24.80	21.00	25.80	28.10	27.10	26.70
4	94.80	93.70	77.30	25.20	20.90	28.10	28.00	27.20	26.90
5	95.50	94.30	80.80	25.40	20.90	30.20	27.90	27.20	27.00
6	95.90	95.00	83.50	25.80	20.90	31.90	27.80	27.20	26.90
7	96.50	95.50	85.60	25.50	21.10	33.20	27.70	27.20	26.90
8	96.90	96.00	87.50	25.20	21.20	34.00	27.70	27.10	26.90
9	97.10	96.30	87.90	25.20	3.80	6.00	27.60	27.10	27.20
10	97.20	96.40	87.50	25.20	1.80	2.70	27.60	27.20	27.10
11	97.10	96.40	88.10	26.00	1.20	1.90	27.50	27.10	27.00
12	96.90	96.30	88.70	26.10	1.00	1.60	27.40	27.00	26.80
13	96.60	96.10	89.00	26.00	1.00	1.50	27.40	27.00	26.80
14	96.50	96.00	89.50	25.60	1.00	1.50	27.30	26.90	26.70
15	96.40	96.00	89.80	25.10	1.20	1.70	27.30	26.90	26.70
16	96.40	95.80	90.10	25.20	1.40	1.90	27.20	26.80	26.70
17	96.40	95.80	90.40	25.00	1.70	2.10	27.20	26.70	26.70
18	96.30	95.80	90.60	25.40	2.00	2.40	27.20	26.70	26.60
19	96.20	95.70	90.80	25.50	2.40	2.70	27.00	26.50	26.50
20	96.20	95.70	91.00	26.00	2.80	3.20	27.00	26.60	26.60
21	96.10	95.70	91.10	26.00	3.20	3.70	26.90	26.50	26.50
22	96.00	95.60	91.30	26.10	3.80	4.10	26.90	26.40	26.30
23	94.80	94.70	91.50	25.30	4.30	5.10	26.80	26.40	26.30
24	91.80	92.40	91.80	25.80	6.20	6.70	26.80	26.30	26.30
25	27.40	94.50	89.00	26.00	7.80	9.50	26.80	26.50	26.20
26	27.40	53.20	79.40	26.00	10.10	11.70	26.90	26.50	26.20
27	27.40	31.50	63.10	25.90	11.90	13.50	27.00	26.60	26.20
28	27.40	29.00	53.20	25.30	13.40	15.20	27.10	26.60	26.30
29	27.50	28.30	47.20	25.50	14.70	16.40	27.20	26.70	26.30
30	27.50	28.10	43.00	25.30	15.50	17.30	27.40	26.70	26.40
31	27.60	27.80	39.90	25.10	16.10	17.90	27.40	26.80	26.50
32	27.50	27.60	37.60	25.60	16.50	18.30	27.40	26.80	26.60
33	27.50	27.60	35.60	25.90	17.20	18.70	27.50	26.90	26.50
34	27.50	27.50	34.20	26.00	19.50	14.00	27.50	26.80	26.30
35	27.40	27.40	33.00	26.00	19.20	13.90	27.50	26.20	25.20
36	27.40	27.30	32.10	25.50	19.00	15.30	27.50	25.20	23.40
37	27.50	27.40	31.40	25.60	19.00	17.00	27.40	23.30	20.50
38	27.50	27.50	30.90	25.20	19.20	18.00	27.40	23.10	20.70

ตารางที่ ก.21 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C อุณหภูมิเครื่องควบแน่น 5°C (ครั้งที่ 3) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.50	27.50	30.60	25.40	19.40	18.90	27.50	22.60	21.20
40	27.70	27.60	30.60	25.80	19.70	19.50	27.50	21.60	21.50
41	27.70	27.70	30.40	25.90	20.00	19.90	27.50	20.70	20.50
42	27.70	27.70	30.40	26.00	20.40	20.20	27.50	19.80	19.50
43	27.60	27.70	30.30	26.00	20.60	20.60	27.60	18.90	18.50
44	27.60	27.70	30.30	25.70	20.90	20.80	27.60	18.50	17.80
45	27.70	27.70	30.40	25.60	21.00	21.00	27.60	19.60	18.50
46	27.70	27.60	30.50	25.30	20.90	21.20	27.60	20.70	19.50
47	27.70	27.60	30.60	25.10	20.90	21.40	27.70	22.00	21.70
48	27.70	27.80	30.70	25.40	20.90	21.70	27.70	23.40	23.30
49	27.90	27.80	30.90	26.00	21.10	21.90	27.80	24.30	23.50
50	27.80	27.70	30.90	26.00	21.30	22.20	27.70	25.10	23.70
51	27.80	27.70	31.00	26.00	21.50	22.40	27.80	25.30	23.80
52	27.70	27.70	31.00	25.90	21.70	22.60	27.80	25.50	24.00
53	27.80	27.70	31.00	25.50	21.80	22.60	27.80	25.50	24.20
54	27.80	27.70	31.00	25.70	21.80	22.50	27.60	25.40	24.30
55	27.80	27.60	31.00	25.10	21.70	22.70	27.80	25.60	24.60
56	27.80	27.60	31.00	25.30	21.70	22.70	27.70	25.70	24.70
57	27.90	27.70	31.10	25.80	21.70	22.90	27.80	25.80	24.80

ตารางที่ ก.22 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	83.90	48.20	33.90	25.10	22.00	23.30	27.80	26.50	26.00
1	91.90	84.90	44.70	25.40	22.10	23.30	27.80	26.70	26.30
2	92.90	90.70	53.60	25.20	21.90	29.10	27.80	26.70	26.40
3	93.60	91.70	59.50	25.10	21.60	30.50	27.70	26.80	26.50
4	94.00	92.80	64.00	25.60	21.50	31.60	27.70	26.80	26.60
5	94.40	93.30	67.80	26.00	21.50	32.50	27.70	26.90	26.70
6	94.90	93.90	70.80	26.00	21.60	32.80	27.70	26.90	26.70
7	95.30	94.40	73.50	25.50	21.70	33.10	27.60	26.90	26.70
8	95.80	94.90	76.30	25.10	21.70	33.40	27.50	26.80	26.60
9	96.30	95.50	78.80	25.10	21.80	33.80	27.60	26.80	26.70
10	96.60	95.90	81.00	25.40	20.40	22.50	27.50	26.80	26.70
11	97.00	96.10	80.50	24.80	10.50	11.40	27.50	27.00	26.80
12	97.10	96.40	82.00	24.90	10.90	11.50	27.30	26.80	26.70
13	97.40	96.70	83.30	25.80	11.40	12.00	27.30	26.90	26.70
14	97.40	96.80	84.50	27.10	11.80	12.40	27.20	26.80	26.60
15	97.10	96.70	85.40	27.10	11.30	11.90	27.10	26.70	26.50
16	96.80	96.50	86.30	26.30	10.30	10.90	27.10	26.80	26.40
17	96.60	96.30	87.20	26.90	9.20	9.90	27.30	26.90	26.60
18	96.40	96.10	87.70	26.50	8.10	8.80	27.30	26.90	26.60
19	96.30	95.90	88.30	25.60	7.40	8.10	27.40	26.90	26.50
20	96.20	95.80	89.00	25.10	8.10	8.60	27.20	26.70	26.40
21	96.10	95.80	89.60	25.40	8.70	9.20	27.20	26.60	26.50
22	96.00	95.60	89.80	25.60	9.30	9.80	27.20	26.60	26.50
23	27.20	95.30	89.80	25.50	10.40	11.60	27.30	26.50	26.40
24	27.30	31.60	72.90	25.90	11.40	11.60	27.70	26.50	26.40
25	27.40	28.70	59.30	25.50	12.20	13.40	27.30	26.70	26.50
26	27.40	27.90	51.70	25.20	13.70	14.90	27.20	26.80	26.50
27	27.50	27.70	46.90	24.90	14.90	16.10	27.20	26.80	26.50
28	27.60	27.70	43.60	24.90	15.80	17.10	27.20	26.80	26.50
29	27.60	27.60	41.00	24.40	16.50	17.80	27.40	26.30	26.00
30	27.60	27.60	39.00	25.60	17.10	18.40	27.40	25.20	24.90
31	27.70	27.60	37.30	25.60	17.70	19.00	27.40	24.70	24.20
32	27.80	27.60	35.90	25.80	18.30	19.50	27.40	23.00	21.80
33	27.80	27.60	34.90	25.80	18.80	19.80	27.40	21.10	19.10
34	27.90	27.70	37.00	26.00	19.20	20.30	27.40	19.50	17.30
35	27.90	27.80	39.10	25.40	19.70	20.70	27.40	19.30	17.00
36	28.00	27.80	40.00	25.50	19.90	21.00	27.40	18.90	16.80
37	28.20	27.90	40.10	24.90	20.20	21.20	27.50	18.00	15.90
38	28.20	28.00	39.80	25.50	20.40	21.30	27.50	19.00	17.10

ตารางที่ ก.22 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 1) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.20	28.10	39.50	25.80	20.70	21.60	27.60	20.20	18.30
40	28.20	28.00	39.00	26.00	20.80	21.80	27.60	21.00	19.10
41	28.20	28.10	38.50	25.80	21.00	22.00	27.60	22.50	20.60
42	28.30	28.10	38.10	25.00	21.10	22.00	27.70	24.70	22.90
43	28.40	28.20	37.70	25.10	21.20	21.90	27.70	24.80	23.10
44	28.40	28.20	37.20	24.30	21.10	21.90	27.90	25.00	23.40
45	28.50	28.30	36.90	24.50	21.10	21.70	27.90	25.10	23.50
46	28.60	28.30	36.60	25.40	21.20	21.70	27.90	25.20	23.80
47	28.50	28.30	36.10	25.60	21.40	21.90	28.10	25.50	24.00
48	28.50	28.30	35.70	25.80	21.50	22.00	28.10	25.70	24.20
49	28.50	28.40	35.50	25.80	21.70	22.20	28.10	25.80	24.40
50	28.70	28.40	35.20	25.90	22.00	22.30	28.20	25.90	24.50
51	28.50	28.40	34.80	25.80	22.20	22.50	28.20	26.00	24.70
52	28.50	28.40	34.60	25.80	22.30	22.60	28.20	26.10	24.90
53	28.50	28.30	34.20	24.60	22.20	22.60	28.20	26.20	25.10
54	28.70	28.40	34.00	25.70	22.30	22.50	28.30	26.30	25.30
55	28.60	28.40	33.80	25.80	22.40	22.60	28.30	26.40	25.40
56	28.50	28.40	33.40	26.00	22.50	22.70	28.20	26.50	25.90

ตารางที่ ก.23 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	79.20	43.60	33.50	25.00	22.50	23.60	28.20	27.20	26.70
1	86.30	79.80	43.90	24.90	22.30	23.80	28.30	27.40	26.90
2	88.40	85.60	53.30	24.50	22.20	24.80	28.30	27.40	27.10
3	89.50	87.80	59.10	24.30	22.20	26.40	28.30	27.50	27.20
4	90.10	88.80	63.70	25.00	22.00	28.00	28.20	27.40	27.10
5	90.90	89.60	67.50	25.50	21.90	29.70	28.10	27.50	27.10
6	91.50	90.30	70.20	25.70	21.90	31.10	28.20	27.50	27.20
7	92.20	91.00	73.00	27.40	22.10	32.00	28.10	27.50	27.20
8	92.80	91.70	75.40	27.10	22.30	32.50	28.10	27.40	27.10
9	93.40	92.30	77.60	26.60	22.30	33.00	28.20	27.40	27.10
10	93.80	93.00	79.70	26.80	22.30	33.60	28.30	27.40	27.10
11	94.40	93.40	80.90	26.20	21.20	22.90	28.30	27.40	27.20
12	95.00	94.00	80.10	25.10	7.10	7.90	28.40	27.60	27.40
13	95.50	94.60	81.30	25.00	7.70	8.30	28.40	27.50	27.40
14	96.00	95.20	82.80	25.90	8.40	8.90	28.30	27.50	27.40
15	96.40	95.70	84.00	25.90	8.90	9.30	28.30	27.40	27.40
16	96.70	96.10	85.20	25.40	9.40	9.90	28.20	27.40	27.40
17	97.00	96.40	86.30	24.70	9.80	10.30	28.10	27.40	27.30
18	97.30	96.70	87.60	25.00	10.40	10.80	28.00	27.30	27.20
19	97.40	96.80	88.30	25.80	10.70	11.10	27.80	27.20	27.20
20	97.30	96.90	89.00	26.00	11.10	11.60	27.70	27.10	27.00
21	97.00	96.60	89.70	27.00	11.60	12.00	27.60	27.10	27.00
22	96.70	96.40	90.20	26.90	12.30	13.60	27.50	27.00	26.90
23	29.80	95.90	90.70	27.00	13.90	14.50	27.60	27.20	27.00
24	27.60	95.30	86.40	27.40	15.00	16.60	27.60	27.20	27.00
25	27.60	44.60	69.40	27.00	16.50	18.10	28.10	27.50	27.10
26	27.80	30.90	58.10	26.90	17.50	19.00	28.00	27.70	27.20
27	27.80	29.10	51.50	26.60	18.00	19.50	28.00	27.70	27.20
28	27.60	28.40	47.00	24.70	18.10	19.70	28.00	27.70	27.20
29	27.70	28.20	43.70	24.00	18.20	19.60	27.90	27.60	27.10
30	27.80	27.90	41.10	25.00	18.60	19.10	27.50	27.30	27.00
31	27.80	28.00	39.20	25.30	18.80	19.10	27.60	26.80	26.40
32	27.80	27.90	37.80	25.70	19.10	19.30	27.60	26.10	25.60
33	27.70	27.80	36.70	25.80	19.10	19.70	27.80	24.20	22.80
34	27.70	27.80	39.50	25.50	19.20	19.90	27.80	22.40	18.80
35	27.70	27.70	43.30	25.30	19.50	20.20	27.80	19.50	18.90
36	27.60	27.80	42.80	25.00	19.70	20.20	27.50	20.40	18.90
37	27.70	27.70	41.60	24.70	19.80	20.30	27.60	20.60	18.80
38	27.70	27.70	40.50	25.10	20.00	20.40	27.60	20.90	19.20

ตารางที่ ก.23 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.70	27.70	39.70	25.60	20.30	20.60	27.60	21.80	20.40
40	27.70	27.70	38.90	25.80	20.50	20.80	27.60	22.80	21.40
41	27.60	27.60	38.20	25.90	20.70	21.20	27.60	23.70	22.40
42	27.60	27.60	37.60	25.80	21.10	21.40	27.60	24.70	23.30
43	27.60	27.60	37.00	26.00	21.30	21.70	27.60	24.80	23.40
44	27.60	27.60	36.50	25.90	21.50	21.90	27.70	25.20	23.50
45	27.60	27.60	36.10	25.30	21.70	22.00	27.50	25.00	23.60
46	27.70	27.60	35.90	25.70	21.80	22.00	27.50	25.00	23.80
47	27.70	27.60	35.60	25.80	21.80	22.10	27.50	25.10	23.90
48	27.60	27.60	35.20	25.80	22.00	22.50	27.70	25.40	24.20
49	27.60	27.50	34.80	25.60	22.20	22.60	27.70	25.50	24.40
50	27.60	27.50	34.40	25.30	22.20	22.50	27.50	25.40	24.30
51	27.60	27.60	34.10	25.90	22.30	22.70	27.70	25.70	24.80

ตารางที่ ก.24 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	27.80	27.60	32.90	26.20	22.40	23.10	27.80	26.60	26.00
1	84.00	60.00	36.30	25.30	22.10	23.30	27.70	26.60	26.20
2	86.40	83.50	47.90	25.60	22.00	25.20	27.70	26.80	26.40
3	88.10	86.00	55.80	26.00	22.00	27.50	27.70	26.90	26.50
4	88.90	87.30	60.90	26.10	22.10	29.70	27.80	27.10	26.70
5	89.40	88.00	65.40	25.50	22.00	31.50	27.60	27.00	26.60
6	90.00	88.80	68.20	25.10	22.20	32.90	27.70	27.00	26.70
7	90.90	89.90	71.30	25.30	22.40	33.70	27.60	27.10	26.80
8	91.50	90.40	73.30	25.70	22.10	34.40	27.40	26.90	26.70
9	92.30	91.30	75.70	25.00	22.00	34.60	27.40	26.90	26.70
10	92.80	92.00	78.20	25.70	21.90	34.80	27.40	26.90	26.70
11	93.70	92.70	80.20	26.00	22.10	35.10	27.60	27.10	26.80
12	94.30	93.30	79.80	26.20	11.10	12.30	27.60	27.30	27.10
13	94.80	93.80	80.60	25.80	11.60	12.20	27.50	27.20	26.80
14	95.20	94.30	82.10	27.10	11.60	12.30	27.60	27.30	26.90
15	95.80	94.90	83.30	27.20	10.90	11.60	27.70	27.20	27.00
16	96.30	95.60	84.50	27.40	9.70	10.30	27.80	27.20	26.90
17	96.60	96.00	85.70	26.90	8.40	9.10	27.90	27.20	26.90
18	96.90	96.30	86.80	25.50	7.60	8.10	28.00	27.10	26.90
19	97.20	96.60	87.70	24.90	8.20	8.40	27.90	26.80	26.70
20	97.20	96.60	88.40	24.90	8.60	9.10	27.90	26.80	26.80
21	97.40	96.90	89.40	25.80	9.40	10.00	28.20	27.10	26.90
22	97.20	96.80	90.10	26.20	10.00	10.50	28.20	27.10	27.00
23	97.10	96.80	90.70	25.90	10.60	11.10	28.10	27.00	26.90
24	72.70	96.00	91.30	25.20	12.10	14.20	27.90	27.00	26.90
25	27.20	95.80	89.70	24.80	13.90	12.90	27.60	26.90	26.90
26	27.10	92.20	82.10	24.90	13.40	14.60	27.20	26.90	26.90
27	27.20	36.20	67.30	25.50	14.80	15.90	27.20	27.10	26.80
28	27.50	29.30	57.20	25.80	16.10	17.10	27.30	27.10	26.70
29	27.70	28.50	51.20	25.90	17.10	18.10	27.30	27.00	26.70
30	27.50	28.10	46.60	25.50	17.60	19.00	27.40	27.00	26.70
31	27.40	27.70	43.30	25.20	18.00	19.50	27.30	26.90	26.60
32	27.70	28.20	41.10	25.30	18.60	19.80	27.30	26.90	26.60
33	27.50	27.60	39.00	24.60	18.70	19.80	27.20	26.70	26.40
34	27.50	27.60	37.70	25.40	19.10	19.90	27.20	26.70	26.20
35	27.50	27.60	36.40	25.70	19.40	20.40	27.50	25.60	23.70
36	27.70	27.70	36.80	25.90	20.80	18.80	27.50	23.40	21.40
37	27.70	27.70	38.70	25.40	21.20	19.10	27.50	22.20	20.30
38	27.70	27.60	39.40	25.00	20.70	19.50	27.60	21.40	19.20

ตารางที่ ก.24 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 10°C (ครั้งที่ 3) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.80	27.60	39.60	24.80	20.50	19.60	27.40	20.80	18.90
40	27.90	27.70	39.30	25.50	20.40	19.90	27.40	19.40	18.20
41	28.00	27.80	38.90	25.70	20.60	20.50	27.60	19.80	18.30
42	28.10	27.90	38.70	25.70	20.90	20.80	27.60	21.20	19.50
43	28.10	28.10	38.50	25.90	21.00	21.00	27.60	22.20	20.50
44	28.10	28.00	38.00	25.20	21.20	21.00	27.40	23.10	21.40
45	28.10	28.00	37.80	25.30	21.30	21.20	27.50	24.40	23.00
46	28.10	28.10	37.50	24.80	21.30	21.40	27.60	24.50	23.20
47	28.20	28.00	37.10	25.40	21.30	21.60	27.60	24.60	23.40
48	28.20	28.00	36.70	25.60	21.40	21.80	27.60	24.90	23.50
49	28.10	28.00	36.30	25.70	21.50	22.20	27.90	25.20	23.80
50	28.10	28.00	35.90	25.70	21.70	22.50	28.00	25.20	23.90
51	28.10	28.00	35.60	25.30	21.80	22.40	27.80	25.10	23.90
52	28.10	27.90	35.30	24.90	21.80	22.40	27.80	25.30	24.10
53	28.10	28.00	35.10	24.70	21.70	22.50	27.80	25.50	24.40
54	28.20	27.90	34.70	25.00	21.70	22.60	27.90	25.50	24.50
55	28.20	28.00	34.50	25.50	21.80	22.80	27.90	25.60	24.70
56	28.20	28.00	34.10	25.70	21.90	23.00	27.90	25.70	24.80
57	28.10	28.00	33.80	25.80	22.10	23.20	27.90	25.80	24.90

ตารางที่ ก.25 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 1)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	87.10	56.40	33.90	25.00	23.80	22.40	27.50	27.50	24.10
1	90.10	87.10	45.60	24.50	23.80	23.60	27.40	27.50	24.20
2	90.80	88.90	54.00	24.70	23.70	25.80	27.20	27.50	24.30
3	91.00	89.90	59.10	24.60	23.70	28.50	27.10	27.50	24.40
4	91.00	90.00	63.30	24.90	23.60	31.50	27.00	27.50	24.50
5	90.90	90.20	66.70	24.40	23.50	34.30	26.90	27.50	24.50
6	91.10	90.30	69.60	24.90	23.70	36.80	26.90	27.50	24.50
7	91.00	90.30	71.80	24.90	23.60	38.40	26.80	27.50	24.50
8	90.90	90.30	74.00	24.80	23.50	38.70	26.70	27.50	24.50
9	90.90	90.30	75.60	24.60	23.60	38.80	26.50	27.40	24.50
10	90.80	90.30	77.00	24.60	23.60	39.20	26.60	27.40	24.60
11	91.00	90.40	78.30	25.00	23.60	39.60	26.50	27.40	24.60
12	90.90	90.30	79.60	24.80	23.70	39.80	26.30	27.40	24.60
13	90.90	90.50	80.70	24.80	23.70	40.10	26.20	27.40	24.60
14	90.90	90.30	77.80	25.10	16.10	17.30	26.30	27.40	24.90
15	91.10	90.40	78.00	26.10	16.60	17.30	26.30	27.40	24.90
16	91.70	90.90	78.70	26.70	16.00	16.70	26.20	27.40	24.90
17	92.40	91.40	79.70	27.70	15.00	15.60	26.10	27.40	24.80
18	93.10	92.20	80.50	27.50	13.40	14.00	26.10	27.40	24.60
19	93.60	92.70	81.30	26.40	12.10	12.90	26.30	27.40	24.90
20	94.20	93.30	82.20	25.90	12.60	13.30	26.40	27.40	24.90
21	94.70	93.80	83.20	25.70	13.20	13.90	26.30	27.40	24.80
22	95.20	94.30	84.10	24.90	13.70	14.50	26.30	27.40	24.80
23	95.70	95.00	85.00	25.30	14.30	14.90	26.20	27.40	24.90
24	96.20	95.50	85.90	25.20	14.60	15.30	26.10	27.40	24.90
25	96.40	95.80	86.80	25.50	14.90	15.70	26.10	27.40	24.90
26	96.70	96.20	87.60	25.20	15.40	16.20	26.20	27.40	25.00
27	96.90	96.40	88.30	24.90	15.80	16.60	26.20	27.40	25.10
28	97.10	96.60	88.90	25.30	16.20	16.90	26.10	27.40	25.00
29	97.00	96.60	89.50	27.10	16.00	16.80	26.10	27.40	25.00
30	97.20	96.80	90.10	28.00	15.40	16.10	26.20	27.40	25.00
31	97.20	96.90	90.40	28.00	13.90	14.60	26.20	27.50	24.90
32	96.30	96.00	90.50	26.60	12.40	13.30	26.20	27.50	25.00
33	27.80	96.40	90.70	26.30	15.00	14.20	26.30	27.50	25.00
34	27.50	36.50	76.40	25.90	15.00	15.30	26.30	27.50	25.00
35	27.60	29.20	62.30	26.00	16.10	16.30	27.50	27.50	25.60
36	27.60	28.50	57.10	26.00	16.70	17.10	27.50	27.50	26.00
37	27.60	28.40	53.50	25.80	17.20	17.70	27.40	27.50	26.20
38	27.60	27.90	50.60	25.50	17.40	18.20	27.40	27.50	26.30

ตารางที่ ก.25 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 1) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.60	27.80	48.00	25.70	17.40	18.50	27.40	27.50	26.40
40	27.60	27.80	45.90	25.40	17.40	18.80	27.40	27.50	26.50
41	27.60	27.60	44.10	25.10	17.40	19.10	27.40	27.50	26.50
42	27.50	27.50	42.50	25.10	17.40	19.20	27.40	27.50	26.60
43	27.50	27.40	41.40	25.50	17.30	19.30	27.40	27.00	26.70
44	27.50	27.50	41.00	25.40	20.30	14.30	27.40	25.40	25.90
45	27.50	27.40	42.70	25.20	20.60	13.10	27.30	23.00	23.50
46	27.60	27.50	43.80	25.40	20.40	12.80	27.50	20.40	20.90
47	27.60	27.60	44.00	25.30	20.30	14.60	27.40	18.60	19.10
48	27.60	27.50	43.30	25.00	20.30	15.70	27.50	19.40	19.90
49	27.60	27.50	42.70	25.10	20.30	16.30	27.50	19.80	20.30
50	27.60	27.50	42.00	25.20	20.50	16.70	27.50	19.90	20.40
51	27.70	27.50	41.30	24.90	20.60	17.10	27.40	20.10	20.60
52	27.50	27.40	40.70	24.40	20.50	17.50	27.40	20.30	20.80
53	27.60	27.40	40.00	24.20	20.70	17.90	27.50	20.60	21.10
54	27.60	27.40	39.60	24.90	20.90	18.20	27.40	20.70	21.20
55	27.70	27.40	39.00	25.00	20.90	18.60	27.40	21.10	21.60
56	27.70	27.50	38.50	25.40	21.20	19.00	27.50	21.20	21.70
57	27.70	27.50	37.90	25.50	21.40	19.40	27.60	21.60	22.10
58	27.80	27.60	37.50	25.70	21.60	19.80	27.60	21.80	22.30
59	27.60	27.40	36.70	25.10	21.60	20.10	27.60	22.00	22.50
60	27.70	27.50	36.30	25.30	21.80	20.40	27.50	22.20	22.70
61	27.80	27.50	35.80	24.60	22.00	20.60	27.50	22.30	22.80
62	27.70	27.40	35.20	24.10	21.90	20.90	27.50	22.60	23.10
63	27.60	27.40	34.70	24.60	22.00	21.20	27.50	22.80	23.30
64	27.70	27.50	34.40	25.00	22.20	21.30	27.40	22.90	23.40
65	27.70	27.50	34.00	24.90	22.30	21.60	27.40	23.30	23.80
66	27.70	27.60	33.70	24.70	22.40	21.90	27.60	23.20	23.70
67	27.70	27.50	33.20	25.20	22.50	22.20	27.60	23.60	24.10
68	27.70	27.50	32.90	25.20	22.60	22.40	27.60	23.70	24.20
69	27.60	27.50	32.50	25.20	22.70	22.60	27.60	23.80	24.30
70	27.60	27.40	32.10	25.30	22.80	22.90	27.70	24.00	24.50
71	27.70	27.50	32.00	25.30	22.90	23.10	27.70	24.20	24.70
72	27.80	27.60	31.70	25.60	23.30	23.30	27.70	24.30	24.80
73	27.80	27.60	31.40	25.70	23.50	23.40	27.70	24.40	24.90
74	27.60	27.40	31.10	24.80	23.30	23.50	27.60	24.50	25.00
75	27.60	27.40	30.80	24.80	23.40	23.70	27.60	24.70	25.20
76	27.70	27.40	30.70	25.10	23.50	23.70	27.40	24.60	25.10
77	27.70	27.50	30.50	24.30	23.60	23.80	27.40	24.70	25.20

ตารางที่ ก.26 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 2)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	26.30	27.00	27.00	26.10	25.10	25.80	26.00	26.00	25.80
1	76.90	36.60	27.80	26.60	25.10	25.90	26.10	26.00	25.90
2	83.60	77.80	41.80	27.20	25.20	26.10	26.20	26.10	25.90
3	85.80	83.30	53.70	27.70	25.50	26.20	26.20	26.10	25.80
4	87.00	85.80	61.40	27.90	25.60	26.40	26.30	26.20	25.80
5	87.90	87.00	66.70	28.50	25.80	26.60	26.30	26.10	25.70
6	88.50	87.60	70.40	28.50	25.80	27.00	26.50	26.30	25.80
7	89.10	88.30	73.30	28.50	25.90	27.30	26.80	26.40	26.00
8	89.90	89.10	75.90	26.50	26.00	27.60	27.00	26.60	25.90
9	90.50	89.70	77.70	25.70	26.00	27.80	27.10	26.50	25.90
10	91.10	90.30	79.30	25.60	25.90	28.00	27.00	26.40	26.00
11	91.80	90.90	80.20	25.00	25.30	26.60	27.10	26.30	26.00
12	92.20	91.40	79.70	25.20	9.00	10.10	27.10	26.40	26.10
13	92.70	92.00	80.70	25.20	9.40	10.40	27.10	26.30	26.10
14	93.30	92.50	81.90	25.00	9.90	10.70	27.00	26.20	26.00
15	93.80	93.00	83.00	25.30	10.40	11.10	26.90	26.20	26.00
16	94.30	93.50	84.00	25.30	10.70	11.50	26.90	26.10	26.00
17	94.90	94.00	85.00	24.60	11.20	11.90	26.90	26.10	25.90
18	95.30	94.60	86.00	24.80	11.60	12.40	26.80	26.10	26.00
19	95.80	95.00	86.80	25.40	12.00	12.70	26.60	26.00	25.90
20	96.20	95.40	87.60	25.10	12.40	13.10	26.60	25.90	25.90
21	96.50	95.80	88.30	25.20	12.80	13.30	26.30	25.70	25.70
22	96.70	96.10	89.10	24.80	13.20	13.80	26.50	25.80	25.80
23	97.00	96.40	89.80	25.10	13.60	14.30	26.50	25.80	25.80
24	96.80	95.90	90.40	24.80	14.00	14.70	26.40	25.80	25.80
25	27.30	94.80	88.80	24.80	14.90	17.00	26.30	25.60	25.70
26	27.40	30.70	70.30	25.40	15.40	15.80	26.90	25.80	25.90
27	27.50	28.70	61.20	25.10	15.90	16.60	27.00	25.90	25.90
28	27.40	28.10	55.80	24.80	16.30	17.40	26.80	25.90	26.00
29	27.40	27.80	51.80	24.90	16.30	17.90	26.60	25.80	26.00
30	27.40	27.60	48.60	25.20	16.00	18.40	26.70	26.00	26.00
31	27.40	27.40	46.30	25.00	15.90	18.60	26.80	26.10	26.00
32	27.50	27.50	44.50	25.20	15.70	18.70	27.00	26.00	26.00
33	27.50	27.40	42.90	25.10	15.50	18.80	27.00	26.10	26.00
34	27.40	27.30	41.70	25.20	15.30	18.80	27.10	26.10	26.10
35	27.40	27.30	40.50	24.90	15.20	18.70	27.10	26.10	26.10
36	27.40	27.30	38.90	24.60	15.60	18.30	27.10	27.10	25.60
37	27.50	27.30	38.40	24.70	15.30	18.30	27.10	25.40	21.80
38	27.60	27.40	42.70	24.70	15.60	18.30	27.10	22.00	19.00

ตารางที่ ก.26 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 2) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	27.50	27.50	44.90	25.00	15.80	18.20	27.10	20.80	20.20
40	27.60	27.50	44.40	25.10	16.30	18.20	27.10	22.10	20.80
41	27.60	27.50	43.70	25.20	16.70	18.10	27.10	23.00	21.50
42	27.70	27.50	43.10	24.70	16.90	18.20	27.10	23.50	21.60
43	27.70	27.50	42.30	24.50	17.20	18.30	27.10	23.80	21.80
44	27.60	27.50	41.70	24.60	17.30	18.50	27.20	24.60	22.20
45	27.70	27.50	41.60	24.60	17.50	18.60	27.20	24.70	22.30
46	27.60	27.50	41.00	24.40	17.70	18.60	27.10	24.40	22.60
47	27.70	27.50	40.50	24.40	18.00	18.90	26.90	24.70	22.80
48	27.70	27.40	39.80	24.70	18.10	19.10	27.00	25.00	22.90
49	27.70	27.50	39.40	25.10	18.40	19.50	27.20	25.30	23.00
50	27.60	27.40	38.90	24.90	18.50	19.40	27.00	25.10	23.10
51	27.70	27.50	38.40	25.20	18.70	19.80	27.20	25.10	23.50
52	27.60	27.30	37.80	24.70	18.90	19.70	27.00	25.50	23.70
53	27.60	27.40	37.30	25.00	19.10	20.10	27.20	25.80	23.90
54	27.60	27.40	36.80	25.00	19.30	20.10	27.00	26.10	24.00
55	27.60	27.30	36.30	25.20	19.40	20.30	27.00	25.90	24.20
56	27.60	27.30	35.90	24.50	19.60	20.40	27.00	25.80	24.50
57	27.60	27.40	35.40	24.70	19.80	20.60	27.00	25.80	24.60
58	27.60	27.30	34.90	24.40	19.90	20.70	27.00	26.10	24.80
59	27.60	27.30	34.50	24.80	20.10	20.90	27.00	26.20	25.00
60	27.60	27.30	34.10	25.10	20.20	21.00	27.00	26.60	26.00
61	27.60	27.30	33.70	25.10	20.20	21.30	27.00	26.60	26.10
62	27.60	27.40	33.50	25.10	20.50	21.40	27.00	26.60	26.10
63	27.70	27.30	33.00	24.60	20.70	21.50	27.00	26.60	26.10
64	27.70	27.40	32.80	24.80	20.80	21.60	27.00	26.60	26.20
65	27.70	27.50	32.50	24.90	21.00	21.70	27.00	26.60	26.20
66	27.80	27.50	32.20	24.40	21.00	21.80	27.00	26.60	26.20
67	27.70	27.40	31.90	24.80	21.20	22.00	27.00	26.60	26.20
68	27.70	27.50	31.70	24.80	21.30	22.10	27.00	26.60	26.30
69	27.80	27.50	31.50	25.10	21.40	22.20	27.50	26.60	26.30
70	27.70	27.50	31.30	24.60	22.80	21.30	27.70	26.60	26.30

ตารางที่ ก.27 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C

อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 3)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
0	82.10	51.40	30.60	24.30	24.30	24.70	27.50	27.00	26.90
1	86.30	81.00	41.40	24.70	24.20	24.60	27.30	26.90	26.80
2	88.00	85.40	50.50	24.70	24.20	24.90	27.40	26.90	26.80
3	88.80	86.90	56.20	25.00	24.20	25.50	27.30	26.80	26.80
4	89.40	88.00	60.30	24.60	24.20	26.40	27.00	26.60	26.70
5	90.20	88.80	63.60	24.70	24.20	27.60	27.00	26.60	26.60
6	90.90	89.70	66.90	25.00	24.30	28.80	27.00	26.60	26.60
7	91.40	90.40	69.90	25.10	24.30	29.90	27.00	26.60	26.60
8	92.20	91.10	72.30	24.80	24.50	30.70	27.00	26.60	26.60
9	92.70	91.70	74.80	24.80	24.50	31.40	26.90	26.50	26.60
10	93.20	92.30	76.70	25.00	24.60	32.00	26.90	26.50	26.60
11	93.60	92.80	78.60	25.10	24.80	32.50	26.80	26.50	26.50
12	94.10	93.30	80.20	24.50	25.00	32.90	26.80	26.50	26.50
13	94.60	93.60	78.50	25.00	15.40	17.10	26.70	26.40	26.70
14	94.90	94.00	78.30	25.00	15.90	16.70	26.70	26.80	26.60
15	95.30	94.40	79.50	24.80	16.20	16.90	26.70	26.70	26.60
16	95.90	95.00	80.60	26.60	16.10	16.90	26.60	26.60	26.40
17	96.30	95.50	81.80	27.50	15.30	16.20	26.80	26.80	26.60
18	96.90	96.10	83.10	27.90	13.90	14.80	26.80	26.80	26.60
19	97.10	96.40	83.80	27.60	12.50	13.20	26.80	26.80	26.60
20	97.20	96.60	84.80	26.10	12.70	13.40	26.80	26.80	26.50
21	97.30	96.80	85.80	25.90	13.30	14.00	26.80	26.80	26.60
22	97.30	96.80	86.60	25.90	14.00	14.60	26.80	26.70	26.50
23	97.10	96.80	87.40	25.60	14.40	15.00	26.70	26.60	26.60
24	96.70	96.50	88.10	25.60	14.80	15.50	26.60	26.50	26.60
25	96.30	96.10	88.60	25.70	15.20	15.90	26.70	26.60	26.60
26	96.20	95.90	89.10	25.70	15.70	16.40	26.70	26.60	26.60
27	96.10	95.70	89.50	25.50	16.00	16.70	26.60	26.50	26.50
28	95.80	95.50	90.00	25.70	16.40	17.00	26.50	26.50	26.40
29	95.80	95.50	90.40	27.40	16.10	16.80	26.60	26.40	26.40
30	95.80	95.40	90.60	28.10	15.30	16.00	26.50	26.40	26.40
31	95.70	95.40	90.60	27.90	13.80	14.50	26.50	26.40	26.20
32	92.20	93.20	90.60	27.60	14.20	17.00	26.70	26.60	26.40
33	27.90	94.30	90.30	26.40	15.50	19.10	27.10	26.70	26.40
34	28.00	65.30	80.10	26.10	16.40	20.00	28.20	26.70	26.50
35	28.20	32.60	63.80	26.40	17.10	20.40	27.90	27.10	26.80
36	28.50	30.00	58.20	26.00	17.80	20.30	27.80	27.20	26.90
37	28.20	29.00	54.50	25.60	18.10	20.10	28.10	27.30	27.00
38	28.50	29.00	52.00	25.60	15.40	18.00	28.20	27.40	27.10

ตารางที่ ก.27 ผลการทดสอบระบบตลอดวัฏจักร ที่อุณหภูมิสูงสุดของเครื่องดูดซับ 90°C อุณหภูมิเครื่องควบแน่น 15°C (ครั้งที่ 3) (ต่อ)

TIME	Tw,ads_in	Tw,ads_out	Tact	Tamb	Tcond_in	Tcond_out	Tw,evap_in	Tevap_out	Tevap
39	28.30	28.60	48.90	25.60	15.60	18.60	28.10	27.40	27.00
40	28.30	28.60	46.60	25.20	16.00	19.30	28.30	27.60	27.20
41	28.30	28.50	44.90	25.50	16.10	19.80	28.40	27.70	27.40
42	28.40	28.40	43.60	25.40	16.10	20.10	28.30	27.60	27.30
43	28.40	28.40	42.60	25.40	16.20	20.20	28.10	27.40	27.30
44	28.40	28.40	41.70	24.80	16.40	20.30	28.20	27.50	27.30
45	28.40	28.40	40.90	25.20	16.60	20.50	28.20	27.60	27.40
46	28.40	28.40	40.10	25.20	16.70	20.40	28.20	27.40	27.00
47	28.40	28.40	41.90	24.80	16.70	20.50	28.20	26.30	24.50
48	28.50	28.60	42.90	25.20	17.00	20.50	28.20	23.70	20.00
49	28.40	28.60	42.90	25.40	20.60	18.30	28.20	21.70	20.70
50	28.40	28.50	42.60	25.20	20.90	18.60	28.20	21.40	21.30
51	28.50	28.70	42.20	24.70	21.10	19.00	28.20	21.60	21.30
52	28.50	28.50	41.60	25.20	21.20	19.60	28.20	21.50	22.00
53	28.50	28.50	41.00	24.90	21.20	20.10	28.20	22.20	22.60
54	28.60	28.40	40.50	25.30	21.30	20.40	28.20	23.00	22.90
55	28.50	28.40	39.70	25.20	21.50	20.70	28.20	23.40	23.20
56	28.60	28.50	39.20	24.20	21.60	21.10	28.20	23.80	23.50
57	28.50	28.40	38.60	25.10	21.60	21.50	28.20	24.00	23.70
58	28.50	28.40	38.00	25.10	21.70	21.60	28.20	24.20	23.80
59	28.50	28.30	37.40	24.40	21.80	22.00	28.30	24.50	24.20
60	28.60	28.40	36.90	25.00	22.00	22.30	28.30	24.80	24.30
61	28.60	28.30	36.40	25.00	22.10	22.40	28.20	24.80	24.40
62	28.60	28.30	35.90	24.50	22.20	22.60	28.20	25.00	24.60
63	28.60	28.40	35.50	24.70	22.30	22.90	28.20	25.10	24.80
64	28.60	28.30	35.00	24.20	22.50	23.00	28.20	25.30	24.90
65	28.50	28.20	34.40	24.40	22.40	23.20	28.20	25.40	25.00
66	28.40	28.20	34.00	24.70	22.40	23.30	28.10	25.40	25.10
67	28.50	28.30	33.80	24.70	22.70	23.50	28.30	25.70	25.30
68	28.50	28.30	33.30	24.30	22.80	23.70	28.20	25.70	25.40
69	28.50	28.20	32.90	24.50	22.80	23.80	28.20	25.80	25.50
70	28.50	28.20	32.60	25.00	22.90	24.00	28.20	25.90	25.60

ตาราง ก. 28 ข้อมูลสำหรับรูป 4.4

Time	วิธีระบายความร้อน		
	ท่อความร้อนแบบสั่นวงรอบร่วมกับน้ำหล่อเย็น	น้ำหล่อเย็น	ท่อความร้อนแบบสั่นวงรอบ
0	80.9	81.3	80.90
1	66.7	81.4	78.20
2	58.2	74.7	78.10
3	55.7	74.6	73.70
4	55.4	66.0	73.60
5	46.3	65.9	72.10
6	46.3	59.5	70.00
7	41.6	59.3	69.00
8	41.6	54.1	68.00
9	37.8	54.0	67.50
10	37.8	49.7	67.00
11	35.3	49.7	66.50
12	35.3	46.0	66.00
13	33.8	46.0	65.50
14	33.8	43.0	65.10
15	32.8	43.0	64.60
16	32.8	40.6	64.20
17	31.9	40.5	63.60
18	31.9	38.7	63.20
19	31.2	38.7	62.70
20	31.2	36.8	62.30
21	30.6	37.0	61.80
22	30.6	35.7	61.50
23	30.1	35.6	61.10
24	30.2	34.5	60.80
25	29.7	34.6	60.50
26		33.6	60.20
27		33.6	59.90
28		32.8	59.60
29		32.2	59.40
30		32.2	59.10
31		31.6	58.80
32		31.6	58.50
33		31.4	58.20
34		31.4	57.70
35		31.0	57.20
36		31.0	56.80
37		30.7	56.30
38		30.5	56.00
39		30.0	55.50
40		30.0	55.10
41			54.70
42			54.20
43			53.80
44			53.30
45			53.00
46			52.50
47			52.10
48			51.80
49			51.50
50			51.10
51			50.80
52			50.50
53			50.10
54			49.80
55			49.30
56			49.00
57			48.70
58			48.40
59			48.00
60			47.60
61			47.40
62			47.10
63			46.90
64			46.50
65			46.30
66			46.00
67			45.80
68			45.40
69			45.10
70			44.90
71			44.50
72			44.30
73			44.00
74			43.70
75			43.40
76			43.20
77			43.00
78			42.60
79			42.40
80			42.20
81			42.00
82			41.60
83			41.50
84			41.20
85			41.00
86			40.80
87			40.50
88			40.30
89			40.00
90			40.00
91			39.70
92			39.50
93			39.30
94			39.10
95			39.00
96			38.80
97			38.60
98			38.40
99			38.20
100			38.00
101			37.80
102			37.70
103			37.50
104			37.30
105			37.00
106			36.90
107			36.70
108			36.60
109			36.40
110			36.30
111			35.90
112			35.70
113			35.60
114			35.60
115			35.30
116			35.20
117			35.20
118			35.00
119			34.80
120			34.70
121			34.60
122			34.50
123			34.40
124			34.30
125			34.10
126			34.00
127			34.00
128			33.80
129			33.60
130			33.50
131			33.40
132			33.40
133			33.20
134			33.10
135			33.00
136			32.90
137			32.70
138			32.60
139			32.60
140			32.50
141			32.40
142			32.30
143			32.10
144			32.10

ตาราง ก. 29 ข้อมูลสำหรับรูป 4.5

Time	Tact อุณหภูมิเครื่องทำระเหย	Tw,evap_in อุณหภูมิน้ำเข้าเครื่องทำระเหย	Tw,evap_out อุณหภูมิน้ำออกเครื่องทำระเหย	Tevap อุณหภูมิผิวเครื่องทำระเหย
0	27.00	26.00	26.00	25.80
5	66.70	26.30	26.10	25.70
10	79.30	27.00	26.40	26.00
15	83.00	26.90	26.20	26.00
20	87.60	26.60	25.90	25.90
25	88.80	26.30	25.60	25.70
30	48.60	26.70	26.00	26.00
35	40.50	27.10	26.10	26.10
40	44.40	27.10	16.00	16.30
45	41.60	27.20	17.00	16.10
50	38.90	27.00	17.10	17.70
55	36.30	27.00	18.80	19.10
60	34.10	27.00	20.20	20.20
65	32.50	27.00	21.20	21.30
70	31.30	27.70	24.90	23.20
75	63.30	27.00	27.50	24.50
80	75.60	26.50	27.40	24.50
85	77.80	26.30	27.40	24.90
90	81.30	26.30	27.40	24.90
95	85.90	26.10	27.40	24.90
100	89.50	26.10	27.40	25.00
105	76.40	26.30	27.50	25.00
110	48.00	27.40	27.50	26.40
115	41.00	27.40	27.50	25.90
120	42.70	27.50	27.50	20.30
125	39.60	27.40	27.50	21.20
130	36.70	27.60	27.50	22.50
135	34.40	27.40	27.50	23.40
140	32.50	27.60	27.50	24.30
145	31.10	27.60	27.50	25.00
150	30.20	27.50	27.50	25.40
155	50.50	27.40	26.90	26.80
160	69.90	27.00	26.60	26.60
165	80.20	26.80	26.50	26.50
170	81.80	26.80	26.80	26.60
175	86.60	26.80	26.70	26.50
180	89.50	26.60	26.50	26.50
185	90.60	26.70	26.60	26.40
190	54.50	28.10	27.30	27.00
195	43.60	28.30	27.60	27.30
200	41.90	28.20	26.30	24.50
205	41.60	28.20	21.50	22.00
210	38.60	28.20	24.00	23.70
215	35.90	28.20	25.00	24.60
220	33.80	28.30	25.70	25.30

ภาคผนวก ข

ข้อมูลสำหรับการคำนวณ

ข.1 คำนวณภาระการทำความเย็น

การคำนวณหาขนาดเครื่องดูดซับ ปริมาณถ่านกัมมันต์ที่ต้องใช้ รวมถึงปริมาณเมาทนอลในระบบ สามารถคำนวณได้จากภาระทำความเย็นที่ต้องการ โดยกำหนดให้ระบบทดสอบมีภาระการทำความเย็น 100 W และช่วงการเกิดปฏิกิริยาดูดซับสาร 30 นาที

ปริมาณเมทานอลที่ต้องใช้ในระบบ คำนวณได้จาก

$$Q_{cooling} = m_{met}L_{met}$$

โดย $Q_{cooling}$ = อัตราการถ่ายเทความร้อนที่เครื่องทำระเหย(kJ)

m_{met} = มวลเมทานอล (kg)

L_{met} = ค่าความร้อนแฝงของการกลายเป็นไอของเมทานอล 1,120 kJ/kg

ดังนั้นต้องใช้เมทานอล

$$m_{met} = \frac{Q_{cooling}}{L_{met}}$$

$$= \frac{100W \times 1{,}800\ s}{1{,}120\ {}^{kJ}/_{kg} \times 1{,}000} \times \frac{1{,}200\ kJ}{100\ {}^{J}/_{s} \times 1{,}800\ s.kg}$$

$$= 0.16$$

เมทานอล 1 kg = 1.25 L_{met}

0.16 kg = 0.16 x 1.25

= 0.2 L (200 mL)

เมื่อ เมทานอล 400 mL ใช้ถ่านกัมมันต์ในการดูดซับ 1 kg

ดังนั้น เมทานอล 200 mL ต้องใช้ถ่านกัมมันต์ในการดูดซับ 500 kg

ปริมาตรเครื่องดูดซับ $V_{adsorber} = \frac{m_{ac}}{\rho_{ac}}$

$$= \frac{0.5\ kg}{490\ {}^{kg}/_{m^3}}$$

$$= 1.02 \times 10^{-3}\ m^3$$

ดังนั้นปริมาตรภายในเครื่องดูดซับไม่รวมทางเดินสารและท่อความร้อนแบบสั่นวงรอบ คือ $1 \times 10^{-3} m^3$

ข.2 สมดุลพลังงาน

ในการทดสอบระบบทำความเย็นแบบดูดซับ 1 รอบวัฏจักร สามารถแบ่งย่อยได้ 4 ช่วงการทำงานดังได้กล่าวไว้ในบทที่ 2 ซึ่งในแต่ละช่วงสามารถคำนวณหาสัดส่วนการกระจายพลังงานภายในเครื่องดูดซับได้ โดยจะยกตัวอย่างการคำนวณในช่วงให้ความร้อนและคายสารดูดซับ (Heating & Desorption) ที่อุณหภูมิเริ่มต้น (T_1) 70°C และสิ้นสุด (T_2) 80°C

เมื่อความร้อนถูกถ่ายเข้าสู่เครื่องดูดซับ ความร้อนจะกระจายให้แก่ ถ่านกัมมันต์, เมทานอล, ท่อทองแดงที่ใช้สร้างเครื่องดูดซับ, ท่อความร้อน และเมทานอลภายในท่อความร้อน นอกจากนี้ยังมีพลังงานความร้อนที่ต้องใช้ในการสลายพันธะระหว่างเมทานอลกับถ่านกัมมันต์ (Q_{des})

1. ความร้อนสัมผัสที่ทำให้ถ่านกัมมันต์เพิ่มอุณหภูมิจาก T_1 เป็น T_2

$$\begin{aligned} Q_{ac} &= m_{ac}C_{p,ac}(T_2 - T_1) \\ &= (0.5)(805)(80 - 70) \\ &= 4{,}025 \text{ J} \end{aligned}$$

2. ความร้อนสัมผัสที่ทำให้เมทานอลเพิ่มอุณหภูมิจาก T_1 เป็น T_2

$$\begin{aligned} Q_{met} &= m_{met}C_{p,met}(T_2 - T_1) \\ &= (0.16)(750)(80 - 70) \\ &= 1{,}200 \text{ J} \end{aligned}$$

3. ความร้อนสัมผัสที่ทำให้ทองแดงเพิ่มอุณหภูมิจาก T_1 เป็น T_2

$$\begin{aligned} Q_{cop} &= m_{cop}C_{p,cop}(T_2 - T_1) \\ &= (2.04)(385)(80 - 70) \\ &= 7{,}854 \text{ J} \end{aligned}$$

4. ความร้อนสัมผัสที่ทำให้วัสดุทองแดงที่ใช้สร้างท่อความร้อนแบบสั่นวงรอบเพิ่มอุณหภูมิจาก T_1 เป็น T_2

$$\begin{aligned} Q_{cop,OHP} &= m_{cop,OHP}C_{p,cop}(T_2 - T_1) \\ &= (0.082)(385)(80 - 70) \\ &= 315.7 \text{ J} \end{aligned}$$

5. ความร้อนสัมผัสที่ทำให้เมทานอลที่เติมภายในท่อความร้อนเพิ่มอุณหภูมิจาก T_1 เป็น T_2

$$\begin{aligned} Q_{met,OHP} &= m_{met,OHP} C_{p,met} (T_2 - T_1) \\ &= (0.15)(750)(80 - 70) \\ &= 1{,}125 \text{ J} \end{aligned}$$

6. พลังงานความร้อนที่ใช้ในกระบวนการคายสารดูดซับ

$$\begin{aligned} H_{des} &= \frac{R \ln\left(\frac{P_2}{P_1}\right)}{\left(\frac{1}{T_0} - \frac{1}{T_1}\right)} \\ &= \frac{\left[\left(\frac{8.314}{32.04}\right) \times \ln\left(\frac{36.33}{8}\right)\right]}{\left[\frac{1}{299} - \frac{1}{343.15}\right]} \\ &= 877.29 \ \frac{\text{kJ}}{\text{kg}} \end{aligned}$$

$$\begin{aligned} Q_{des} &= m_{ac} H_{des} (x_{max} - x_{min}) \\ &= (0.5)(877.29)(0.1296 - 0.0504) \\ &= 34.74 \text{ kJ} \end{aligned}$$

ดังนั้น พลังงานความร้อนทั้งหมดที่เครื่องดูดซับต้องการ เมื่อไม่คิดความร้อนสูญเสีย คือ

$$\begin{aligned} 4{,}025 + 1{,}200 + 315.7 + 1{,}125 + 34{,}740 &= 41{,}405 \text{ J} \\ &= 41 \text{ kJ} \end{aligned}$$

ข.3 การคำนวณประสิทธิภาพของระบบ (COP, SCP, VCP)

จากการทดสอบ กรณีอุณหภูมิถ่านกัมมันต์ในเครื่องดูดซับ เป็น 80°C และอุณหภูมิน้ำในเครื่องควบแน่นเป็น 10°C

พลังงานความร้อนที่ให้แก่เครื่องดูดซับ(Q_H) มีค่า 203.386 kJ

พลังงานที่ถ่ายเทในส่วนทำระเหย(Q_E) มีค่า 73.391 kJ

(1) สัมประสิทธิ์สมรรถนะของระบบดูดซับ (COP)

$$\begin{aligned} COP &= \frac{Q_E}{Q_H} \\ &= \frac{73.391}{203.386} \\ &= 0.36 \end{aligned}$$

(2) ค่าอัตราส่วนการทำความเย็นจำเพาะ (SCP)

$$SCP = \frac{\dot{Q}_E}{m_{ac}}$$
$$= \frac{85.86}{0.5}$$
$$= 171.72 \frac{W}{kg}$$

(3) ค่าปริมาตรต่อกำลังความเย็นที่ได้ (VCP)

$$VCP = \frac{V_{ad}}{\dot{Q}_E}$$
$$= \frac{0.001521}{85.86}$$
$$= 1.77 \times 10^{-5} \frac{m^3}{W}$$

ข.4 การคำนวณท่อความร้อนแบบสั่นวงรอบ

$$\dot{Q} = 0.54\big(\exp(\beta)\big)^{0.48} Ka^{0.47} Pr_{liq}^{0.27} Ja^{1.43} N^{-0.27}$$

เมื่อ $Ka = \frac{\rho l(\Delta P)liq\, D_i^2}{\mu_{liq} L_{eff}}$ และ $L_{eff} = 0.5(L_e + L_c) + L_a$

$$= 0.5(1 + 0.5)$$
$$= 0.75 \text{ m.}$$

$$Ka = \frac{787(20)(0.001)^2}{0.544\times10^{-3}\times0.75}$$
$$= 38578.43$$

$$Pr_{liq} = \frac{C_{p,liq}\times\mu_{liq}}{k_{liq}}$$
$$= \frac{750\times0.544\times10^{-3}}{0.2}$$
$$= 2.04$$

$$Ja = \frac{h_{fg}}{C_{p,liq}(\Delta T)^{e-c}}$$
$$= \frac{221.035}{750\times\left(\frac{333+300}{2}\right)}$$
$$= 0.94$$

ดังนั้น $\dot{Q} = 0.54\big(\exp(\pi)\big)^{0.48}(38578.43)^{0.47}(2.04)^{0.27}(0.94)^{1.43}(30)^{-0.27}$

$$= 2.439 \times 143.08 \times 1.212 \times 0.908 \times 0.399$$
$$= 153.23 \text{ W}$$

ภาคผนวก ค

ตารางแสดงคุณสมบัติเมทานอล

ตาราง ค-1 คุณสมบัติทางกายภาพของเมทานอล (Physical properties of pure methanol)

(ยิ่งลักษณ์ ภูมิสง่า,2549)

Properties of methanol

Physical properties of pure methanol

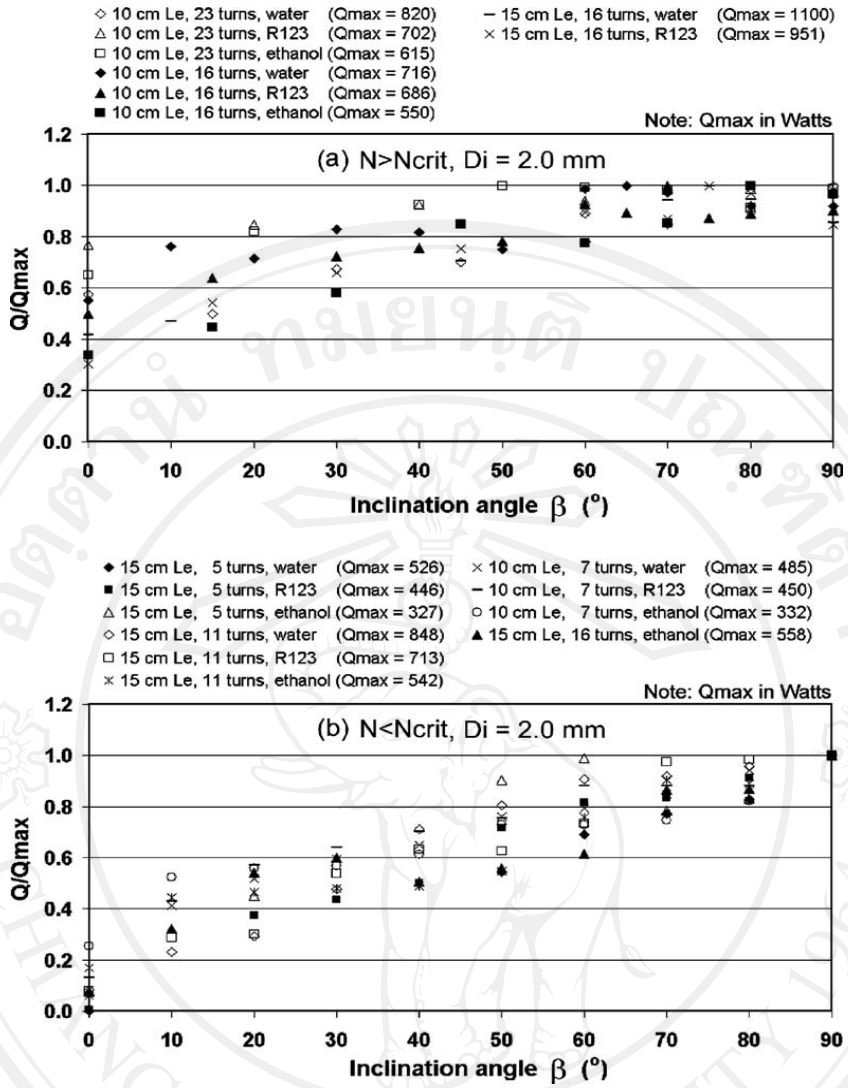
Molecular weight	32.04 g mol^{-1}
Critical Temperature	512.5 K
	(239 C ; 463 °F)
Critical Pressure	8.084 MPa
	(78.5 atm)
Critical Density	0.2715 g cm^{-3}
Critical Compressibility	0.224
Factor	
Specific Gravity	
Liquid	
(25/4 C)	0.7866
(20/4 C)	0.7915
(15/4 C)	0.7960
Vapour	1.11
Vapour Pressure	
20 °C (68°F F)	12.8 kPa
	(1.856 psia)
	(96 mm Hg)
25 °C (77°F)	16.96 kPa
Latent Heat of	(2.459 psia)
Vapourization	(127.2 mm Hg)
25°C (77°F)	

	37.43 kJ mol^{-1}
64.6°C (148.3°F)	(279.0 cal g^{-1})
	35.21 kJ mol^{-1}
Heat Capacity at	(262.5 cal g^{-1})
Constant Pressure	
25 °C (77°F) (101.3kPa)	
Liquid	
	81.08 J mol^{-1} K^{-1}
	(0.604 cal g^{-1} K^{-1})
Vapour	(0.604Btu $lb^{-1}F^{-1}$)
	44.06 J mol^{-1} K^{-1}
	(0.328 cal g^{-1} K^{-1})
	(0.328Btu $lb^{-1}F^{-1}$)
Coefficient of Cubic	
Thermal Expansion	
20 °C	
40 °C	0.00149 per °C
Boiling Point	0.00159 per °C
760 mm Hg (101.3 kPa)	
	64.6 °C
Freezing Point	(148.3°F)
	-97.6 °C
Reid Vapour Pressure	

ตาราง ค-1 คุณสมบัติทางกายภาพของเมทานอล (Physical properties of pure methanol) (ต่อ)

Flash Point	(-143.7°F)
Closed vessel	32 kPa
(TCC method)	
Open vessel (TOC method)	12 °C (54 °F)
Auto Ignition	15.6 °C (60.1°F)
	470 °C(878 °F)
Temperature Viscosiy	1.258 mPa.s
Liquid	0.793 mPa.s
-25°C(-13°F)	0.544 mPa.s
0°C(32°F)	
25°C(77°F)	9.68 uPa.s
Vapour	13.2 uPa.s
25°C (77°F)	
127°C(261°F)	22.6 mN m^{-1}
Surface Tension	22.07 mN m^{-1}
20°C (68°F)	
25°C (77°F)	1.33066
Refractive Index	1.32840
15°C (59°F)	1.32652
20°C (68°F)	
25°C (77°F)	
Thermal Conductivity	207 mW m^{-1} K^{-1}
Liquid	
0 °C (32°F)	

25°C (77°F)	200 mW m^{-1} K^{-1}
Vapour	
100°C (212°F)	14.07 mW $m^{-1}K^{-1}$
127°C (261°F)	26.2 mW m^{-1} K^{-1}
Heat of Combustion	
Higher heating value	726.1 $kJmol^{-1}$
(HHV)	
(25°C, 101.325kPa)	(22.7 kJ g^{-1})
Lower heating value	638.1 $kJmol^{-1}$
(LHV)	
(25°C, 101.325kPa)	(19.9 kJ g^{-1})
Flammable Limits	Lower 6.0(v/v)%
(in air)	Upper
	36.5(v/v)%



รูปที่ ค.1 คุณสมบัติทางความร้อนของม่อความร้อนแบบสั่นวงรอบ ที่ D_i = 2 mm.

(Piyanun at al., 2003)

ภาคผนวก ง

เอกสารที่ได้รับการเผยแพร่

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Performance Analysis of Combined Adsorber – Thermosyphon System for Cooling

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ABSTRACT. Adsorption cooling system is an alternative cold production system to the vapor compression cycle. Its working pairs are harmless to environment, and not cause green house effect. The popular adsorbent/adsorbate working pair is activated carbon (AC) and methanol [1]. This research aims to test the performance of combined adsorber and thermosyphon system for cooling purpose, using AC/methanol pair. The research methodology composed of design, fabrication of major components, assembly, installing, testing and analysis of single-effect adsorption cooling system. There were two major components; adsorber equipped with thermosyphon and a condenser coupled to an evaporator. Thermosyphon enhanced heat removal during adsorption period. During desorption period, high temperature heat source was supplied to the adsorber by hot water circulation. Various parameters were studied; i.e., cycle times, hot water temperature and cooling water temperature. If the desorption temperature was 90 ^{o}C, it was possible to achieve evaporation temperature about 15 °C and the coefficient of performance (COP) approximately 0.45

1. INTRODUCTION

The past decade has seen the rapid increasing of energy consumption in Thailand. Many attempts have been done to find out the efficient energy conservation technology. An adsorption system is one of the new technologies which have been adapted for reducing the energy consumption of a conventional air-conditioning system. Adsorption systems do not have problems on coolant pollution, crystallization, and fractionation such as absorption systems. It has less vibration, simple control, environmentally benign and lower operation costs. The system principally consists of three main parts, an adsorber, a condenser and an evaporator which shown in Fig. 1. It should be noticed that this system is filled with a working pair, for example, activated carbon (AC) in an adsorber and methanol in an evaporator or a condenser.

The working process can be divided into 2 steps. For the first step (adsorption process), the liquid methanol in an evaporator tank is vaporized by applied heat energy to an evaporator. Then, the vapor flows upward and adsorbs in an activated carbon till the saturated condition reaches. For the second step (desorption process), the adsorber is heated from the external heat source. Therefore, the methanol in the activated carbon is released and flows downward to a condenser where the condensation of methanol is taken place. Note that, normally the lower container in Fig.1 is acted as both an evaporator and a condenser.

Normally, the waste heat is applied to the adsorber while the fresh air is flown through an evaporator to produce cool air for air-conditioning purposes.

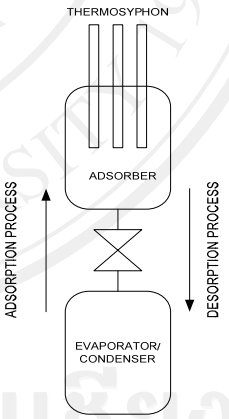

Fig.1 An adsorption refrigeration system

From the previous literatures [2-4], it is found that during the adsorption process, an activated carbon adsorbs methanol vapor and generates heat. When the temperature of activated carbon increases, it destroys the adsorption performance. To overcome this problem, in this work, a thermosyphon heat pipe (shown in Fig. 1) is inserted into an adsorber for releasing the generated heat. Moreover, during the desorption process; the hot water is circulated inside an adsorber and the temperature of activated carbon increases to approximately 80 °C. Therefore, after this process, a thermosyphon is used for cool down the activated carbon.

A thermosyphon heat pipe, one type of heat exchanger, has been used in many industrial processes because of its high advantages such as high thermal conductivity, low cost and easy to be constructed [5-6]. A thermosyphon heat pipe shown in Fig. 2 can be divided into three parts, an evaporator, an adiabatic and a condenser. When heat is added to an evaporator section, the working fluid inside the heat pipe is boiled and vaporizes. The vapor carries heat from the heat source, flows to a condenser section and rejects heat to the heat sink. The working fluid condensate turns back to an evaporator section by gravity.

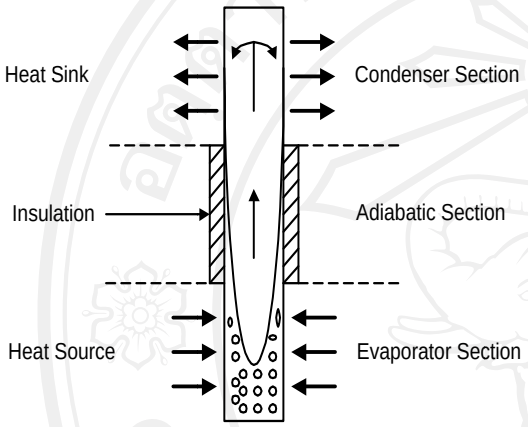

Fig. 2 Thermosyphon heat pipe

The performance of adsorption system combined with a thermosyphon heat pipe has been investigated in this work. The result aims to serve an air conditioning system to reduce the energy consumption of conventional unit.

2. EXPERIMENTAL SETUP

Fig. 3 shows the picture of research apparatus. This system consisted of two main parts, an adsorber combined with a thermosyphon and a condenser/ evaporator. The details of each component are as follows:

An adsorber consists of two concentric copper pipes which the inner pipe has 5 cm diameter and 100 cm length. Internal tube was packed with AC and installed three thermosyphon. The outer pipe as water jacket, where hot and cold heat transfer fluid circulated through, has 7.5 cm diameter.

A condenser/evaporator made from 7.5 cm diameter copper pipe with 22 cm length. The inside of the tube consists of 0.64 cm spiral coil. Note that, the water is flown through this coil for absorbing and adding heat from methanol during condensation and evaporation processes.

Temperature are measured and recorded at various n the system using thermocouple type-K and data logger; adsorber, evaporator/condenser, inlet and outlet of cooling and heating fluid.

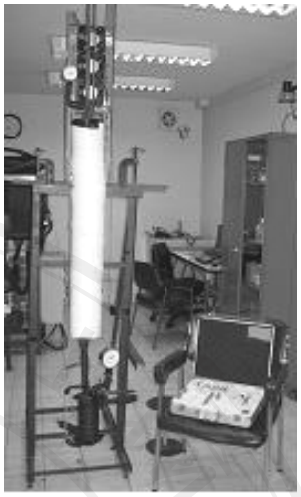

Fig. 3 Experimental apparatus

Item	Value
Mass of activated carbon	500 g
Mass of methanol	400 mL
Mass flow rate of water at adsorber	0.05 kg/s
Mass flow rate of water at evaporator/ condenser	0.008 kg/s
Inlet temperature of water at adsorber	74 – 94 °C
Inlet temperature of water at evaporator/ condenser	27 °C
Testing duration	1.30 hour

Table 1 Testing conditions of this research

Table 1 shows the detail of testing conditions. Notice that, the result of this experiment is used for evaluating the performance of this system. The performance parameters used in this work is coefficient of performance (COP) [7].

COP for cold production in Eq. (1) can be calculated as the ratio of the extracted heat from the evaporator to the supplied heat to the adsorber during desorption period. This parameter can be calculated from

$$COP = \frac{\dot{Q}_{cooling}}{\dot{Q}_{heating}} = \frac{\dot{m}_{w,evap} c_p \Delta T_{w,evap}}{\dot{m}_{w,heating} c_p \Delta T_{w,heating}} \quad (1)$$

Amount of heat supply is calculated based on sensible heat of hot water. The latent heat of evaporated methanol evaporation is also determined from sensible heat of circulated water at evaporator.

3. RESULTS

The results of this experiment are shown in Figs. 4-8. It should be noted that the important phenomenon normally observed for the adsorption system is the temperature variation of adsorber as depicted in Figs. 5-7. The discussion of each figure is as follow;

Since, in the desorption process, the activated carbon is heated and increasing in its temperature. Before starting the new cycle, the activated carbon has to

cool down. In this work, three methods, for cooling down is investigated which are using cooling water, thermosyphon heat pipe and cooling water combined with thermosyphon heat pipe. The comparison result among these methods is shown in Fig. 4. It is found that the cool down time in case of using cooling water combined with thermosyphon is the shortest while that of single thermosyphon had the longest cool down time. Cooling water is supplied at ambient condition by maintaining at 27 ^{o}C. When using cooling water combined with thermosyphon, the temperature of activated carbon is decreased from 80 °C to 30 °C within 30 mins; therefore, cycle time could be curtailed.

Figs. 5-7 show the adsorption and desorption process on time-temperature diagrams. Firstly, the system starts with the desorption process, the methanol is removed from the activated carbon by using hot water and it brings to get the increasing of temperature of activated carbon. The vapor of methanol flows downward and condenses in a condenser. After that the activated carbon is cooled down by using cooling water and a thermosyphon.

During the adsorption process, the water is flown into an evaporator and the methanol is vaporized. Then the vapor of methanol flows upward and adsorbed by the activated carbon. In this stage, the result shows the increasing of activated carbon temperature.

In this work, the adsorber temperature is varied between 70 °C and 90 °C and the results are shown in Figs. 5-7 respectively. Although the increasing of adsorber temperature brings to get higher process timing. However, more efficient repelling is obtained. The results show that when the temperature of activated carbon is 70°C, the temperature of evaporator is around 20 °C. While that of 80 °C and 90 °C adsorption temperatures get 18 °C and 15 °C evaporator temperatures respectively. This result comes from the increasing of methanol return to a condenser/ evaporator with the increasing of adsorber temperature. Moreover, from Fig. 8, it is found that the COP of this system increases with the temperature of adsorber too. At 70 °C temperature of adsorber, the COP of system is around 0.3 while those of 80 °C and 90 °C, the COP of system are raised to 0.38 and 0.45 respectively.

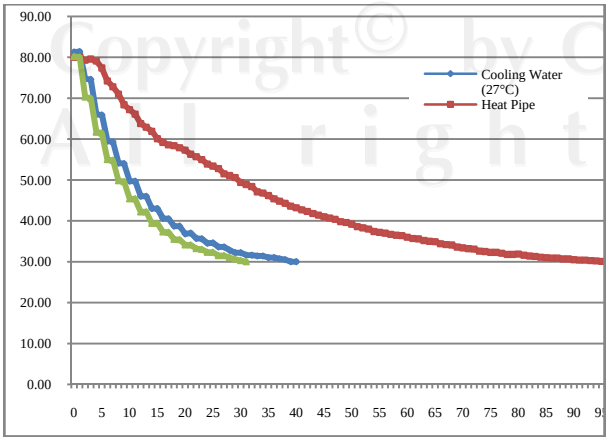

Fig. 4 Effect of cooling method on cool down time.

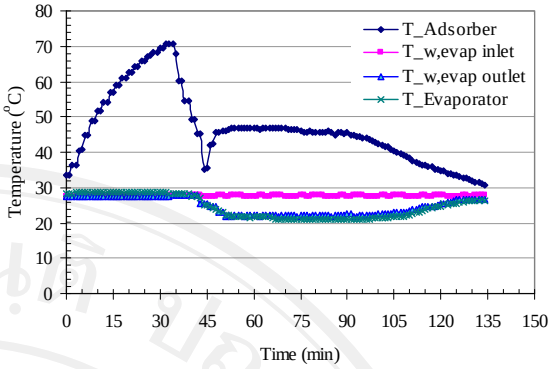

Fig. 5 Adsorption/ desorption process in case of adsorber temperature = 70 °C.

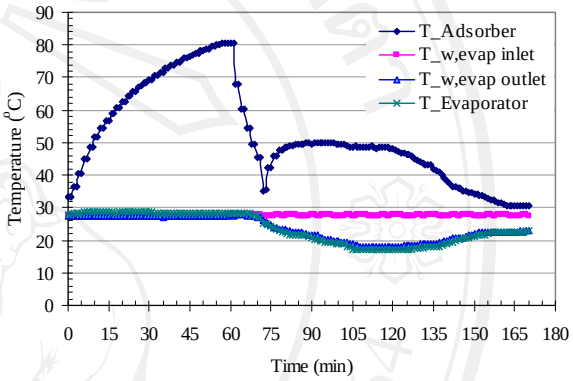

Fig. 6 Adsorption/ desorption process in case of adsorber temperature = 80 °C.

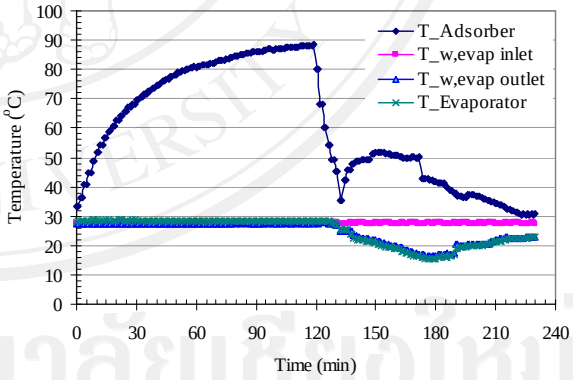

Fig. 7 Adsorption/ desorption process in case of adsorber temperature = 90 °C.

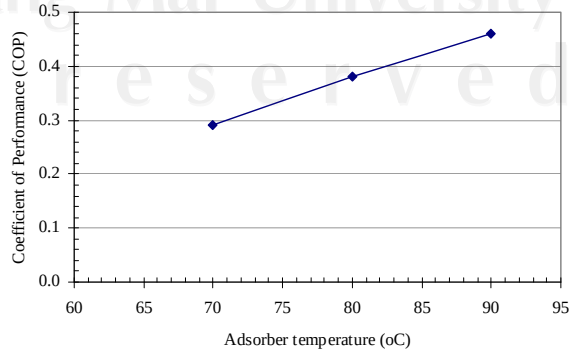

Fig.8 Coefficient of performance of system

4. CONCLUSION

The adsorption system using activated carbon-methanol pair has high potential on cold production. Thermosyphon heat pipe enhances heat transfer as well as reducing cycle time. In adsorption period, using heat pipe can reduce the period time about 10 minutes compare with using cooling water only.

In desorption period, the COP depends on the initial temperature of adsorber. The experimental result shows that the higher temperature gets the higher COPs, which are comparable to those in literature.

The maximum COP is 0.45 at 90°C heat source and the lowest evaporator temperature is 15°C.

5. NOMENCLATURE

c_p	= Specific heat, [kJ/kg K]
m	= Mass, [kg]
$\dot{m}$	= Mass flow rate, [kg/s]
$\dot{Q}$	= Heat flow rate, [kJ/kg s]
T	= Temperature, [C]
V	= Total volume, [m^3]

Subscript

Cooling	= cooling process
Heating	= heating process
Evap	= evaporation
W	= water

6. ACKNOWLEDGEMENTS

The author would like to acknowledge the Graduate School and Faculty of Engineering, Chiang Mai University (CMU), and Thailand Research Fund (TRF), for their financial support.

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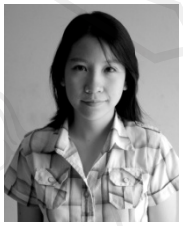

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