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ภาคผนวก

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ภาคผนวก ก

ตัวอย่างการคำนวณ

ข้อมูลจากการทดลอง

Batch No. D03202

ของเหลวใช้งาน : น้ำกลั่น

ปริมาณของไหลใช้งาน 55 % ของพื้นที่รับความร้อนของด้านการระเหย

มิติของเครื่องแลกเปลี่ยนความร้อน :

ด้านการระเหย 0.40 ม. x 0.6 ม. = 0.24 ม²

ด้านการควบแน่น 0.40 ม. x 0.6 ม. = 0.24 ม²

DFH	=	40	มม.	DPC	=	39	มม.
THI	=	100.30	°ซ	TCI	=	36.40	°ซ
THO	=	82.10	°ซ	TCO	=	56.60	°ซ
DTH1	=	10.13	มิลลิโวลต์	DTC1	=	9.48	มิลลิโวลต์
DTH2	=	10.52	มิลลิโวลต์	DTC2	=	9.53	มิลลิโวลต์
DTH3	=	10.33	มิลลิโวลต์	DTC3	=	9.37	มิลลิโวลต์

1. หาอัตราการถ่ายเทความร้อนรวม

1.1 จากความเร็วของลม

จากค่าของ DPH และ DPC นำมาอ่านค่าของ V_h และ V_c ได้

จากรูปที่ 3.25 และ 3.26 จะได้ว่า

$$V_h = 3.5 \text{ เมตร/วินาที}$$

$$V_c = 4.6 \text{ เมตร/วินาที}$$

หรืออาจจะคำนวณได้จาก

$$V_h = \frac{-13.8 + \sqrt{(13.8)^2 - 4 \times 1.11 \times (-21.3 - DPH)}}{2 \times (1.11)}$$

$$= \frac{-13.8 + \sqrt{190.44 - 4.44(-21.3 - (40))}}{2.22}$$

$$= 3.47 = 3.5 \text{ เมตร/วินาที}$$

$$V_c = \frac{1.49 + \sqrt{(-1.49)^2 - 4 \times 1.8 \times (6.77 - (39))}}{2 \times (1.8)}$$

$$= 4.6 \text{ เมตร/วินาที}$$

1.2 หาคความแตกต่างของอุณหภูมิ

$$\begin{aligned} DTH &= (DTH1 + DTH2 + DTH3) / 3 \\ &= (10.13 + 10.52 + 10.33) / 3 \\ &= 10.33 \text{ มิลลิโวลต์} \\ DTC &= (DTC1 + DTC2 + DTC3) / 3 \\ &= (9.48 + 9.53 + 9.37) / 3 \\ &= 9.46 \text{ มิลลิโวลต์} \end{aligned}$$

นำค่า DTH และ DTC อ่านค่าของ ΔT_H และ ΔT_C ได้
จากกราฟรูปที่ 3.20 และ 3.21
หรืออาจคำนวณได้จาก

$$\begin{aligned} \Delta T_H &= DTH / 0.408 = 10.33 / 0.408 = 25.32 \text{ } ^\circ\text{C} \\ \Delta T_C &= DTC / 0.476 = 9.46 / 0.476 = 19.87 \text{ } ^\circ\text{C} \end{aligned}$$

1.3 การคำนวณหาตัวเลขเรย์โนลด์ (Reynold Number)

$$Re = \rho V D_n / \mu$$

1.3.1 ตัวเลขเรย์โนลด์ด้านการระเหย (Re_n)

$$\begin{aligned} \rho_n &= 0.9793 \text{ กก./ม}^3 \\ V_n &= 3.5 \text{ เมตร/วินาที} \\ \mu_n &= 2.1240 \times 10^{-5} \text{ กิโลกรัม/เมตร-วินาที} \end{aligned}$$

$$De = (4 \times 0.24) / (2 \times (0.4 + 0.6)) = 0.96 / 2$$

$$= 0.48 \quad \text{เมตร}$$

$$Re_h = (0.9793 \times 3.5 \times 0.48) / 2.1240 \times 10^{-5}$$

$$= 7.6586 \times 10^4$$

1.3.2 ตัวเลขเรย์โนลด์ด้านการควบแน่น (Re_c)

$$\rho_c = 1.1057 \quad \text{กก./ม}^3$$

$$V_c = 4.6 \quad \text{เมตร/วินาที}$$

$$\mu_c = 1.9390 \times 10^{-5} \quad \text{กิโลกรัม/เมตร-วินาที}$$

$$De = 0.48 \quad \text{เมตร}$$

$$Re_c = (1.1057 \times 4.6 \times 0.48) / 1.9390 \times 10^{-5}$$

$$= 1.2643 \times 10^5$$

1.4 หาคณสมบัติต่างๆของของไหล

$$T_h = (T_{HI} - \Delta T_h) / 2 = 100.30 - 25.32 / 2$$

$$= 87.64 \quad ^\circ\text{ซ}$$

$$T_c = (T_{CI} + \Delta T_c) / 2 = 34.80 + 19.875 / 2$$

$$= 44.74 \quad ^\circ\text{ซ}$$

1.4.1 อัตราการถ่ายเทความร้อนด้านการระเหย

คุณสมบัติของอากาศที่ 88 $^\circ\text{ซ}$

$$\rho = 0.9793 \quad \text{กก/ม}^3$$

$$C_p = 1008.9 \quad \text{จูล/กก-}^\circ\text{ซ}$$

$$\mu = 2.124 \times 10^{-5} \quad \text{กิโลกรัม/เมตร-วินาที}$$

$$\begin{aligned}
 Q_h &= (\rho_h C_{ph} V_h) (0.24) (\Delta T_h) \\
 &= 0.9793 \times 1008.9 \times 3.5 \times 0.24 \times 25.32 \\
 &= 20769 \quad \text{วัตต์}
 \end{aligned}$$

1.4.2 หาอัตราการถ่ายเทความร้อนด้านการควบแน่น

คุณสมบัติของอากาศที่ 45 °ซ

$$\rho = 1.1057 \quad \text{กก/ม}^3$$

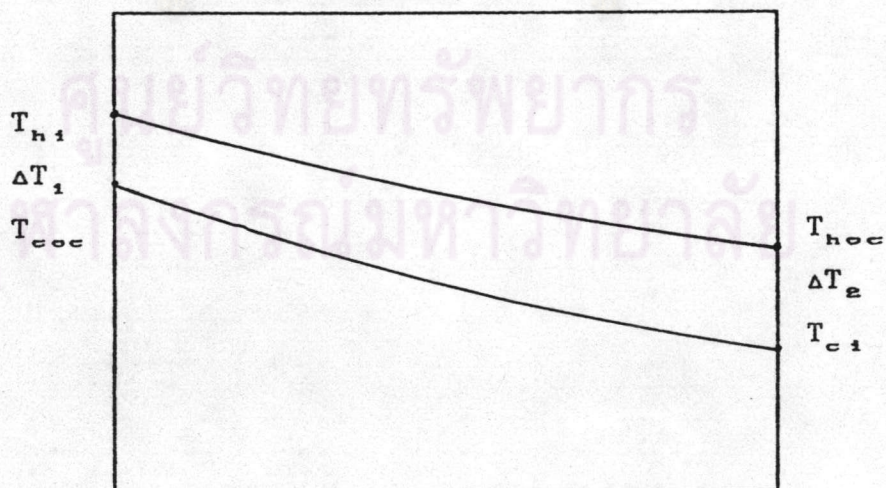
$$C_p = 1005.8 \quad \text{จูล/กก-°ซ}$$

$$\mu = 1.9390 \times 10^{-5} \quad \text{กิโลกรัม/เมตร-วินาที}$$

$$\begin{aligned}
 Q_c &= (\rho_c C_{pc} V_c) (0.24) (\Delta T_c) \\
 &= 1.1057 \times 1005.8 \times 4.6 \times 0.24 \times 19.87 \\
 &= 26069 \quad \text{วัตต์}
 \end{aligned}$$

$$\begin{aligned}
 Q_{av} &= (Q_h + Q_c) / 2 = (20769 + 24502) / 2 \\
 &= 22635 \quad \text{วัตต์}
 \end{aligned}$$

2. คำนวณหาความแตกต่างอุณหภูมิเชิงลอการิทึม



จากภาพ กรณีสองของการไหลสวนทาง

$$(\Delta T)_{\ln} = \frac{\Delta T_1 - \Delta T_2}{\ln(\Delta T_1 / \Delta T_2)}$$

ในที่นี้

$$\Delta T_1 = T_{h1} - T_{c0c}$$

$$\Delta T_2 = T_{hoc} - T_{c1}$$

$$T_{h1} = 100.3 \text{ } ^\circ\text{ซ}$$

$$T_{c1} = 36.4 \text{ } ^\circ\text{ซ}$$

$$T_{c0c} = T_{c1} + \Delta T_c = 36.4 + 19.87$$

$$= 56.27 \text{ } ^\circ\text{ซ}$$

$$T_{hoc} = T_{h1} - \Delta T_h = 100.3 - 25.32$$

$$= 74.98 \text{ } ^\circ\text{ซ}$$

ดังนั้น

$$\Delta T_1 = 100.3 - 56.27 = 44.03 \text{ } ^\circ\text{ซ}$$

$$\Delta T_2 = 74.98 - 36.40 = 38.59 \text{ } ^\circ\text{ซ}$$

$$(\Delta T)_{\ln} = \frac{44.03 - 38.59}{\ln(44.03/38.59)} = 41.25 \text{ } ^\circ\text{ซ}$$

ในกรณีที่ $\Delta T_1 / \Delta T_2 = 1$ จะคำนวณ $(\Delta T)_{\ln}$ โดย

$$(\Delta T)_{\ln} = (\Delta T_1 + \Delta T_2) / 2$$

3. การคำนวณหาสัมประสิทธิ์การถ่ายเทความร้อน

$$Q = UA(\Delta T)_{\ln}$$

โดยที่ $Q = Q_{av} = 22635$ วัตต์

$$(\Delta T)_{\ln} = 41.25 \text{ } ^\circ\text{ซ}$$

$$22635 = UA(41.25)$$

$$UA = 22635 / 41.25$$

$$= 548.72 \text{ วัตต์/องศาเซลเซียส}$$

4. การคำนวณหาค่า NTU และ Effectiveness

4.1 การคำนวณหาค่า NTU

$$NTU = UA/C_{min}$$

ในที่นี้

$$UA = 548.72 \quad \text{วัตต์/องศาเซลเซียส}$$

$$C_h = (\rho_h C_{ph} V_h)(0.24)$$

$$= 0.9793 \times 1008.9 \times 3.5 \times 0.24$$

$$= 829.9 \quad \text{วัตต์/องศาเซลเซียส}$$

$$C_c = (\rho_c C_{pc} V_c)(0.24)$$

$$= 1.1057 \times 1005.8 \times 4.6 \times 0.24$$

$$= 1227.8 \quad \text{วัตต์/องศาเซลเซียส}$$

จะได้

$$C_{min} = 829.9 \quad \text{วัตต์/องศาเซลเซียส}$$

$$NTU = 548.72/829.9 = 0.67$$

4.2 คำนวณหาค่า Effectiveness

$$E_h = C_h(T_{hi} - T_{hoc})/C_{min}(T_{hi} - T_{ci})$$

$$= 829.9(100.3 - 74.98)/829.9(100.3 - 36.40)$$

$$= 0.39$$

$$E_c = C_c(T_{ci} - T_{coc})/C_{min}(T_{hi} - T_{ci})$$

$$= 1227.8(56.27 - 36.40)/829.9(100.3 - 36.40)$$

$$= 0.46$$

$$E = \frac{1}{\frac{1}{E_{\min}} + \frac{C_r}{E_{\max}}}$$

โดยที่

$$C_r = \frac{C_{\min}}{C_{\max}} = \frac{829.9}{1227.8} = 0.68$$

$$E_{\min} = 0.39$$

$$E_{\max} = 0.46$$

$$E = \frac{1}{\frac{1}{0.39} + \frac{0.68}{0.46}}$$

$$E = 0.24$$

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ภาคผนวก ข

ข้อมูลการทดลอง

EXPERIMENTAL DATA

DATA FILES : D02131 DPH = 29 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	61.00	60.50	52.20	2.95	2.93	2.92	34.80	46.40	5.64	5.64	5.64
2	71.00	69.60	57.80	4.89	4.82	4.90	33.80	50.70	7.63	7.61	7.58
3	81.00	79.40	63.60	6.04	6.62	6.70	33.50	55.50	10.10	10.11	10.06
4	91.00	90.00	70.50	8.14	8.32	7.94	33.80	61.30	12.30	12.41	12.54
5	101.00	99.70	76.20	9.42	9.41	9.48	33.90	66.50	14.95	15.06	15.13

EXPERIMENTAL DATA

DATA FILES : D02141 DPH = 65.5 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	60.00	58.60	52.00	2.61	2.62	2.62	32.20	44.70	5.56	5.52	5.56
2	71.00	69.80	60.20	4.46	4.04	3.97	32.80	51.10	7.97	7.97	8.05
3	82.00	80.50	68.20	5.55	5.56	5.50	34.10	57.30	10.85	10.99	11.00
4	92.00	90.00	74.80	6.67	6.69	6.49	34.50	63.20	13.02	13.07	13.04
5	101.00	99.50	81.30	8.24	8.24	8.27	34.40	68.50	14.92	14.97	15.03

EXPERIMENTAL DATA

DATA FILES : D02142 DPH = 101 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	60.00	59.30	54.40	1.61	1.60	1.54	34.80	47.00	5.11	5.09	5.20
2	71.00	69.90	62.70	3.02	3.05	3.03	34.90	53.20	8.67	8.62	8.75
3	81.00	80.40	70.90	4.02	3.99	3.87	33.60	59.70	11.43	11.50	11.58
4	92.00	90.00	78.00	5.12	5.14	4.67	35.40	65.60	13.62	13.65	13.64
5	100.00	99.20	84.80	5.47	5.45	5.50	35.80	71.30	17.15	16.95	16.93

EXPERIMENTAL DATA

DATA FILES : D02143 DPH = 10.5 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	61.00	59.30	48.00	4.63	4.64	4.56	34.40	43.00	3.57	3.62	3.65
2	71.00	69.80	52.30	6.73	6.58	6.68	33.90	46.40	5.59	5.62	5.64
3	71.00	70.50	52.50	7.30	7.33	7.32	33.30	46.30	5.18	5.20	5.22

EXPERIMENTAL DATA

DATA FILES : D02151 DPH = 39 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	61.00	60.20	53.00	2.85	2.86	2.88	34.00	46.10	4.86	4.87	4.80
2	72.00	70.50	60.10	4.01	4.07	4.10	35.30	52.00	7.83	7.81	7.79
3	81.00	80.30	66.80	5.89	6.09	6.14	35.30	57.30	9.59	9.54	9.45
4	91.00	90.10	73.20	7.39	7.30	7.34	35.40	62.40	12.38	13.27	12.31
5	102.00	99.60	99.80	8.85	8.17	8.12	36.00	67.20	14.30	14.30	14.33

EXPERIMENTAL DATA

DATA FILES : D02152 DPH = 77 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	61.00	60.40	54.70	1.65	1.63	1.63	35.30	47.70	4.71	4.72	4.83
2	71.00	70.10	61.00	2.57	3.06	2.99	35.00	53.20	7.64	7.61	7.63
3	81.00	99.90	69.10	3.46	4.03	4.03	34.50	58.60	10.64	10.45	10.34
4	92.00	90.00	76.40	5.31	5.30	5.33	35.10	64.70	14.54	14.53	14.50
5	102.00	100.40	83.50	7.71	7.62	6.75	34.70	70.50	17.03	16.64	16.53

EXPERIMENTAL DATA

DATA FILES : D02161 DPH = 50.5 DPC = 19 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	62.00	60.60	53.30	2.76	2.85	3.12	32.20	45.90	5.62	5.70	6.03
2	71.00	69.70	59.60	3.95	4.37	4.49	33.20	50.90	7.66	7.72	7.94
3	82.00	80.00	67.30	5.46	5.52	5.65	33.80	56.70	10.25	10.64	10.70
4	92.00	90.50	75.20	6.73	7.43	7.51	35.30	63.30	13.04	13.23	13.34
5	101.00	99.20	80.50	8.75	8.04	9.01	35.30	68.00	15.03	15.19	15.32
6	91.00	89.90	74.70	6.78	6.70	6.58	35.70	63.20	13.24	13.24	13.11
7	81.00	78.10	66.50	5.12	5.20	5.24	35.50	56.70	9.63	9.76	9.80
8	71.00	69.30	60.40	3.69	3.62	3.51	35.30	52.00	7.48	7.44	7.39
9	61.00	59.90	53.90	2.01	2.01	2.09	35.00	47.30	4.33	4.34	4.31
10	52.00	51.10	49.90	0.19	0.17	0.15	34.30	41.50	0.56	0.49	0.41

EXPERIMENTAL DATA

DATA FILES : D02171 DPH = 52 DPC = 40.5 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	102.00	99.80	80.20	10.23	9.37	9.42	35.20	58.20	10.81	10.66	10.46
2	91.00	89.80	72.80	7.59	8.04	8.36	35.30	54.80	8.40	8.79	8.84
3	81.00	79.10	66.60	5.97	6.44	6.48	34.60	50.70	6.63	6.62	6.56
4	71.00	68.90	59.10	4.13	4.19	4.22	35.40	48.10	4.91	4.80	4.76
5	61.00	58.40	53.40	1.94	1.95	1.98	35.40	45.50	2.60	2.45	2.37
6	50.50	50.50	48.60	0.45	0.42	0.42	34.40	36.80	0.59	0.55	0.49

EXPERIMENTAL DATA

DATA FILES : D02172 DPH = 52 DPC = 55 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	101.00	100.00	84.30	9.98	8.96	9.31	34.70	54.40	7.54	7.60	7.64
2	91.00	89.50	72.80	7.85	7.92	7.34	33.90	51.20	6.68	6.55	6.82
3	80.20	80.30	66.70	6.50	6.42	6.82	34.20	48.50	6.06	6.10	6.13
4	72.00	71.30	60.10	4.71	4.79	4.84	33.50	46.00	4.44	4.45	4.46
5	61.00	60.30	53.50	2.39	2.49	2.69	33.20	43.90	3.17	3.11	3.19
6	52.00	50.50	48.30	0.28	0.29	0.30	32.50	35.30	0.29	0.30	0.31

EXPERIMENTAL DATA

DATA FILES : Do2191 DPH = 53 DPC = 29.5 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	102.00	100.20	79.90	9.25	8.51	8.49	34.00	63.80	13.65	13.42	13.48
2	92.00	90.70	73.90	8.01	8.09	7.16	34.30	59.60	11.59	11.62	11.78
3	81.00	80.30	67.20	6.25	5.81	5.75	35.00	55.60	9.04	9.35	9.19
4	72.50	70.40	61.20	4.37	4.18	4.01	34.90	51.60	6.48	6.50	6.41
5	61.00	60.30	55.20	1.60	1.29	1.47	34.80	48.30	1.63	1.25	1.48
6	56.00	55.20	53.40	0.56	0.34	0.45	34.60	39.40	0.62	0.60	0.54
7	52.00	50.90	49.70	0.00	0.00	0.00	34.70	35.50	0.20	0.19	0.18

EXPERIMENTAL DATA

DATA FILES : Do2192 DPH = 51.5 DPC = 10 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	102.00	100.50	89.00	4.93	4.03	3.99	37.20	81.70	21.59	21.44	21.47
2	91.00	90.50	80.50	3.92	3.62	3.01	36.10	73.90	17.43	17.49	17.60
3	82.00	80.80	72.80	3.33	2.56	3.18	35.50	66.70	14.95	14.35	14.41
4	72.00	70.20	64.30	1.75	2.25	1.68	35.30	59.00	10.80	10.01	10.75
5	61.00	60.50	56.60	0.81	1.09	0.72	34.50	51.60	6.59	5.92	6.45
6	51.00	50.40	49.40	0.00	0.00	0.00	33.80	35.30	0.65	0.62	0.61

EXPERIMENTAL DATA

DATA FILES : Do2201 DPH = 101 DPC = 29.5 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.50	99.60	84.30	5.87	5.72	5.92	34.90	66.60	13.95	14.01	13.94
2	92.00	90.60	78.70	5.69	4.99	5.70	34.40	60.40	11.03	11.58	10.82
3	81.00	80.80	70.50	3.89	3.90	3.78	34.60	55.90	9.35	9.42	9.53
4	71.00	70.40	62.80	2.50	2.49	2.51	33.40	52.20	3.37	5.94	6.44
5	61.00	60.10	56.40	0.68	0.87	0.97	33.20	47.60	2.19	2.07	1.83
6	50.00	49.20	49.00	0.48	0.48	0.48	32.60	33.40	0.36	0.39	0.41

EXPERIMENTAL DATA

DATA FILES : Do2211 DPH = 65.5 DPC = 30.5 LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	102.00	100.80	81.80	8.62	8.52	8.49	35.60	64.40	12.44	13.20	13.38
2	92.00	90.80	75.70	7.10	7.16	6.16	35.90	60.10	11.10	10.25	10.99
3	81.00	80.00	68.50	5.15	4.32	4.96	35.00	56.10	7.98	7.94	4.52
4	70.00	69.50	62.90	2.69	2.74	2.59	34.40	52.50	4.75	4.26	4.82
5	62.00	60.90	57.00	0.82	0.81	0.72	33.70	46.50	1.48	1.25	1.77
6	51.00	50.20	49.70	0.23	0.25	0.25	32.70	33.40	0.26	0.24	0.23

EXPERIMENTAL DATA

DATA FILES : D02212

DPH = 77.5

DPC = 29

LEVEL = 28

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	102.00	100.40	81.90	7.62	7.85	7.82	31.40	65.70	14.79	14.29	14.35
2	92.00	90.50	76.30	5.11	5.14	5.08	32.80	61.70	12.07	12.06	12.57
3	82.00	80.40	69.30	3.48	3.93	3.54	33.20	57.30	9.12	9.26	9.04
4	72.00	70.50	63.30	2.28	2.30	2.32	33.30	53.50	5.85	6.18	6.50
5	62.00	60.10	56.70	0.24	0.54	0.54	32.60	34.30	1.12	1.27	1.32
6	56.00	55.80	54.60	0.31	0.31	0.25	32.40	33.30	0.59	0.50	0.59

EXPERIMENTAL DATA

DATA FILES : D03061

DPH = 65

DPC = 30

LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.30	93.00	6.53	6.73	6.26	33.90	57.10	8.37	8.12	7.90
2	90.00	90.50	78.80	6.08	6.34	6.91	34.00	57.50	10.66	10.65	10.52
3	80.00	80.20	69.80	5.44	4.77	5.29	33.70	52.90	8.47	8.70	8.59
4	70.00	70.60	61.70	3.76	3.81	3.86	32.80	48.10	6.47	6.35	6.39
5	60.00	60.30	53.00	2.75	2.74	2.68	32.40	43.60	4.53	4.52	4.56
6	55.00	54.70	48.60	1.96	1.95	1.93	32.30	41.30	3.87	3.86	3.87
7	50.00	50.40	45.50	1.42	1.41	1.36	31.60	38.90	2.69	2.88	2.95

EXPERIMENTAL DATA

DATA FILES : D03071

DPH = 65

DPC = 20

LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.70	86.60	7.52	7.92	7.94	34.40	66.10	14.85	14.79	14.73
2	90.00	90.40	77.30	6.14	5.97	6.20	35.80	61.80	12.57	12.81	12.82
3	80.00	80.50	69.30	5.11	5.02	5.18	35.00	56.80	10.34	10.28	10.15
4	70.00	70.30	61.10	3.73	3.73	3.64	35.40	51.80	7.46	7.43	7.40
5	60.00	60.70	53.90	2.77	2.70	2.50	35.40	47.30	5.00	5.47	5.39
6	55.00	55.80	50.60	1.84	1.85	1.83	35.30	44.70	4.13	4.14	4.12
7	50.00	50.60	46.80	1.04	0.94	0.95	35.20	41.30	2.61	2.60	2.63

EXPERIMENTAL DATA

DATA FILES : D03072

DPH = 65

DPC = 40

LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.80	93.80	7.26	6.37	6.60	35.20	55.30	8.71	8.71	8.74
2	90.00	90.40	81.80	6.15	6.20	5.99	34.70	52.90	7.66	7.73	7.60
3	80.00	80.10	70.10	4.99	5.40	5.45	34.20	49.80	6.74	6.63	6.57
4	70.00	70.10	61.60	3.94	3.79	1.03	33.10	45.70	5.31	5.29	5.30
5	60.00	60.20	53.00	2.97	2.83	2.93	32.70	42.40	4.08	4.13	4.11
6	55.00	55.30	49.00	2.01	2.02	2.05	32.30	40.40	3.27	3.28	3.26
7	50.00	50.20	45.30	1.41	1.37	1.47	32.10	38.30	2.28	2.25	2.37

EXPERIMENTAL DATA

DATA FILES : Do3151 DPH = 102 DPC = 29 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.80	95.70	5.83	5.37	5.02	28.90	56.70	11.93	11.81	11.69
2	90.00	90.70	82.40	4.84	4.58	4.75	29.70	56.30	11.17	10.99	10.83
3	80.00	80.50	72.30	3.86	3.29	3.50	30.80	52.30	9.02	9.00	8.69
4	70.00	70.50	63.30	2.37	2.40	2.45	30.60	47.90	6.39	6.36	6.53
5	60.00	60.40	54.40	1.71	1.70	1.70	30.90	44.30	4.68	4.69	4.62
6	55.00	55.80	51.00	1.08	1.23	1.24	31.60	43.10	3.75	3.68	3.66
7	50.00	50.80	47.50	0.38	0.40	0.41	31.50	40.60	1.02	1.00	0.99

EXPERIMENTAL DATA

DATA FILES : Do3152 DPH = 102 DPC = 54 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.60	96.80	5.10	5.40	4.64	33.00	50.70	7.12	6.68	6.85
2	90.00	90.60	85.50	4.35	4.41	3.79	33.20	50.10	6.40	6.25	6.57
3	80.00	80.60	73.10	3.99	4.27	3.77	33.50	48.80	5.85	5.75	5.65
4	70.00	70.50	63.70	2.98	3.06	2.86	34.50	46.60	4.65	4.61	4.84
5	60.00	60.30	54.10	1.96	2.18	2.19	34.60	44.00	3.51	3.75	3.58
6	55.00	55.10	50.50	1.18	1.15	1.27	33.50	42.30	2.47	2.17	2.25
7	50.00	50.00	48.50	0.10	0.05	-0.08	33.80	37.20	0.34	0.37	0.33

EXPERIMENTAL DATA

DATA FILES : Do3153 DPH = 102 DPC = 19 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	87.70	4.66	4.53	5.44	36.30	73.30	16.84	16.81	17.34
2	90.00	90.40	79.70	3.53	4.10	3.44	36.50	66.90	13.80	13.54	14.02
3	80.00	80.30	71.20	3.12	2.76	2.80	35.40	60.30	10.80	11.18	10.69
4	70.00	70.40	63.10	1.91	1.87	2.26	34.10	53.70	8.26	7.92	8.02
5	60.00	60.40	55.10	1.60	1.37	1.35	33.00	47.50	5.61	5.36	5.40
6	55.00	55.40	51.30	0.85	1.02	0.97	32.50	44.50	3.85	3.97	4.00
7	50.00	50.80	48.20	-0.01	0.04	0.26	32.20	42.00	1.55	1.44	1.38

EXPERIMENTAL DATA

DATA FILES : Do3161 DPH = 102 DPC = 40 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	96.70	4.08	4.36	4.70	29.50	50.50	8.22	8.07	8.04
2	90.00	90.50	84.60	4.73	4.43	4.01	30.20	50.90	7.90	7.50	7.62
3	80.00	80.60	72.80	3.56	3.82	3.69	30.90	49.40	6.88	6.95	6.76
4	70.00	70.50	63.90	3.30	2.97	2.82	31.20	46.00	5.05	4.99	5.18
5	60.00	60.30	54.10	1.96	1.95	1.97	31.80	43.30	3.50	3.47	3.67
6	55.00	55.70	50.80	1.59	1.40	1.39	32.30	42.40	2.95	2.76	2.84
7	50.00	50.70	47.80	0.33	0.44	0.16	32.60	40.50	1.34	1.22	1.24

EXPERIMENTAL DATA

DATA FILES : D03081 DPH = 65 DPC = 55 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.20	95.10	6.73	7.03	6.32	35.00	49.10	6.94	6.76	6.82
2	90.00	90.60	84.40	7.08	6.65	6.68	35.30	49.50	6.66	6.72	6.63
3	80.00	80.60	70.50	5.86	6.21	5.76	34.40	47.80	5.70	5.96	5.42
4	70.00	70.80	62.30	4.73	4.55	4.61	35.50	45.90	4.65	4.55	4.71
5	60.00	60.70	53.60	3.29	3.38	3.27	35.10	43.10	3.35	3.34	3.34
6	55.00	55.30	49.40	2.20	2.21	2.20	35.30	41.70	2.90	2.89	2.87
7	50.00	50.10	46.40	1.32	1.33	1.39	35.30	39.90	1.66	1.63	1.61

EXPERIMENTAL DATA

DATA FILES : D03082 DPH = 75 DPC = 29 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.30	90.90	6.99	6.70	5.71	35.20	61.70	11.52	11.65	12.38
2	90.00	90.10	78.80	5.83	5.71	5.62	35.40	58.90	10.75	10.81	10.91
3	80.00	80.30	71.00	4.55	4.48	4.71	34.70	54.00	8.66	8.67	8.72
4	70.00	70.60	62.40	3.28	3.37	3.29	34.70	49.70	6.99	6.87	7.11
5	60.00	60.50	54.00	2.36	2.37	2.19	33.60	45.40	4.84	4.81	4.79
6	55.00	55.30	49.80	1.51	1.49	1.48	32.80	42.30	3.49	3.48	3.49
7	50.00	50.30	46.30	0.99	0.97	0.95	32.50	39.30	2.30	2.23	2.24

EXPERIMENTAL DATA

DATA FILES : D03083 DPH = 75 DPC = 19 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	86.10	6.13	6.83	6.77	32.90	68.90	15.54	15.55	15.48
2	90.00	90.50	77.90	5.46	4.89	4.76	33.70	63.80	14.12	14.11	13.95
3	80.00	80.30	69.70	3.74	3.77	3.80	33.20	57.80	11.29	11.38	11.36
4	70.00	70.90	61.90	3.20	3.21	3.09	32.10	52.30	8.41	8.49	8.60
5	60.00	60.40	54.00	1.81	1.81	1.90	32.90	46.90	6.14	6.10	6.09
6	55.00	55.10	49.80	1.39	1.38	1.47	32.40	43.40	4.51	4.58	4.61
7	50.00	50.40	46.70	1.03	0.98	0.95	32.20	40.30	3.36	3.36	3.41

EXPERIMENTAL DATA

DATA FILES : D03091 DPH = 75 DPC = 55 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	96.20	4.71	4.75	4.97	30.50	44.50	5.40	5.32	5.27
2	90.00	90.20	86.30	5.28	4.54	4.73	31.50	45.90	5.00	5.03	4.96
3	80.00	80.30	71.70	5.46	4.89	4.80	32.40	46.30	5.47	5.11	5.09
4	70.00	70.90	63.60	3.72	3.65	3.71	32.70	44.10	4.00	4.04	4.04
5	60.00	60.80	53.90	2.58	2.53	2.48	33.40	42.30	2.99	3.00	3.05
6	55.00	55.10	49.20	1.83	1.84	1.83	33.80	40.90	2.31	2.34	2.37
7	50.00	50.60	46.80	1.15	0.90	1.20	34.20	39.90	1.49	1.46	1.45

EXPERIMENTAL DATA

DATA FILES : D03092

DPH = 75 DPC = 40 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.00	93.50	6.84	6.51	7.01	35.70	56.60	9.08	8.96	8.70
2	90.00	90.50	80.20	5.56	6.63	6.46	36.10	55.70	8.65	8.45	8.36
3	80.00	80.00	70.90	4.57	4.56	4.53	35.00	51.60	7.26	7.23	7.32
4	70.00	70.60	62.60	3.43	3.45	3.51	34.60	47.50	4.75	4.83	4.92
5	60.00	60.70	53.90	2.15	2.36	2.42	34.60	44.50	3.67	3.51	3.57
6	55.00	55.50	50.10	1.75	1.78	1.77	35.10	43.10	2.85	2.88	2.88
7	50.00	50.70	46.90	0.75	0.72	0.36	34.20	40.50	1.20	1.12	0.88

EXPERIMENTAL DATA

DATA FILES : D03101

DPH = 40 DPC = 29 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	92.20	7.54	9.30	8.30	31.50	50.80	6.27	7.90	7.87
2	90.00	90.40	78.50	8.60	7.00	7.80	31.40	50.80	7.78	7.60	7.50
3	80.00	80.40	67.00	7.00	6.20	6.30	32.60	49.20	6.89	6.70	6.93
4	70.00	70.40	59.30	4.80	4.94	4.77	32.50	45.70	5.22	5.28	5.20
5	60.00	60.60	51.70	3.57	3.48	3.50	33.10	43.10	3.95	3.94	3.96
6	55.00	55.20	47.90	2.49	2.39	2.45	33.50	41.30	2.83	2.81	2.84
7	50.00	50.00	44.70	1.72	1.67	1.73	33.10	38.70	1.81	1.73	1.76

EXPERIMENTAL DATA

DATA FILES : D03102

DPH = 40 DPC = 19 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	99.80	80.80	9.05	8.96	8.84	33.50	64.40	13.77	13.66	13.60
2	90.00	90.60	74.40	6.90	6.70	7.60	34.30	60.60	11.54	11.45	11.30
3	80.00	80.40	67.20	5.43	5.46	5.30	33.20	55.10	9.90	9.70	9.56
4	70.00	70.80	59.90	4.59	4.12	3.96	33.80	50.80	6.99	6.98	6.97
5	60.00	60.20	51.80	2.84	3.09	3.33	30.70	43.60	4.95	4.97	5.00
6	55.00	55.30	48.10	2.29	2.22	2.22	30.80	41.30	4.13	4.15	4.14
7	50.00	50.70	45.20	1.56	1.61	1.58	31.00	39.10	2.98	3.03	2.92

EXPERIMENTAL DATA

DATA FILES : D03121

DPH = 40 DPC = 54 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.90	93.80	8.50	9.28	8.25	35.80	50.00	6.12	6.34	6.26
2	90.00	90.40	79.40	7.72	8.79	7.50	35.80	49.90	6.11	5.95	5.79
3	80.00	80.80	68.40	6.84	6.92	7.04	35.80	48.00	5.32	5.25	5.38
4	70.00	70.90	60.20	4.96	5.01	5.06	35.30	45.20	3.84	3.85	3.81
5	60.00	60.60	52.10	3.47	3.55	3.51	35.70	43.10	2.87	2.85	2.84
6	55.00	55.50	48.60	2.69	2.54	2.65	35.70	41.50	2.25	2.26	2.24
7	50.00	50.10	45.70	1.30	1.57	1.46	35.80	39.70	1.30	1.32	1.39

EXPERIMENTAL DATA

DATA FILES : Do3122 DPH = 40 DPC = 40 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	89.90	9.61	9.08	8.93	35.70	55.60	7.62	7.82	7.73
2	90.00	90.30	75.50	7.80	7.53	7.74	36.00	54.00	7.36	7.46	7.30
3	80.00	80.80	67.90	6.76	5.91	6.24	35.30	50.50	6.38	6.31	6.33
4	70.00	70.70	60.00	4.65	4.44	4.48	34.20	46.20	4.29	4.35	4.46
5	60.00	60.50	51.90	3.35	3.19	2.95	33.20	42.50	2.86	2.84	2.91
6	55.00	55.40	48.10	2.31	2.27	2.32	33.00	40.40	2.26	2.30	2.29
7	50.00	50.30	45.30	1.29	1.32	1.52	32.40	38.50	1.36	1.37	1.43

EXPERIMENTAL DATA

DATA FILES : Do3123 DPH = 40 DPC = 19 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.90	80.00	8.99	9.09	8.91	33.60	66.90	14.83	14.85	14.91
2	90.00	90.70	74.40	6.53	6.62	6.61	34.30	62.60	12.44	12.38	12.26
3	80.00	80.80	67.40	5.01	5.36	5.56	33.90	57.50	9.99	10.00	9.85
4	70.00	70.30	59.80	4.09	4.09	4.08	34.50	52.20	7.81	7.97	7.86
5	60.00	60.50	53.30	2.24	2.44	2.48	34.70	47.20	5.48	5.54	5.55
6	55.00	55.20	49.80	1.65	1.58	1.51	33.90	43.90	4.01	3.96	3.97
7	50.00	50.40	46.50	0.81	0.97	0.99	34.10	41.30	2.86	2.85	2.83

EXPERIMENTAL DATA

DATA FILES : Do3131 DPH = 40 DPC = 11 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.20	81.70	7.71	7.81	8.51	33.90	71.40	17.15	17.05	17.09
2	90.00	90.20	74.90	6.35	5.94	6.05	34.40	65.70	14.17	14.15	13.88
3	80.00	80.20	67.70	4.74	5.00	4.80	34.70	60.20	10.82	10.81	10.83
4	70.00	70.60	61.20	3.26	3.35	3.72	35.40	54.80	8.71	8.68	8.65
5	60.00	60.80	54.10	2.05	2.03	2.15	35.40	48.40	5.40	5.39	5.38
6	55.00	55.30	50.40	1.36	1.44	1.63	35.80	45.70	4.30	4.36	4.17
7	50.00	50.70	47.20	0.90	1.15	1.00	36.00	42.50	2.78	2.67	2.70

EXPERIMENTAL DATA

DATA FILES : Do3132 DPH = 11 DPC = 11 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.60	73.50	11.24	11.10	11.16	36.80	66.80	13.34	13.33	13.14
2	90.00	90.40	67.90	8.99	9.07	9.60	36.90	61.80	10.59	10.55	10.43
3	80.00	80.30	62.80	7.13	7.64	7.70	37.30	57.30	9.27	9.23	9.31
4	70.00	70.00	57.20	5.24	5.60	5.54	37.20	52.30	6.74	6.75	6.72
5	60.00	60.30	51.30	3.33	3.29	3.65	36.10	47.10	4.04	4.24	4.18
6	55.00	55.70	48.70	2.59	2.70	2.46	36.80	44.90	3.52	3.47	3.51
7	50.00	50.30	45.20	1.39	1.53	1.71	35.50	41.20	2.24	2.25	2.01

EXPERIMENTAL DATA

DATA FILES : D03133 DPH = 11 DPC = 40 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.10	70.30	14.44	14.57	15.39	34.90	50.00	5.83	5.71	5.99
2	90.00	90.20	64.20	12.21	11.75	11.64	34.80	49.40	5.65	5.74	5.67
3	80.00	80.10	58.70	9.46	9.33	9.81	34.80	47.10	4.69	4.64	4.75
4	70.00	70.60	53.50	7.12	7.16	7.21	33.90	44.10	3.50	3.48	3.61
5	60.00	60.60	47.80	5.21	5.15	5.18	33.20	41.00	2.35	2.38	2.39
6	55.00	55.10	45.50	3.56	3.52	3.49	33.70	39.60	2.19	2.18	2.16
7	50.00	50.00	43.10	2.44	2.43	2.45	33.30	38.00	1.30	1.29	1.27

EXPERIMENTAL DATA

DATA FILES : D03141 DPH = 11 DPC = 29 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.70	68.70	14.16	14.11	14.38	34.60	55.50	8.06	8.21	8.19
2	90.00	90.40	63.80	11.74	11.54	12.86	34.80	52.60	6.92	6.77	6.87
3	80.00	80.20	59.50	9.29	9.31	9.24	36.10	50.90	6.44	6.43	6.37
4	70.00	70.50	54.60	6.75	6.56	6.62	35.90	47.90	4.56	4.63	4.58
5	60.00	60.40	50.70	3.91	3.85	3.87	36.00	45.40	3.04	2.97	2.95
6	55.00	55.60	49.00	2.50	2.59	2.45	36.10	44.40	2.04	2.02	1.93
7	50.00	50.80	47.40	0.58	0.96	0.90	35.20	39.20	0.00	-0.03	-0.07

EXPERIMENTAL DATA

DATA FILES : D03142 DPH = 11 DPC = 54 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.80	69.20	14.87	15.01	15.07	36.60	51.20	5.82	5.91	6.00
2	90.00	90.80	64.10	11.76	11.83	12.85	36.90	49.70	5.06	5.04	5.14
3	80.00	80.30	58.60	9.32	9.37	10.29	36.00	47.10	3.90	4.04	3.75
4	70.00	70.00	53.50	7.01	6.97	6.96	36.00	45.50	3.52	3.53	3.76
5	60.00	60.60	49.80	3.97	4.02	4.39	34.40	43.00	1.65	1.84	1.67
6	55.00	55.70	47.80	3.06	3.08	2.70	33.90	41.90	0.95	1.00	1.02
7	50.00	50.50	46.00	0.57	0.59	0.80	33.80	36.60	0.02	0.01	0.03

EXPERIMENTAL DATA

DATA FILES : D03143 DPH = 11 DPC = 19 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.70	71.20	12.83	12.73	14.10	34.60	61.00	11.61	11.56	11.58
2	90.00	90.40	65.60	9.89	10.91	11.10	34.20	56.70	9.51	9.58	9.70
3	80.00	80.50	60.20	8.04	7.99	8.95	34.00	52.70	7.74	7.85	7.88
4	70.00	70.60	55.20	6.13	6.15	6.83	34.60	49.20	6.37	6.29	6.28
5	60.00	60.30	50.10	3.83	3.85	3.90	33.40	44.80	3.90	3.95	3.91
6	55.00	55.10	47.90	2.17	2.18	2.42	33.50	43.50	2.78	2.78	2.75
7	50.00	50.70	46.90	0.89	1.06	1.23	32.70	40.70	0.39	0.38	0.37

EXPERIMENTAL DATA

DATA FILES : D03162 DPH = 102 DPC = 11 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.20	89.00	3.05	3.81	3.00	34.90	78.70	19.21	19.33	19.41
2	90.00	90.60	81.30	2.27	2.28	2.44	35.10	72.20	16.52	16.16	15.97
3	80.00	80.10	72.70	1.65	1.39	1.42	35.20	64.70	12.63	12.93	12.56
4	70.00	70.40	64.60	1.35	0.98	1.01	34.80	57.90	9.32	9.69	9.54
5	60.00	60.40	56.50	0.84	0.78	0.63	34.90	50.90	6.45	6.44	6.41
6	55.00	55.60	52.50	0.31	0.26	0.46	34.60	47.20	4.60	4.52	4.33
7	50.00	50.80	48.80	-0.11	0.00	-0.08	34.60	43.40	1.24	1.08	0.98

EXPERIMENTAL DATA

DATA FILES : D03171 DPH = 67 DPC = 29 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.80	93.00	6.47	6.64	6.70	30.90	58.40	11.74	11.77	11.94
2	90.00	90.90	79.90	6.50	6.69	6.54	30.80	55.80	10.52	10.44	10.62
3	80.00	80.30	70.80	4.57	4.65	4.63	31.80	52.30	8.66	8.70	8.64
4	70.00	70.60	62.30	3.58	3.55	3.52	33.20	49.00	6.91	6.42	6.27
5	60.00	60.50	53.80	2.32	2.29	2.34	32.70	45.10	4.61	4.60	4.59
6	55.00	55.40	49.90	1.88	1.86	1.88	32.90	43.10	3.43	3.46	3.44
7	50.00	50.10	46.90	0.83	0.82	0.82	33.90	41.40	1.77	1.71	1.73

EXPERIMENTAL DATA

DATA FILES : D03172 DPH = 67 DPC = 56 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	96.00	6.26	6.12	6.55	34.00	49.90	6.12	6.13	6.19
2	90.00	90.50	83.70	6.15	6.48	6.31	35.20	50.70	6.37	6.19	6.18
3	80.00	80.70	72.80	4.54	4.54	4.33	35.60	49.20	5.36	5.34	5.44
4	70.00	70.30	63.30	3.41	3.54	3.42	35.00	45.80	4.19	4.11	4.08
5	60.00	60.50	54.30	2.43	2.62	2.67	35.20	43.70	3.20	3.14	3.12
6	55.00	55.50	50.50	1.70	1.70	1.66	35.40	42.80	2.17	2.13	2.14
7	50.00	50.40	47.70	0.65	0.55	0.54	34.90	40.70	0.86	0.78	7.76

EXPERIMENTAL DATA

DATA FILES : D03173 DPH = 40 DPC = 29 LEVEL = 16

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.60	87.50	9.03	9.16	8.67	35.00	60.00	10.99	11.14	11.24
2	90.00	90.00	75.70	7.36	8.02	7.83	35.20	56.70	9.35	9.54	9.65
3	80.00	80.80	68.80	5.78	5.95	6.43	34.80	52.70	7.64	7.63	7.89
4	70.00	70.30	60.10	4.24	4.60	4.22	34.80	48.90	5.72	5.80	5.64
5	60.00	60.30	52.50	3.32	3.36	2.97	31.90	43.40	4.08	4.05	4.06
6	55.00	55.70	49.30	2.41	2.40	2.39	32.20	41.90	3.42	3.41	3.40
7	50.00	50.50	46.10	1.29	1.28	1.29	31.70	39.90	2.15	2.15	2.14

EXPERIMENTAL DATA

DATA FILES : D03201

DPH = 40 DPC = 29 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	79.40	10.09	10.35	10.44	34.80	61.20	11.88	11.95	12.06
2	90.00	90.40	72.40	8.41	8.92	8.27	36.60	58.10	10.10	10.42	10.18
3	80.00	80.30	65.70	6.64	6.06	6.18	36.30	53.80	7.85	8.19	7.89
4	70.00	70.50	59.20	4.42	4.85	4.82	36.40	49.90	6.06	5.85	5.82
5	60.00	60.40	52.50	2.95	3.02	3.00	36.20	45.40	4.05	4.26	4.08
6	50.00	50.60	46.50	1.40	1.21	1.30	35.20	40.20	1.68	1.82	1.59

EXPERIMENTAL DATA

DATA FILES : D03202

DPH = 40 DPC = 39 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.30	82.10	10.13	10.52	10.33	36.40	56.60	9.48	9.53	9.37
2	90.00	90.50	73.50	8.51	8.79	8.69	35.10	53.60	7.83	7.81	7.91
3	80.00	80.40	66.00	6.61	6.78	5.95	34.40	49.60	6.30	6.49	6.72
4	70.00	70.30	58.50	5.12	5.02	5.08	34.10	46.10	4.93	4.86	4.80
5	60.00	60.80	51.90	3.32	3.28	3.70	33.50	42.80	3.66	3.82	3.74
6	50.00	50.50	45.50	1.40	1.48	1.44	33.80	38.70	1.97	1.87	1.76

EXPERIMENTAL DATA

DATA FILES : D03211

DPH = 40 DPC = 54 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	93.00	8.59	9.20	9.13	32.50	47.60	6.13	6.12	6.18
2	90.00	90.90	76.80	8.91	8.62	8.82	34.00	49.00	6.48	6.38	6.46
3	80.00	80.80	65.90	6.85	6.73	7.47	35.20	47.40	5.73	5.67	5.65
4	70.00	70.20	58.80	5.42	5.40	4.92	34.40	44.20	4.19	4.20	4.20
5	60.00	60.70	51.90	3.44	3.47	3.46	34.50	42.00	3.05	3.06	3.06
6	50.00	50.70	45.80	1.71	1.67	1.75	35.20	39.40	1.42	1.52	1.51

EXPERIMENTAL DATA

DATA FILES : D03212

DPH = 40 DPC = 11 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	84.90	5.86	5.91	5.81	37.60	76.90	18.85	19.01	19.24
2	90.00	90.20	77.70	5.54	5.49	5.53	37.50	70.50	15.77	15.81	15.86
3	80.00	80.30	70.10	4.88	4.81	4.43	37.60	63.40	12.66	12.65	12.74
4	70.00	70.80	63.00	3.29	3.69	3.76	37.40	57.20	9.44	9.42	9.40
5	60.00	60.70	55.50	1.96	1.86	1.72	37.10	50.50	5.75	5.76	5.77
6	50.00	50.60	48.20	0.44	0.44	0.43	37.20	42.70	2.34	2.38	2.40

EXPERIMENTAL DATA

DATA FILES : D03213

DPH = 40 DPC = 19 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.90	80.80	8.94	8.95	9.10	38.40	68.30	14.00	13.97	13.95
2	90.00	90.40	73.70	7.54	7.13	7.08	37.50	62.50	11.62	11.83	11.75
3	80.00	80.20	67.00	5.49	6.24	6.18	36.50	57.00	8.88	9.21	9.10
4	70.00	70.40	60.20	3.83	4.43	3.86	36.60	52.00	7.00	6.87	6.85
5	60.00	60.40	53.40	2.59	2.62	2.84	35.80	46.70	4.70	4.64	4.83
6	50.00	50.30	47.00	1.45	1.54	1.25	35.10	40.60	2.60	2.32	2.31

EXPERIMENTAL DATA

DATA FILES : D03221

DPH = 11 DPC = 29 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	68.40	15.25	15.01	15.20	32.90	53.90	9.60	9.55	9.42
2	90.00	90.30	63.70	12.44	12.28	13.47	33.90	51.70	8.25	8.07	8.11
3	80.00	80.50	59.10	9.41	9.30	10.39	33.70	48.40	6.35	6.48	6.28
4	70.00	70.40	53.90	7.05	7.18	7.79	33.90	45.30	4.99	5.01	4.95
5	60.00	60.80	49.40	5.09	4.44	4.95	34.40	42.60	3.66	3.58	3.60
6	50.00	50.40	44.30	2.06	2.01	2.24	33.90	39.00	1.36	1.34	1.50

EXPERIMENTAL DATA

DATA FILES : D03222

DPH = 67 DPC = 29 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.70	84.60	9.61	8.67	9.27	36.10	63.60	12.94	12.83	12.79
2	90.00	90.70	76.90	7.14	7.20	6.92	35.00	58.90	10.51	10.39	10.28
3	80.00	80.40	68.60	5.20	5.18	5.85	36.40	55.00	8.51	8.74	8.66
4	70.00	70.30	60.80	3.95	3.88	4.30	36.60	50.50	6.19	6.39	6.52
5	60.00	60.50	54.00	2.82	2.83	2.79	36.10	45.80	4.32	4.42	4.41
6	50.00	50.90	47.80	0.98	0.77	0.84	36.30	41.30	1.94	2.02	2.03

EXPERIMENTAL DATA

DATA FILES : D03223

DPH = 102 DPC = 29 LEVEL = 22

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	86.90	8.79	6.75	7.33	36.70	66.10	13.52	13.42	13.34
2	90.00	90.90	78.50	6.28	6.42	5.85	37.40	61.70	11.67	11.71	11.64
3	80.00	80.40	70.60	4.54	4.46	4.84	37.10	56.60	9.31	9.37	9.49
4	70.00	70.60	61.70	3.29	3.64	3.61	36.30	50.90	7.13	6.94	6.82
5	60.00	60.30	55.20	2.04	2.03	2.04	35.50	46.30	4.65	4.63	4.54
6	50.00	50.80	47.90	0.75	0.78	0.77	35.30	40.80	1.83	1.77	1.78

EXPERIMENTAL DATA

DATA FILES : D03231 DPH = 40 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	79.40	9.47	9.26	10.37	36.00	60.40	11.19	10.91	11.00
2	90.00	90.60	71.70	7.43	8.31	7.89	36.20	56.40	9.16	8.61	8.70
3	80.00	80.60	65.50	5.74	6.46	6.01	35.50	51.60	6.92	7.24	7.26
4	70.00	70.70	59.20	4.38	3.93	3.87	35.30	42.20	5.03	5.10	5.05
5	60.00	60.70	52.50	2.73	2.62	3.04	34.50	43.00	3.54	3.50	3.70
6	50.00	50.10	46.40	1.03	0.77	0.65	34.00	37.10	1.43	1.46	1.35

EXPERIMENTAL DATA

DATA FILES : D03241 DPH = 40 DPC = 39 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.30	79.60	11.36	11.63	11.04	33.60	55.40	9.55	9.65	9.62
2	90.00	90.60	71.60	9.23	9.98	10.29	34.90	52.70	8.15	7.88	8.26
3	80.00	80.50	64.90	7.73	6.95	7.01	34.40	49.00	5.99	6.81	6.73
4	70.00	70.60	58.50	5.44	5.99	5.35	34.40	45.20	5.20	4.97	4.72
5	60.00	60.60	52.40	4.80	3.68	3.70	34.60	42.30	3.42	3.45	3.43
6	50.00	50.70	46.50	1.64	1.71	1.72	35.20	38.30	1.34	1.81	1.84

EXPERIMENTAL DATA

DATA FILES : D03242 DPH = 40 DPC = 34 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	80.20	11.25	11.22	11.16	36.80	55.70	8.58	8.47	8.39
2	90.00	90.40	72.30	9.70	8.84	8.73	37.20	52.40	6.89	6.74	6.50
3	80.00	80.60	65.10	7.12	7.82	7.06	37.30	49.30	5.29	5.77	5.72
4	70.00	70.50	59.50	5.05	5.12	5.60	37.20	46.30	4.37	4.16	4.34
5	60.00	60.30	52.60	3.53	3.44	3.47	36.90	43.10	2.84	2.77	2.82
6	50.00	50.80	48.40	0.74	1.24	1.17	37.10	39.20	0.66	0.92	0.71

EXPERIMENTAL DATA

DATA FILES : D03243 DPH = 40 DPC = 19 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	81.20	9.56	8.37	8.49	37.80	68.30	14.05	13.82	14.00
2	90.00	90.90	74.70	7.14	7.07	7.79	37.60	63.20	11.88	11.56	11.74
3	80.00	80.60	68.00	5.58	5.76	5.96	37.20	57.40	9.24	9.05	8.89
4	70.00	70.40	60.80	4.73	4.30	4.67	36.30	51.50	6.74	6.66	6.88
5	60.00	60.40	53.80	2.44	3.00	2.72	35.70	46.00	4.24	4.06	4.17
6	50.00	50.90	48.50	1.41	1.04	1.21	34.70	37.90	0.90	0.91	0.84

EXPERIMENTAL DATA

DATA FILES : D03251 DPH = 40 DPC = 11 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.90	83.90	6.78	6.68	6.81	36.50	73.70	16.13	16.63	16.44
2	90.00	90.10	77.20	5.90	5.24	4.83	37.40	67.30	13.47	13.43	13.42
3	80.00	80.10	69.80	4.41	4.47	4.98	37.50	61.00	10.47	10.45	10.44
4	70.00	70.40	62.50	3.27	3.58	3.13	37.40	55.10	7.82	7.92	8.02
5	60.00	60.20	54.80	1.94	1.88	2.21	38.30	49.00	4.89	4.81	5.11
6	50.00	50.00	46.60	0.38	0.31	0.44	37.20	40.40	0.91	0.81	0.86

EXPERIMENTAL DATA

DATA FILES : D03252 DPH = 67 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.70	82.80	8.47	7.57	7.31	38.00	66.10	12.42	12.46	12.99
2	90.00	90.00	75.50	6.39	6.34	6.29	37.40	60.50	10.88	10.73	10.65
3	80.00	80.20	68.60	4.54	4.70	4.80	37.00	54.80	7.97	8.04	7.88
4	70.00	70.20	61.40	3.45	3.41	3.39	36.20	49.40	5.66	5.67	5.66
5	60.00	60.40	54.20	1.99	1.95	1.92	35.30	44.60	3.57	3.51	3.54
6	50.00	50.80	47.50	0.63	0.51	0.77	35.00	39.00	1.25	1.29	1.03

EXPERIMENTAL DATA

DATA FILES : D03261 DPH = 102 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.60	85.10	6.43	6.98	7.00	34.40	66.00	14.57	14.90	14.68
2	90.00	90.70	77.50	5.58	5.02	4.92	34.70	60.70	11.93	12.11	11.56
3	80.00	80.40	70.00	4.49	3.95	4.20	34.30	54.90	9.42	9.00	8.99
4	70.00	70.60	63.00	3.01	2.81	2.83	34.80	49.80	6.32	6.45	6.56
5	60.00	60.70	55.60	1.97	1.84	1.80	35.60	45.50	4.27	4.33	4.30
6	50.00	50.50	48.30	0.09	0.08	0.09	36.30	39.50	0.79	0.98	1.43

EXPERIMENTAL DATA

DATA FILES : D03262 DPH = 11 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.30	68.30	13.37	13.41	14.82	36.70	55.70	8.36	8.66	8.47
2	90.00	90.40	65.10	10.85	11.20	10.98	38.50	54.30	7.55	7.49	7.56
3	80.00	80.30	60.40	8.94	8.90	8.88	37.80	50.80	5.48	5.49	5.50
4	70.00	70.40	55.80	5.82	5.83	5.92	38.00	47.80	4.08	4.02	3.98
5	60.00	60.20	50.90	3.76	3.83	3.44	37.80	44.50	2.27	2.30	2.25
6	50.00	50.50	45.90	0.54	0.42	0.43	37.90	40.00	0.19	0.16	0.22

EXPERIMENTAL DATA

DATA FILES : D03263R DPH = 40 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.40	78.00	10.06	10.13	10.34	38.40	61.90	10.12	10.97	10.33
2	90.00	90.50	72.20	7.99	7.35	7.10	39.00	58.40	8.37	8.44	8.56
3	80.00	80.60	65.90	5.76	5.78	6.40	38.70	53.50	6.49	6.75	6.74
4	70.00	70.30	59.60	4.32	4.37	4.40	38.20	49.30	4.71	4.79	4.83
5	60.00	60.60	53.50	2.53	2.54	2.45	37.90	45.20	2.83	2.98	2.99
6	50.00	50.40	47.90	0.32	0.36	0.37	36.30	37.40	-0.29	-0.28	-0.18

EXPERIMENTAL DATA

DATA FILES : D03271 DPH = 67 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.60	81.50	8.55	8.56	8.58	34.30	64.50	13.81	14.16	14.36
2	90.00	90.60	74.90	7.14	7.16	7.09	35.30	59.90	11.72	11.54	11.54
3	80.00	80.60	68.60	5.27	5.26	5.32	35.90	55.10	8.77	8.93	9.12
4	70.00	70.50	61.80	3.81	4.15	4.21	35.90	50.00	6.67	6.58	6.57
5	60.00	60.80	54.80	2.30	2.27	2.26	35.90	45.50	4.04	4.05	4.07
6	50.00	50.20	49.30	0.30	0.31	0.30	35.70	39.90	0.44	0.43	0.48

EXPERIMENTAL DATA

DATA FILES : D03272 DPH = 40 DPC = 54 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.50	79.50	10.60	10.32	10.65	37.50	55.90	8.10	8.04	8.26
2	90.00	90.60	72.40	9.75	8.72	9.73	37.20	52.70	6.63	6.72	6.79
3	80.00	80.40	65.50	6.69	7.38	7.45	37.70	49.80	5.48	5.59	5.76
4	70.00	70.20	58.90	5.69	5.17	5.24	37.70	46.70	4.06	4.18	4.27
5	60.00	60.20	52.60	3.06	3.25	3.32	37.20	43.40	2.52	2.51	2.58
6	50.00	50.70	47.60	0.70	0.71	0.69	36.80	39.10	0.22	0.24	0.25

EXPERIMENTAL DATA

DATA FILES : D03281R DPH = 40 DPC = 29 LEVEL = 36.5

No.	TCH	THI	THO	DTH1	DTH2	DTH3	TCI	TCO	DTC1	DTC2	DTC3
1	100.00	100.60	78.30	10.33	10.49	10.49	35.10	62.30	11.50	11.55	11.42
2	90.00	90.60	72.10	7.39	7.30	7.42	34.80	57.30	9.29	9.37	9.52
3	80.00	80.50	66.10	5.97	6.14	6.17	35.10	52.70	7.29	7.28	7.35
4	70.00	70.40	59.70	4.11	4.13	3.78	34.90	47.80	5.11	5.12	5.19
5	60.00	60.10	53.00	2.65	2.64	2.65	35.20	43.70	3.29	3.32	3.37
6	50.00	50.30	48.20	0.94	0.73	0.69	34.80	37.90	0.90	0.99	0.98

EXPERIMENTAL RESULT

RESULT FILES : Ro2131 FH = 2.9 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
61	7.2	1.0703	1006.5	1.9872E-05	7.5902E+04	5457	11.8	1.1255	1005.5	1.9131E-05	8.4242E+04	9600	16.1	7529	468.54
71	11.9	1.0489	1007.0	2.0175E-05	7.3267E+04	8883	16.0	1.1216	1005.5	1.9180E-05	8.3741E+04	12905	21.8	10894	500.21
81	15.8	1.0250	1007.5	2.0527E-05	7.0372E+04	11510	21.2	1.1135	1005.7	1.9287E-05	8.2673E+04	16996	27.3	14253	522.00
91	19.9	1.0003	1008.2	2.0906E-05	6.7432E+04	14167	26.1	1.1039	1005.8	1.9413E-05	8.1431E+04	20738	33.1	17453	527.35
101	23.1	0.9779	1009.0	2.1261E-05	6.4823E+04	16081	31.6	1.0941	1006.0	1.9544E-05	8.0167E+04	24913	38.3	20497	535.53

EXPERIMENTAL RESULT

RESULT FILES : Ro2141 FH = 4.6 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
60	6.4	1.0752	1006.4	1.9803E-05	1.1935E+05	7627	11.7	1.1352	1005.3	1.9006E-05	8.5532E+04	9522	17.2	8575	497.53
71	10.2	1.0456	1007.0	2.0224E-05	1.1364E+05	11790	16.8	1.1238	1005.5	1.9153E-05	8.4018E+04	13592	23.4	12691	543.49
82	13.6	1.0185	1007.7	2.0626E-05	1.0854E+05	15307	23.0	1.1082	1005.8	1.9356E-05	8.1990E+04	18353	27.9	16830	604.30
92	16.2	0.9951	1008.4	2.0987E-05	1.0422E+05	17885	27.4	1.0992	1005.9	1.9475E-05	8.0827E+04	21695	33.4	19790	592.90
101	20.2	0.9746	1009.1	2.1316E-05	1.0050E+05	21855	31.5	1.0927	1006.0	1.9563E-05	7.9983E+04	24759	39.0	23307	597.74

EXPERIMENTAL RESULT

RESULT FILES : Ro2142 FH = 6.0 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
60	3.9	1.0688	1006.5	1.9892E-05	1.5391E+05	5979	10.8	1.1274	1005.5	1.9107E-05	8.4494E+04	8753	16.9	7366	434.99
71	7.4	1.0410	1007.1	2.0290E-05	1.4697E+05	11164	18.2	1.1138	1005.7	1.9283E-05	8.2710E+04	14624	21.7	12894	593.68
81	9.7	1.0131	1007.9	2.0707E-05	1.4015E+05	14195	24.2	1.1079	1005.8	1.9360E-05	8.1952E+04	19282	29.3	16738	571.84
92	12.2	0.9895	1008.6	2.1076E-05	1.3449E+05	17435	28.6	1.0941	1006.0	1.9545E-05	8.0159E+04	22577	33.5	20006	597.08
100	13.4	0.9663	1009.4	2.1451E-05	1.2905E+05	18741	35.7	1.0809	1006.3	1.9725E-05	7.8469E+04	27829	37.7	23285	617.13

EXPERIMENTAL RESULT

RESULT FILES : R02143 FH = 2.0 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
61	11.3	1.0809	1006.3	1.9724E-05	5.2051E+04	5836	7.6	1.1346	1005.3	1.9014E-05	8.5450E+04	6200	15.4	6018	391.28
71	16.3	1.0551	1006.8	2.0086E-05	4.9895E+04	8239	11.8	1.1288	1005.4	1.9089E-05	8.4680E+04	9588	21.8	8914	409.73
71	17.9	1.0555	1006.8	2.0081E-05	4.9921E+04	9050	10.9	1.1325	1005.4	1.9040E-05	8.5177E+04	8906	22.6	8978	397.43

EXPERIMENTAL RESULT

RESULT FILES : R02151 FH = 3.4 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
61	7.0	1.0709	1006.5	1.9862E-05	8.8362E+04	6198	10.2	1.1314	1005.4	1.9056E-05	8.5021E+04	8287	17.6	7243	412.54
72	10.0	1.0430	1007.1	2.0260E-05	8.4367E+04	8565	16.4	1.1156	1005.6	1.9259E-05	8.2946E+04	13179	21.9	10872	497.31
81	14.8	1.0208	1007.7	2.0590E-05	8.1252E+04	12478	20.0	1.1092	1005.7	1.9342E-05	8.2122E+04	15987	27.5	14232	517.38
91	18.0	0.9973	1008.3	2.0953E-05	7.8001E+04	14830	26.6	1.0976	1006.0	1.9498E-05	8.0611E+04	21015	32.2	17922	556.27
102	20.5	0.9747	1009.1	2.1313E-05	7.4947E+04	16553	30.1	1.0896	1006.1	1.9605E-05	7.9592E+04	23598	38.1	20075	526.90

EXPERIMENTAL RESULT

RESULT FILES : R02152 FH = 5.0 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
61	4.0	1.0654	1006.6	1.9939E-05	1.2947E+05	5212	10.0	1.1270	1005.5	1.9111E-05	8.4446E+04	8102	17.9	6657	371.16
71	7.0	1.0398	1007.2	2.0308E-05	1.2406E+05	8935	16.0	1.1173	1005.6	1.9237E-05	8.3173E+04	12890	23.3	10913	468.76
81	9.4	0.9593	1009.6	2.1568E-05	1.0777E+05	11043	22.0	1.1086	1005.8	1.9352E-05	8.2033E+04	17570	49.4	14307	289.48
92	13.0	0.9906	1008.5	2.1058E-05	1.1399E+05	15763	30.5	1.0919	1006.1	1.9574E-05	7.9884E+04	23999	32.3	19881	614.57
102	18.0	0.9693	1009.3	2.1402E-05	1.0973E+05	21379	35.2	1.0855	1006.2	1.9661E-05	7.9059E+04	27491	38.5	24435	635.15

EXPERIMENTAL RESULT

RESULT FILES : Ro2161 FH = 3.9 FC = 3.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
62	7.1	1.0698	1006.5	1.9878E-05	1.0169E+05	7255	12.1	1.1343	1005.3	1.9018E-05	8.5412E+04	9921	18.6	8588	460.56
71	10.5	1.0463	1007.0	2.0213E-05	9.7802E+04	10417	16.3	1.1232	1005.5	1.9161E-05	8.3940E+04	13205	23.0	11811	514.04
82	13.6	1.0199	1007.7	2.0603E-05	9.3531E+04	13192	22.1	1.1108	1005.7	1.9322E-05	8.2325E+04	17695	28.1	15443	548.99
92	17.7	0.9957	1008.4	2.0977E-05	8.9688E+04	16794	27.7	1.0959	1006.0	1.9519E-05	8.0402E+04	21896	32.2	19345	600.42
101	21.1	0.9765	1009.0	2.1284E-05	8.6687E+04	19620	31.9	1.0889	1006.1	1.9614E-05	7.9500E+04	25016	37.2	22318	600.70
91	16.4	0.9956	1008.4	2.0979E-05	8.9663E+04	15543	27.7	1.0946	1006.0	1.9537E-05	8.0230E+04	21859	31.8	18701	587.95
81	12.7	1.0243	1007.6	2.0538E-05	9.4225E+04	12394	20.4	1.1078	1005.8	1.9361E-05	8.1935E+04	16307	25.8	14351	555.56
71	8.8	1.0450	1007.0	2.0232E-05	9.7593E+04	8788	15.6	1.1170	1005.6	1.9241E-05	8.3127E+04	12565	21.6	10677	494.49
61	5.0	1.0686	1006.5	1.9894E-05	1.0149E+05	5072	9.1	1.1297	1005.4	1.9077E-05	8.4802E+04	7392	17.8	6232	350.51
52	0.4	1.0901	1006.1	1.9598E-05	1.0509E+05	432	1.0	1.1471	1005.2	1.8857E-05	8.7110E+04	844	16.1	638	39.67

EXPERIMENTAL RESULT

RESULT FILES : Ro2171 FH = 4.0 FC = 4.7 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
102	23.7	0.9784	1008.9	2.1253E-05	8.8447E+04	22483	22.4	1.1055	1005.8	1.9392E-05	1.2908E+05	28146	41.6	25314	609.07
91	19.6	1.0004	1008.2	2.0904E-05	9.1937E+04	18989	18.2	1.1124	1005.7	1.9301E-05	1.3048E+05	23085	35.6	21037	591.23
81	15.4	1.0253	1007.5	2.0522E-05	9.5983E+04	15315	13.9	1.1226	1005.5	1.9169E-05	1.3259E+05	17726	29.8	16521	553.63
71	10.2	1.0484	1007.0	2.0182E-05	9.9802E+04	10390	10.1	1.1264	1005.5	1.9119E-05	1.3339E+05	12991	23.3	11691	501.49
61	4.8	1.0732	1006.4	1.9831E-05	1.0397E+05	4976	5.2	1.1353	1005.3	1.9005E-05	1.3525E+05	6714	18.0	5845	324.65
51	1.1	1.0932	1006.0	1.9556E-05	1.0739E+05	1113	1.1	1.1465	1005.2	1.8865E-05	1.3760E+05	1489	15.0	1301	86.74

EXPERIMENTAL RESULT

RESULT FILES : Ro2172 FH = 4.0 FC = 5.6 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
101	23.1	0.9771	1009.0	2.1275E-05	8.8228E+04	21856	16.0	1.1185	1005.6	1.9221E-05	1.5549E+05	23971	45.7	22914	501.49
91	18.9	1.0002	1008.2	2.0907E-05	9.1910E+04	18290	14.0	1.1248	1005.5	1.9140E-05	1.5702E+05	21214	39.1	19752	505.30
80	16.1	1.0228	1007.6	2.0560E-05	9.5570E+04	15965	12.8	1.1259	1005.5	1.9126E-05	1.5730E+05	19371	31.6	17668	559.07
72	11.7	1.0433	1007.1	2.0257E-05	9.8945E+04	11824	9.3	1.1347	1005.3	1.9013E-05	1.5946E+05	14248	27.3	13036	478.37
61	6.2	1.0693	1006.5	1.9885E-05	1.0330E+05	6394	6.6	1.1408	1005.2	1.8936E-05	1.6097E+05	10160	20.7	8277	400.02
52	0.7	1.0926	1006.0	1.9564E-05	1.0729E+05	751	0.6	1.1546	1005.1	1.8764E-05	1.6441E+05	977	17.3	864	49.85

EXPERIMENTAL RESULT

RESULT FILES : R02191 FH = 4.0 FC = 3.9 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
102	21.4	0.9743	1009.1	2.1319E-05	8.8761E+04	20476	28.4	1.0993	1005.9	1.9475E-05	1.0670E+05	29677	41.2	25076	608.93
92	19.0	0.9970	1008.3	2.0957E-05	9.2398E+04	18552	24.5	1.1049	1005.8	1.9400E-05	1.0766E+05	25737	34.6	22145	640.50
81	14.6	1.0205	1007.7	2.0595E-05	9.6234E+04	14530	19.3	1.1115	1005.7	1.9313E-05	1.0879E+05	20406	28.3	17468	617.22
73	10.3	1.0438	1007.1	2.0249E-05	1.0012E+05	10475	13.6	1.1220	1005.5	1.9176E-05	1.1060E+05	14479	23.5	12477	530.01
61	3.6	1.0650	1006.6	1.9945E-05	1.0371E+05	3708	3.1	1.1415	1005.2	1.8928E-05	1.1400E+05	3311	22.2	3510	158.16
56	1.1	1.0776	1006.3	1.9769E-05	1.0587E+05	1162	1.2	1.1456	1005.2	1.8876E-05	1.1472E+05	1341	19.4	1251	64.40
52	0.0	1.0901	1006.1	1.9599E-05	1.0803E+05	0	0.4	1.1468	1005.2	1.8861E-05	1.1493E+05	435	16.0	217	13.59

EXPERIMENTAL RESULT

RESULT FILES : R02192 FH = 4.0 FC = 1.7 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
102	10.6	0.9592	1009.6	2.1568E-05	8.4971E+04	9788	45.2	1.0610	1006.7	2.0002E-05	4.2911E+04	19515	32.4	14651	452.14
91	8.6	0.9832	1008.8	2.1176E-05	8.8709E+04	8167	36.8	1.0781	1006.3	1.9762E-05	4.4134E+04	16140	29.5	12154	412.07
82	7.4	1.0086	1008.0	2.0776E-05	9.2757E+04	7197	30.6	1.0904	1006.1	1.9594E-05	4.5019E+04	13583	24.5	10390	424.33
72	4.6	1.0358	1007.3	2.0366E-05	9.7175E+04	4625	22.1	1.1056	1005.8	1.9390E-05	4.6127E+04	9941	20.3	7283	358.91
61	2.1	1.0621	1006.7	1.9986E-05	1.0154E+05	2186	13.3	1.1240	1005.5	1.9150E-05	4.7480E+04	6070	17.7	4128	233.07
51	0.0	1.0918	1006.1	1.9576E-05	1.0656E+05	0	1.3	1.1484	1005.1	1.8841E-05	4.9310E+04	615	15.9	307	19.29

EXPERIMENTAL RESULT

RESULT FILES : R02201 FH = 6.0 FC = 3.9 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
101	14.3	0.9664	1009.3	2.1449E-05	1.2907E+05	19987	29.3	1.0946	1006.0	1.9538E-05	1.0590E+05	30537	42.4	25262	595.34
92	13.4	0.9895	1008.6	2.1076E-05	1.3448E+05	19128	23.4	1.1065	1005.8	1.9379E-05	1.0793E+05	24624	37.6	21876	582.10
81	9.5	1.0116	1007.9	2.0731E-05	1.3978E+05	13804	19.8	1.1120	1005.7	1.9306E-05	1.0888E+05	20948	31.3	17376	555.52
71	6.1	1.0375	1007.2	2.0342E-05	1.4610E+05	9171	11.0	1.1320	1005.4	1.9048E-05	1.1234E+05	11864	28.4	10517	370.97
61	2.1	1.0633	1006.6	1.9970E-05	1.5252E+05	3156	4.3	1.1452	1005.2	1.8881E-05	1.1465E+05	4640	23.7	3898	164.33
50	1.2	1.0978	1005.9	1.9494E-05	1.6132E+05	1861	0.8	1.1539	1005.1	1.8773E-05	1.1618E+05	890	15.6	1376	88.15

EXPERIMENTAL RESULT

RESULT FILES : R02211 FH = 4.6 FC = 4.0 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
102	20.9	0.9720	1009.2	2.1357E-05	1.0005E+05	22576	27.3	1.0956	1006.0	1.9524E-05	1.0817E+05	29027	41.0	25801	629.54
92	16.7	0.9935	1008.5	2.1012E-05	1.0393E+05	18371	22.6	1.1026	1005.9	1.9430E-05	1.0938E+05	24208	35.2	21289	605.66
81	11.8	1.0173	1007.8	2.0643E-05	1.0833E+05	13284	14.3	1.1203	1005.6	1.9197E-05	1.1249E+05	15542	31.9	14413	451.36
70	6.6	1.0409	1007.1	2.0292E-05	1.1276E+05	7550	9.7	1.1308	1005.4	1.9063E-05	1.1435E+05	10612	27.0	9081	336.94
62	1.9	1.0605	1006.7	2.0009E-05	1.1651E+05	2253	3.2	1.1454	1005.2	1.8879E-05	1.1695E+05	3497	24.7	2875	116.58
51	0.6	1.0935	1006.0	1.9553E-05	1.2293E+05	721	0.5	1.1541	1005.1	1.8771E-05	1.1851E+05	571	16.9	646	38.14

EXPERIMENTAL RESULT

RESULT FILES : R02212 FH = 5.1 FC = 3.9 FILL RATIO = 70

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
102	19.0	0.9706	1009.2	2.1381E-05	1.1043E+05	22669	30.4	1.1047	1005.8	1.9402E-05	1.0655E+05	31620	44.0	27144	616.43
92	12.5	0.9886	1008.6	2.1090E-05	1.1402E+05	15189	25.7	1.1081	1005.8	1.9358E-05	1.0711E+05	26798	38.2	20994	549.43
82	8.9	1.0120	1007.9	2.0724E-05	1.1879E+05	11099	19.2	1.1181	1005.6	1.9227E-05	1.0882E+05	20200	32.9	15649	476.24
72	5.6	1.0364	1007.3	2.0357E-05	1.2385E+05	7158	13.0	1.1288	1005.4	1.9088E-05	1.1067E+05	13780	27.7	10469	377.51
62	1.1	1.0617	1006.7	1.9992E-05	1.2919E+05	1402	2.6	1.1505	1005.1	1.8815E-05	1.1443E+05	2811	25.7	2106	82.11
56	0.7	1.0750	1006.4	1.9806E-05	1.3204E+05	935	1.2	1.1539	1005.1	1.8772E-05	1.1503E+05	1277	22.5	1106	49.25

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EXPERIMENTAL RESULT

RESULT FILES : Ro3071 FH = 4.6 FC = 3.1 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	19.1	0.9699	1009.2	2.1392E-05	9.9207E+04	20456	31.1	1.0933	1006.0	1.9555E-05	8.2902E+04	25337	40.9	22896	559.51
90	15.0	0.9922	1008.5	2.1033E-05	1.0323E+05	16377	26.8	1.0959	1006.0	1.9520E-05	8.3246E+04	21864	33.4	19120	572.49
80	12.5	1.0169	1007.8	2.0650E-05	1.0776E+05	14024	21.5	1.1076	1005.8	1.9364E-05	8.4812E+04	17796	28.2	15910	563.56
70	9.1	1.0423	1007.1	2.0271E-05	1.1251E+05	10415	15.6	1.1166	1005.6	1.9246E-05	8.6026E+04	12994	22.4	11705	522.48
60	6.5	1.0685	1006.5	1.9896E-05	1.1751E+05	7662	11.1	1.1246	1005.5	1.9142E-05	8.7114E+04	9311	16.4	8486	517.97
55	4.5	1.0813	1006.3	1.9719E-05	1.1998E+05	5368	8.7	1.1294	1005.4	1.9081E-05	8.7759E+04	7304	13.8	6336	459.07
50	2.4	1.0951	1006.0	1.9530E-05	1.2270E+05	2885	5.5	1.1355	1005.3	1.9003E-05	8.8601E+04	4646	11.4	3766	330.69

EXPERIMENTAL RESULT

RESULT FILES : Ro3072 FH = 4.6 FC = 4.7 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.5	0.9662	1009.4	2.1452E-05	9.8555E+04	17635	18.3	1.1126	1005.7	1.9299E-05	1.2963E+05	23045	48.2	20340	422.25
90	15.0	0.9922	1008.5	2.1032E-05	1.0323E+05	16404	16.1	1.1182	1005.6	1.9225E-05	1.3079E+05	20354	40.2	18379	457.69
80	12.9	1.0187	1007.7	2.0622E-05	1.0809E+05	14535	14.0	1.1238	1005.5	1.9152E-05	1.3194E+05	17740	32.4	16138	497.38
70	7.2	1.0400	1007.2	2.0305E-05	1.1207E+05	8202	11.1	1.1329	1005.4	1.9036E-05	1.3382E+05	14258	27.8	11230	403.85
60	7.1	1.0711	1006.5	1.9859E-05	1.1802E+05	8413	8.6	1.1389	1005.3	1.8959E-05	1.3508E+05	11106	19.6	9759	497.65
55	5.0	1.0837	1006.2	1.9686E-05	1.2045E+05	5926	6.9	1.1437	1005.2	1.8900E-05	1.3606E+05	8879	17.1	7403	433.82
50	3.5	1.0983	1005.9	1.9487E-05	1.2333E+05	4197	4.8	1.1482	1005.1	1.8843E-05	1.3701E+05	6270	13.9	5233	375.51

EXPERIMENTAL RESULT

RESULT FILES : Ro3061 FH = 4.6 FC = 4.0 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	15.9	0.9668	1009.3	2.1443E-05	9.8653E+04	17026	17.1	1.1193	1005.6	1.9210E-05	1.1123E+05	18350	49.9	17688	354.58
90	15.8	0.9931	1008.5	2.1019E-05	1.0339E+05	17304	22.3	1.1098	1005.7	1.9335E-05	1.0958E+05	23748	37.4	20526	549.34
80	12.7	1.0180	1007.7	2.0633E-05	1.0796E+05	14213	18.0	1.1183	1005.6	1.9223E-05	1.1106E+05	19364	31.1	16789	540.33
70	9.3	1.0418	1007.1	2.0279E-05	1.1241E+05	10720	13.5	1.1298	1005.4	1.9076E-05	1.1306E+05	14586	26.4	12653	480.15
60	6.7	1.0701	1006.5	1.9874E-05	1.1781E+05	7865	9.5	1.1384	1005.3	1.8966E-05	1.1458E+05	10411	19.8	9138	462.39
55	4.8	1.0853	1006.2	1.9663E-05	1.2078E+05	5701	8.1	1.1413	1005.2	1.8929E-05	1.1511E+05	8896	15.9	7298	459.20
50	3.4	1.0976	1006.0	1.9498E-05	1.2318E+05	4135	6.0	1.1479	1005.1	1.8846E-05	1.1628E+05	6571	14.1	5353	380.56

EXPERIMENTAL RESULT

RESULT FILES : R03081 FH = 4.6 FC = 5.6 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.4	0.9676	1009.3	2.1429E-05	9.8807E+04	17529	14.4	1.1202	1005.6	1.9199E-05	1.5591E+05	21626	49.8	19578	393.08
90	16.7	0.9940	1008.4	2.1004E-05	1.0356E+05	18288	14.0	1.1198	1005.6	1.9204E-05	1.5581E+05	21081	39.9	19684	492.82
80	14.6	1.0196	1007.7	2.0608E-05	1.0826E+05	16375	12.0	1.1267	1005.5	1.9115E-05	1.5749E+05	18103	32.9	17239	523.68
70	11.3	1.0443	1007.1	2.0243E-05	1.1288E+05	13057	9.7	1.1267	1005.5	1.9115E-05	1.5750E+05	14743	24.7	13900	561.69
60	8.1	1.0711	1006.5	1.9860E-05	1.1802E+05	9578	7.0	1.1331	1005.4	1.9034E-05	1.5907E+05	10690	18.0	10134	562.31
55	5.4	1.0844	1006.2	1.9676E-05	1.2060E+05	6447	6.1	1.1341	1005.3	1.9021E-05	1.5932E+05	9238	14.3	7842	549.76
50	3.3	1.0984	1005.9	1.9487E-05	1.2334E+05	3990	3.4	1.1389	1005.3	1.8960E-05	1.6051E+05	5249	11.4	4619	404.01

EXPERIMENTAL RESULT

RESULT FILES : R03082 FH = 5.0 FC = 3.9 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	15.8	0.9666	1009.3	2.1445E-05	1.0748E+05	18438	24.9	1.1011	1005.9	1.9450E-05	1.0594E+05	25800	44.6	22119	496.22
90	14.0	0.9917	1008.5	2.1040E-05	1.1240E+05	16718	22.7	1.1042	1005.8	1.9410E-05	1.0646E+05	23628	36.1	20173	558.10
80	11.2	1.0156	1007.8	2.0669E-05	1.1717E+05	13699	18.2	1.1145	1005.7	1.9274E-05	1.0820E+05	19130	30.7	16414	534.10
70	8.1	1.0399	1007.2	2.0306E-05	1.2212E+05	10141	14.7	1.1207	1005.6	1.9192E-05	1.0928E+05	15485	24.3	12813	526.20
60	5.7	1.0678	1006.5	1.9907E-05	1.2791E+05	7245	10.1	1.1329	1005.4	1.9036E-05	1.1137E+05	10777	18.9	9011	476.00
55	3.7	1.0815	1006.3	1.9716E-05	1.3081E+05	4749	7.3	1.1410	1005.2	1.8934E-05	1.1277E+05	7861	16.9	6305	372.16
50	2.4	1.0961	1006.0	1.9517E-05	1.3393E+05	3126	4.7	1.1469	1005.2	1.8860E-05	1.1380E+05	5114	14.2	4120	289.95

EXPERIMENTAL RESULT

RESULT FILES : R03083 FH = 5.0 FC = 3.0 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.1	0.9667	1009.3	2.1444E-05	1.0750E+05	18753	32.6	1.0958	1006.0	1.9521E-05	8.0385E+04	25741	42.6	22247	522.18
90	12.3	0.9883	1008.6	2.1094E-05	1.1172E+05	14672	29.5	1.0983	1005.9	1.9487E-05	8.0709E+04	23367	35.2	19019	540.92
80	9.2	1.0127	1007.9	2.0713E-05	1.1659E+05	11245	23.8	1.1099	1005.7	1.9334E-05	8.2209E+04	19047	30.0	15146	505.28
70	7.8	1.0385	1007.2	2.0327E-05	1.2182E+05	9679	17.9	1.1244	1005.5	1.9145E-05	8.4099E+04	14455	25.7	12067	470.25
60	4.5	1.0662	1006.6	1.9928E-05	1.2759E+05	5771	12.8	1.1305	1005.4	1.9066E-05	8.4910E+04	10446	18.5	8109	437.93
55	3.5	1.0818	1006.2	1.9711E-05	1.3088E+05	4496	9.6	1.1383	1005.3	1.8968E-05	8.5934E+04	7860	16.0	6178	386.73
50	2.4	1.0959	1006.0	1.9520E-05	1.3387E+05	3179	7.1	1.1436	1005.2	1.8901E-05	8.6646E+04	5839	13.3	4509	338.82

EXPERIMENTAL RESULT

RESULT FILES : R03091 FH = 5.0 FC = 5.6 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	11.8	0.9608	1009.6	2.1542E-05	1.0635E+05	13634	11.2	1.1423	1005.2	1.8917E-05	1.6135E+05	17178	58.5	15406	263.33
90	11.9	0.9885	1008.6	2.1091E-05	1.1176E+05	14131	10.5	1.1399	1005.3	1.8947E-05	1.6076E+05	16071	47.5	15101	317.88
80	12.4	1.0173	1007.8	2.0644E-05	1.1751E+05	15129	11.0	1.1357	1005.3	1.9000E-05	1.5972E+05	16739	36.2	15934	439.92
70	9.1	1.0404	1007.2	2.0299E-05	1.2223E+05	11310	8.5	1.1392	1005.3	1.8956E-05	1.6059E+05	12943	29.4	12127	411.86
60	6.2	1.0677	1006.5	1.9908E-05	1.2789E+05	7945	6.3	1.1406	1005.3	1.8939E-05	1.6092E+05	9697	21.1	8821	417.40
55	4.5	1.0836	1006.2	1.9688E-05	1.3124E+05	5841	4.9	1.1417	1005.2	1.8924E-05	1.6120E+05	7538	16.6	6690	403.12
50	2.7	1.0956	1006.0	1.9524E-05	1.3381E+05	3489	3.1	1.1436	1005.2	1.8900E-05	1.6168E+05	4732	13.5	4111	303.81

EXPERIMENTAL RESULT

RESULT FILES : R03092 FH = 5.0 FC = 4.7 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.6	0.9685	1009.3	2.1415E-05	1.0784E+05	19385	18.7	1.1101	1005.7	1.9331E-05	1.2913E+05	23505	46.6	21445	460.07
90	15.2	0.9923	1008.5	2.1031E-05	1.1251E+05	18180	17.8	1.1103	1005.7	1.9329E-05	1.2916E+05	22383	37.9	20282	535.81
80	11.2	1.0164	1007.8	2.0657E-05	1.1733E+05	13629	15.3	1.1186	1005.6	1.9220E-05	1.3087E+05	19316	31.7	16473	519.01
70	8.5	1.0405	1007.2	2.0298E-05	1.2224E+05	10606	10.2	1.1292	1005.4	1.9083E-05	1.3306E+05	12961	26.7	11784	441.83
60	5.7	1.0671	1006.6	1.9915E-05	1.2777E+05	7251	7.5	1.1340	1005.3	1.9022E-05	1.3405E+05	9649	19.5	8450	433.55
55	4.3	1.0820	1006.2	1.9710E-05	1.3090E+05	5621	6.0	1.1349	1005.3	1.9010E-05	1.3424E+05	7734	15.2	6678	439.18
50	1.5	1.0933	1006.0	1.9555E-05	1.3332E+05	1961	2.2	1.1452	1005.2	1.8881E-05	1.3639E+05	2900	14.6	2430	166.14

EXPERIMENTAL RESULT

RESULT FILES : R03101 FH = 3.5 FC = 3.9 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	20.5	0.9726	1009.1	2.1348E-05	7.5678E+04	16743	15.4	1.1309	1005.4	1.9062E-05	1.1102E+05	16419	50.9	16581	323.95
90	19.1	0.9980	1008.3	2.0941E-05	7.9164E+04	15978	16.0	1.1302	1005.4	1.9071E-05	1.1090E+05	17035	41.4	16507	398.61
80	15.9	1.0222	1007.6	2.0569E-05	8.2551E+04	13629	14.4	1.1288	1005.4	1.9088E-05	1.1067E+05	15260	32.6	14444	442.49
70	11.9	1.0463	1007.0	2.0213E-05	8.5982E+04	10374	11.0	1.1353	1005.3	1.9005E-05	1.1179E+05	11741	26.5	11058	417.69
60	8.6	1.0722	1006.4	1.9844E-05	8.9757E+04	7725	8.3	1.1381	1005.3	1.8970E-05	1.1226E+05	8883	19.0	8304	436.13
55	6.0	1.0857	1006.2	1.9658E-05	9.1742E+04	5433	5.9	1.1409	1005.2	1.8934E-05	1.1276E+05	6373	15.7	5903	375.10
50	4.2	1.1002	1005.9	1.9462E-05	9.3909E+04	3845	3.7	1.1466	1005.2	1.8864E-05	1.1374E+05	4002	13.0	3924	302.95

EXPERIMENTAL RESULT

RESULT FILES : R03102 FH = 3.5 FC = 3.0 FILL RATIO = 40

TCH	DTH	DEN _h	CPh	VISH	REh	Oh	DTc	DEN _c	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	21.9	0.9761	1009.0	2.1291E-05	7.6150E+04	17943	28.7	1.1004	1005.9	1.9460E-05	8.0975E+04	22771	40.9	20357	498.08
90	17.3	0.9949	1008.4	2.0990E-05	7.8738E+04	14433	24.0	1.1058	1005.8	1.9388E-05	8.1671E+04	19122	35.5	16777	472.22
80	13.2	1.0182	1007.7	2.0629E-05	8.1991E+04	11273	20.4	1.1159	1005.6	1.9255E-05	8.2989E+04	16407	30.2	13840	457.77
70	10.4	1.0427	1007.1	2.0265E-05	8.5472E+04	9028	14.7	1.1240	1005.5	1.9150E-05	8.4050E+04	11866	24.4	10447	427.66
60	7.6	1.0718	1006.5	1.9850E-05	8.9696E+04	6778	10.4	1.1430	1005.2	1.8909E-05	8.6558E+04	8595	20.5	7687	375.70
55	5.5	1.0846	1006.2	1.9674E-05	9.1572E+04	4984	8.7	1.1458	1005.2	1.8873E-05	8.6942E+04	7173	17.4	6078	350.26
50	3.9	1.0973	1006.0	1.9501E-05	9.3473E+04	3558	6.3	1.1497	1005.1	1.8825E-05	8.7452E+04	5174	14.6	4366	299.02

EXPERIMENTAL RESULT

RESULT FILES : R03121 FH = 3.5 FC = 5.5 FILL RATIO = 40

TCH	DTH	DEN _h	CPh	VISH	REh	Oh	DTc	DEN _c	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	21.3	0.9722	1009.1	2.1354E-05	7.5629E+04	17329	13.1	1.1196	1005.6	1.9207E-05	1.5425E+05	19527	47.8	18428	385.56
90	19.6	0.9987	1008.3	2.0930E-05	7.9261E+04	16406	12.5	1.1207	1005.6	1.9192E-05	1.5451E+05	18637	38.4	17522	455.91
80	17.0	1.0226	1007.6	2.0563E-05	8.2606E+04	14543	11.2	1.1231	1005.5	1.9162E-05	1.5509E+05	16688	30.8	15615	506.55
70	12.3	1.0454	1007.0	2.0226E-05	8.5854E+04	10737	8.1	1.1305	1005.4	1.9067E-05	1.5689E+05	12110	25.4	11423	450.18
60	8.6	1.0722	1006.4	1.9844E-05	8.9753E+04	7711	6.0	1.1328	1005.4	1.9037E-05	1.5745E+05	9032	17.6	8371	476.48
55	6.4	1.0855	1006.2	1.9662E-05	9.1705E+04	5840	4.7	1.1351	1005.3	1.9008E-05	1.5801E+05	7137	14.2	6488	456.90
50	3.5	1.0988	1005.9	1.9481E-05	9.3692E+04	3248	2.8	1.1382	1005.3	1.8968E-05	1.5878E+05	4251	11.1	3749	337.08

EXPERIMENTAL RESULT

RESULT FILES : R03122 FH = 3.5 FC = 4.7 FILL RATIO = 40

TCH	DTH	DEN _h	CPh	VISH	REh	Oh	DTc	DEN _c	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	22.6	0.9753	1009.0	2.1304E-05	7.6046E+04	18444	16.2	1.1145	1005.7	1.9274E-05	1.3002E+05	20446	45.2	19445	429.90
90	18.8	0.9979	1008.3	2.0943E-05	7.9151E+04	15751	15.5	1.1147	1005.7	1.9271E-05	1.3007E+05	19523	37.1	17637	475.33
80	15.4	1.0203	1007.7	2.0598E-05	8.2285E+04	13193	13.3	1.1210	1005.6	1.9188E-05	1.3137E+05	16881	31.1	15037	483.44
70	11.1	1.0442	1007.1	2.0244E-05	8.5679E+04	9683	9.2	1.1325	1005.4	1.9042E-05	1.3373E+05	11743	26.4	10713	406.43
60	7.8	1.0712	1006.5	1.9859E-05	8.9598E+04	6942	6.0	1.1419	1005.2	1.8922E-05	1.3569E+05	7781	20.4	7362	360.93
55	5.6	1.0845	1006.2	1.9675E-05	9.1557E+04	5109	4.8	1.1449	1005.2	1.8884E-05	1.3633E+05	6207	17.2	5658	329.34
50	3.4	1.0978	1005.9	1.9494E-05	9.3548E+04	3095	2.9	1.1507	1005.1	1.8813E-05	1.3753E+05	3788	14.8	3441	233.24

EXPERIMENTAL RESULT

RESULT FILES : R03123 FH = 3.5 FC = 3.0 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	22.1	0.9733	1009.1	2.1337E-05	7.5770E+04	17987	31.2	1.0958	1006.0	1.9521E-05	8.0382E+04	24646	40.5	21316	526.48
90	16.1	0.9930	1008.5	2.1020E-05	7.8473E+04	13427	26.0	1.1024	1005.9	1.9433E-05	8.1234E+04	20616	35.1	17022	484.72
80	13.0	1.0168	1007.8	2.0652E-05	8.1783E+04	11076	20.9	1.1126	1005.7	1.9298E-05	8.2559E+04	16741	29.8	13909	467.19
70	10.0	1.0438	1007.1	2.0250E-05	8.5619E+04	8745	16.6	1.1181	1005.6	1.9226E-05	8.3282E+04	13328	22.4	11036	493.66
60	5.8	1.0681	1006.5	1.9902E-05	8.9146E+04	5223	11.6	1.1265	1005.5	1.9121E-05	8.4347E+04	9408	16.9	7316	432.62
55	3.9	1.0822	1006.2	1.9706E-05	9.1221E+04	3502	8.4	1.1350	1005.3	1.9009E-05	8.5505E+04	6831	15.1	5167	342.82
50	2.3	1.0956	1006.0	1.9524E-05	9.3214E+04	2072	6.0	1.1387	1005.3	1.8963E-05	8.5986E+04	4901	12.1	3487	288.55

EXPERIMENTAL RESULT

RESULT FILES : R03131 FH = 3.5 FC = 1.9 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	19.6	0.9719	1009.2	2.1359E-05	7.5586E+04	15993	35.9	1.0869	1006.2	1.9642E-05	5.0122E+04	17789	37.9	16891	445.15
90	15.0	0.9928	1008.5	2.1023E-05	7.8443E+04	12460	29.6	1.0959	1006.0	1.9520E-05	5.0856E+04	14756	33.0	13608	412.38
80	11.9	1.0169	1007.8	2.0650E-05	8.1796E+04	10110	22.7	1.1066	1005.8	1.9377E-05	5.1730E+04	11459	27.8	10785	387.33
70	8.4	1.0404	1007.2	2.0299E-05	8.5140E+04	7345	18.2	1.1120	1005.7	1.9306E-05	5.2174E+04	9236	21.5	8291	385.76
60	5.1	1.0659	1006.6	1.9933E-05	8.8826E+04	4536	11.3	1.1242	1005.5	1.9147E-05	5.3187E+04	5797	17.0	5167	303.85
55	3.6	1.0814	1006.3	1.9717E-05	9.1110E+04	3271	9.0	1.1270	1005.5	1.9111E-05	5.3417E+04	4611	13.0	3941	302.83
50	2.5	1.0950	1006.0	1.9533E-05	9.3120E+04	2280	5.7	1.1322	1005.4	1.9045E-05	5.3851E+04	2942	10.5	2611	248.23

EXPERIMENTAL RESULT

RESULT FILES : R03132 FH = 2.0 FC = 1.9 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	27.4	0.9812	1008.8	2.1208E-05	4.4552E+04	13044	27.9	1.0906	1006.1	1.9591E-05	5.0426E+04	13854	36.2	13449	371.78
90	22.6	1.0029	1008.2	2.0865E-05	4.6286E+04	11001	22.1	1.1001	1005.9	1.9464E-05	5.1197E+04	11080	31.1	11041	354.47
80	18.4	1.0261	1007.5	2.0511E-05	4.8173E+04	9137	19.5	1.1032	1005.9	1.9422E-05	5.1454E+04	9788	24.1	9463	392.98
70	13.4	1.0499	1006.9	2.0161E-05	5.0145E+04	6811	14.2	1.1129	1005.7	1.9295E-05	5.2244E+04	7174	19.0	6993	367.45
60	8.4	1.0729	1006.4	1.9835E-05	5.2082E+04	4362	8.7	1.1264	1005.5	1.9119E-05	5.3366E+04	4476	15.6	4419	282.51
55	6.3	1.0846	1006.2	1.9673E-05	5.3087E+04	3327	7.4	1.1263	1005.5	1.9120E-05	5.3362E+04	3771	12.1	3549	294.53
50	3.8	1.0985	1005.9	1.9485E-05	5.4289E+04	2013	4.6	1.1361	1005.3	1.8995E-05	5.4180E+04	2355	10.6	2184	205.46

EXPERIMENTAL RESULT

RESULT FILES : R03133 FH = 2.0 FC = 4.7 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	36.3	0.9949	1008.4	2.0991E-05	4.5638E+04	17521	12.3	1.1243	1005.5	1.9146E-05	1.3205E+05	15603	39.7	16562	416.93
90	29.1	1.0128	1007.9	2.0712E-05	4.7085E+04	14294	11.9	1.1253	1005.5	1.9134E-05	1.3224E+05	15197	34.2	14746	431.53
80	23.4	1.0342	1007.3	2.0390E-05	4.8841E+04	11720	9.9	1.1290	1005.4	1.9085E-05	1.3302E+05	12584	28.1	12152	431.69
70	17.6	1.0546	1006.8	2.0094E-05	5.0535E+04	8975	7.4	1.1368	1005.3	1.8987E-05	1.3462E+05	9528	23.9	9252	387.82
60	12.7	1.0789	1006.3	1.9751E-05	5.2600E+04	6637	5.0	1.1438	1005.2	1.8898E-05	1.3610E+05	6445	18.3	6541	357.65
55	8.6	1.0905	1006.1	1.9593E-05	5.3592E+04	4561	4.6	1.1427	1005.2	1.8912E-05	1.3587E+05	5906	14.7	5234	355.97
50	6.0	1.1033	1005.8	1.9421E-05	5.4706E+04	3195	2.7	1.1477	1005.2	1.8850E-05	1.3691E+05	3506	12.3	3351	272.73

EXPERIMENTAL RESULT

RESULT FILES : R03141 FH = 2.0 FC = 3.9 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	34.8	0.9912	1008.5	2.1048E-05	4.5346E+04	16770	17.1	1.1168	1005.6	1.9244E-05	1.0860E+05	17999	39.5	17385	440.65
90	29.5	1.0129	1007.9	2.0711E-05	4.7090E+04	14512	14.4	1.1209	1005.6	1.9190E-05	1.0930E+05	15184	33.1	14848	449.07
80	22.7	1.0330	1007.3	2.0408E-05	4.8738E+04	11395	13.5	1.1179	1005.6	1.9229E-05	1.0879E+05	14172	25.7	12784	497.17
70	16.3	1.0529	1006.9	2.0118E-05	5.0393E+04	8311	9.6	1.1255	1005.5	1.9131E-05	1.1009E+05	10210	21.5	9260	431.39
60	9.5	1.0743	1006.4	1.9815E-05	5.2208E+04	4946	6.3	1.1312	1005.4	1.9058E-05	1.1107E+05	6677	16.5	5811	353.08
55	6.2	1.0847	1006.2	1.9672E-05	5.3091E+04	3237	4.2	1.1346	1005.3	1.9014E-05	1.1166E+05	4477	14.3	3857	269.71
50	2.0	1.0938	1006.0	1.9548E-05	5.3878E+04	1056	0.1	1.1455	1005.2	1.8877E-05	1.1356E+05	75	14.5	566	38.89

EXPERIMENTAL RESULT

RESULT FILES : R03142 FH = 2.0 FC = 5.5 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	36.7	0.9935	1008.4	2.1011E-05	4.5532E+04	17715	12.4	1.1180	1005.6	1.9227E-05	1.5386E+05	18468	38.4	18092	471.69
90	29.8	1.0121	1007.9	2.0724E-05	4.7025E+04	14621	10.7	1.1201	1005.6	1.9201E-05	1.5435E+05	15903	32.8	15262	465.94
80	23.7	1.0341	1007.3	2.0392E-05	4.8830E+04	11874	8.2	1.1277	1005.4	1.9102E-05	1.5622E+05	12281	27.6	12077	436.80
70	17.1	1.0557	1006.8	2.0077E-05	5.0634E+04	8755	7.6	1.1288	1005.4	1.9088E-05	1.5649E+05	11367	21.3	10061	472.20
60	10.1	1.0747	1006.4	1.9810E-05	5.2238E+04	5267	3.6	1.1419	1005.2	1.8922E-05	1.5969E+05	5488	19.2	5377	280.76
55	7.2	1.0861	1006.2	1.9653E-05	5.3215E+04	3800	2.1	1.1466	1005.2	1.8863E-05	1.6084E+05	3171	17.0	3486	204.80
50	1.6	1.0941	1006.0	1.9544E-05	5.3908E+04	849	0.0	1.1508	1005.1	1.8811E-05	1.6188E+05	64	15.9	456	28.77

EXPERIMENTAL RESULT

RESULT FILES : R03143 FH = 2.0 FC = 3.0 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	32.4	0.9878	1008.6	2.1102E-05	4.5077E+04	15543	24.3	1.1042	1005.8	1.9409E-05	8.1465E+04	19351	37.6	17447	464.18
90	26.1	1.0079	1008.0	2.0788E-05	4.6685E+04	12748	20.2	1.1128	1005.7	1.9295E-05	8.2590E+04	16156	33.0	14452	437.92
80	20.4	1.0286	1007.5	2.0474E-05	4.8375E+04	10182	16.4	1.1201	1005.6	1.9200E-05	8.3542E+04	13255	28.0	11718	418.05
70	15.6	1.0515	1006.9	2.0138E-05	5.0279E+04	7959	13.3	1.1236	1005.5	1.9155E-05	8.4003E+04	10729	21.5	9344	433.78
60	9.5	1.0746	1006.4	1.9811E-05	5.2231E+04	4926	8.2	1.1371	1005.3	1.8983E-05	8.5778E+04	6740	18.0	5833	323.26
55	5.5	1.0853	1006.2	1.9664E-05	5.3144E+04	2908	5.8	1.1412	1005.2	1.8931E-05	8.6320E+04	4780	15.9	3844	241.38
50	2.6	1.0952	1006.0	1.9530E-05	5.3996E+04	1378	0.8	1.1535	1005.1	1.8777E-05	8.7970E+04	663	16.3	1020	62.66

EXPERIMENTAL RESULT

RESULT FILES : R03151 FH = 6.0 FC = 3.9 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	13.3	0.9619	1009.5	2.1523E-05	1.2881E+05	18545	24.8	1.1234	1005.5	1.9158E-05	1.0973E+05	26222	52.7	22384	425.08
90	11.6	0.9867	1008.7	2.1120E-05	1.3466E+05	16604	23.1	1.1236	1005.5	1.9156E-05	1.0976E+05	24421	43.4	20512	472.57
80	8.7	1.0114	1007.9	2.0734E-05	1.4059E+05	12782	18.7	1.1275	1005.4	1.9105E-05	1.1044E+05	19840	35.8	16311	456.07
70	5.9	1.0368	1007.2	2.0351E-05	1.4684E+05	8878	13.5	1.1377	1005.3	1.8975E-05	1.1220E+05	14448	30.0	11663	388.25
60	4.2	1.0657	1006.6	1.9936E-05	1.5408E+05	6454	9.8	1.1434	1005.2	1.8903E-05	1.1319E+05	10536	22.4	8495	379.29
55	2.9	1.0786	1006.3	1.9756E-05	1.5736E+05	4537	7.8	1.1446	1005.2	1.8888E-05	1.1340E+05	8360	18.8	6448	343.70
50	1.0	1.0921	1006.1	1.9572E-05	1.6082E+05	1539	2.1	1.1556	1005.0	1.8752E-05	1.1532E+05	2291	17.8	1915	107.86

EXPERIMENTAL RESULT

RESULT FILES : R03152 FH = 6.0 FC = 5.5 FILL RATIO = 40

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	12.4	0.9613	1009.5	2.1534E-05	1.2867E+05	17299	14.5	1.1272	1005.5	1.9108E-05	1.5610E+05	21684	54.2	19491	359.77
90	10.3	0.9852	1008.7	2.1145E-05	1.3429E+05	14684	13.5	1.1283	1005.4	1.9095E-05	1.5636E+05	20201	45.5	17443	383.14
80	9.8	1.0127	1007.9	2.0713E-05	1.4092E+05	14457	12.1	1.1297	1005.4	1.9076E-05	1.5670E+05	18153	36.1	16305	451.24
70	7.3	1.0389	1007.2	2.0321E-05	1.4736E+05	10965	9.9	1.1301	1005.4	1.9072E-05	1.5679E+05	14843	27.4	12904	470.83
60	5.2	1.0676	1006.5	1.9908E-05	1.5457E+05	8009	7.6	1.1339	1005.4	1.9024E-05	1.5772E+05	11449	19.3	9729	504.26
55	2.9	1.0810	1006.3	1.9723E-05	1.5797E+05	4611	4.8	1.1430	1005.2	1.8908E-05	1.5995E+05	7334	17.7	5972	337.42
50	0.1	1.0933	1006.0	1.9555E-05	1.6114E+05	168	0.7	1.1495	1005.1	1.8827E-05	1.6156E+05	1113	15.8	1113	70.55

EXPERIMENTAL RESULT

RESULT FILES : R03153 FH = 6.0 FC = 3.0 FILL RATIO = 40

TCH c	DTH c	DENh kg/m ³	CPh J/kgc	VISH kg/ms	REh	Qh w	DTc c	DENc kg/m ³	CPc J/kgc	VISc kg/ms	REc	Qc w	TLM c	Qav w	UA w/c
100	12.0	0.9613	1009.5	2.1534E-05	1.2866E+05	16716	35.7	1.0792	1006.3	1.9747E-05	7.8265E+04	27766	39.1	22241	569.21
90	9.0	0.9841	1008.8	2.1162E-05	1.3403E+05	12938	29.0	1.0898	1006.1	1.9602E-05	7.9614E+04	22738	33.9	17838	525.78
80	7.1	1.0096	1008.0	2.0761E-05	1.4017E+05	10400	22.9	1.1039	1005.8	1.9413E-05	8.1433E+04	18189	29.2	14295	489.41
70	4.9	1.0357	1007.3	2.0368E-05	1.4656E+05	7419	16.9	1.1189	1005.6	1.9217E-05	8.3376E+04	13652	24.9	10535	423.48
60	3.5	1.0647	1006.6	1.9950E-05	1.5382E+05	5451	11.5	1.1327	1005.4	1.9039E-05	8.5192E+04	9347	19.6	7399	376.78
55	2.3	1.0790	1006.3	1.9751E-05	1.5745E+05	3631	8.3	1.1403	1005.3	1.8942E-05	8.6207E+04	6794	17.4	5212	299.00
50	0.2	1.0908	1006.1	1.9589E-05	1.6050E+05	375	3.1	1.1511	1005.1	1.8807E-05	8.7651E+04	2535	16.9	2535	149.90

EXPERIMENTAL RESULT

RESULT FILES : R03161 FH = 6.0 FC = 4.7 FILL RATIO = 40

TCH c	DTH c	DENh kg/m ³	CPh J/kgc	VISH kg/ms	REh	Qh w	DTc c	DENc kg/m ³	CPc J/kgc	VISc kg/ms	REc	Qc w	TLM c	Qav w	UA w/c
100	10.7	0.9597	1009.6	2.1561E-05	1.2829E+05	14990	17.0	1.1353	1005.3	1.9006E-05	1.3431E+05	21862	57.0	18426	323.52
90	10.8	0.9861	1008.7	2.1129E-05	1.3452E+05	15424	16.1	1.1344	1005.3	1.9017E-05	1.3413E+05	20669	46.8	18047	385.54
80	9.0	1.0116	1007.9	2.0731E-05	1.4064E+05	13289	14.4	1.1349	1005.3	1.9010E-05	1.3424E+05	18496	37.9	15893	419.27
70	7.4	1.0392	1007.2	2.0317E-05	1.4742E+05	11202	10.7	1.1407	1005.2	1.8937E-05	1.3545E+05	13741	30.2	12471	412.56
60	4.8	1.0670	1006.6	1.9917E-05	1.5442E+05	7436	7.5	1.1444	1005.2	1.8890E-05	1.3623E+05	9637	22.3	8536	381.99
55	3.6	1.0801	1006.3	1.9736E-05	1.5773E+05	5605	6.0	1.1453	1005.2	1.8880E-05	1.3641E+05	7750	18.6	6677	359.16
50	0.8	1.0920	1006.1	1.9572E-05	1.6082E+05	1203	2.7	1.1504	1005.1	1.8816E-05	1.3748E+05	3459	16.4	2331	142.39

EXPERIMENTAL RESULT

RESULT FILES : R03162 FH = 6.0 FC = 1.9 FILL RATIO = 40

TCH c	DTH c	DENh kg/m ³	CPh J/kgc	VISH kg/ms	REh	Qh w	DTc c	DENc kg/m ³	CPc J/kgc	VISc kg/ms	REc	Qc w	TLM c	Qav w	UA w/c
100	8.1	0.9567	1009.7	2.1610E-05	1.2761E+05	11215	40.6	1.0758	1006.4	1.9794E-05	4.9233E+04	19899	38.7	15557	401.66
90	5.7	0.9790	1008.9	2.1244E-05	1.3282E+05	8129	34.1	1.0859	1006.2	1.9655E-05	5.0047E+04	16860	33.6	12494	371.39
80	3.6	1.0053	1008.1	2.0828E-05	1.3911E+05	5322	26.7	1.0981	1005.9	1.9491E-05	5.1031E+04	13355	28.2	9338	331.42
70	2.7	1.0323	1007.4	2.0418E-05	1.4573E+05	4090	20.0	1.1110	1005.7	1.9319E-05	5.2093E+04	10118	23.2	7104	306.50
60	1.8	1.0620	1006.7	1.9988E-05	1.5313E+05	2832	13.5	1.1221	1005.5	1.9174E-05	5.3010E+04	6907	17.2	4869	283.66
55	0.8	1.0759	1006.4	1.9793E-05	1.5666E+05	1313	9.4	1.1306	1005.4	1.9066E-05	5.3713E+04	4849	15.5	3081	199.08
50	0.2	1.0907	1006.1	1.9590E-05	1.6047E+05	245	2.3	1.1436	1005.2	1.8901E-05	5.4805E+04	1203	14.9	1203	80.53

EXPERIMENTAL RESULT

RESULT FILES : R03171 FH = 4.6 FC = 3.9 FILL RATIO = 40

TCH	DTH	DEN _h	CPh	VIS _h	REh	Oh	DTc	DEN _c	CPc	VIS _c	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.2	0.9658	1009.4	2.1460E-05	1.0027E+05	17576	24.8	1.1162	1005.6	1.9251E-05	1.0851E+05	26074	49.3	21825	442.97
90	16.1	0.9924	1008.5	2.1029E-05	1.0515E+05	17972	22.1	1.1214	1005.5	1.9184E-05	1.0939E+05	23333	40.9	20652	504.83
80	11.3	1.0157	1007.8	2.0667E-05	1.0950E+05	12904	18.2	1.1248	1005.5	1.9140E-05	1.0998E+05	19267	33.6	16086	478.44
70	8.7	1.0408	1007.1	2.0293E-05	1.1427E+05	10161	13.7	1.1278	1005.4	1.9101E-05	1.1050E+05	14563	26.1	12362	473.52
60	5.7	1.0678	1006.5	1.9906E-05	1.1952E+05	6799	9.7	1.1370	1005.3	1.8983E-05	1.1208E+05	10336	20.1	8567	427.01
55	4.6	1.0827	1006.2	1.9699E-05	1.2246E+05	5573	7.2	1.1408	1005.2	1.8936E-05	1.1273E+05	7762	16.6	6667	402.80
50	8.6	1.1074	1005.8	1.9366E-05	1.2741E+05	10614	3.6	1.1437	1005.2	1.8900E-05	1.1324E+05	3925	9.9	7269	734.50

EXPERIMENTAL RESULT

RESULT FILES : R03172 FH = 4.6 FC = 5.6 FILL RATIO = 40

TCH	DTH	DEN _h	CPh	VIS _h	REh	Oh	DTc	DEN _c	CPc	VIS _c	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	15.5	0.9656	1009.4	2.1462E-05	1.0024E+05	16793	12.9	1.1264	1005.5	1.9119E-05	1.5894E+05	19727	52.3	18260	349.13
90	15.5	0.9926	1008.5	2.1026E-05	1.0519E+05	17256	13.1	1.1217	1005.5	1.9179E-05	1.5778E+05	19966	41.0	18611	454.04
80	11.0	1.0141	1007.8	2.0693E-05	1.0919E+05	12474	11.3	1.1236	1005.5	1.9156E-05	1.5823E+05	17224	34.0	14849	437.11
70	8.5	1.0414	1007.1	2.0285E-05	1.1438E+05	9899	8.7	1.1305	1005.4	1.9067E-05	1.5994E+05	13291	26.7	11595	433.80
60	6.3	1.0688	1006.5	1.9892E-05	1.1972E+05	7559	6.6	1.1335	1005.4	1.9029E-05	1.6069E+05	10182	18.8	8871	471.00
55	4.1	1.0816	1006.3	1.9714E-05	1.2224E+05	5012	4.5	1.1366	1005.3	1.8989E-05	1.6147E+05	6951	15.8	5982	379.12
50	1.4	1.0942	1006.0	1.9543E-05	1.2474E+05	1743	6.6	1.1346	1005.3	1.9014E-05	1.6098E+05	10128	11.3	5936	525.18

EXPERIMENTAL RESULT

RESULT FILES : R03173 FH = 3.5 FC = 3.9 FILL RATIO = 40

TCH	DTH	DEN _h	CPh	VIS _h	REh	Oh	DTc	DEN _c	CPc	VIS _c	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	21.9	0.9739	1009.1	2.1326E-05	7.5860E+04	17912	23.4	1.1045	1005.8	1.9406E-05	1.0651E+05	24290	42.9	21101	491.41
90	19.0	0.9989	1008.3	2.0927E-05	7.9290E+04	15863	20.0	1.1096	1005.7	1.9337E-05	1.0738E+05	20869	35.3	18366	519.94
80	14.8	1.0194	1007.7	2.0611E-05	8.2158E+04	12659	16.2	1.1177	1005.6	1.9232E-05	1.0875E+05	17056	30.5	14857	487.64
70	10.7	1.0448	1007.1	2.0235E-05	8.5764E+04	9324	12.0	1.1252	1005.5	1.9135E-05	1.1003E+05	12720	24.2	11022	456.39
60	7.9	1.0720	1006.4	1.9847E-05	8.9724E+04	7065	8.5	1.1421	1005.2	1.8920E-05	1.1296E+05	9169	20.2	8117	402.08
55	5.9	1.0839	1006.2	1.9683E-05	9.1469E+04	5328	7.2	1.1435	1005.2	1.8902E-05	1.1320E+05	7705	17.0	6516	384.02
50	3.2	1.0968	1006.0	1.9508E-05	9.3390E+04	2890	4.5	1.1503	1005.1	1.8817E-05	1.1439E+05	4879	15.0	3884	259.68

EXPERIMENTAL RESULT

RESULT FILES : R03201 FH = 3.5 FC = 3.9 FILL RATIO = 55

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	25.2	0.9789	1008.9	2.1246E-05	7.6534E+04	20694	25.1	1.1021	1005.9	1.9437E-05	1.0611E+05	26069	40.4	23382	578.47
90	20.9	1.0005	1008.2	2.0902E-05	7.9516E+04	17524	21.5	1.1022	1005.9	1.9436E-05	1.0612E+05	22301	32.6	19912	610.94
80	15.4	1.0218	1007.6	2.0576E-05	8.2488E+04	13190	16.8	1.1114	1005.7	1.9314E-05	1.0769E+05	17526	27.9	15358	550.40
70	11.5	1.0454	1007.0	2.0225E-05	8.5862E+04	10066	12.4	1.1187	1005.6	1.9218E-05	1.0893E+05	13069	22.1	11567	522.62
60	7.3	1.0708	1006.5	1.9864E-05	8.9544E+04	6560	8.7	1.1261	1005.5	1.9123E-05	1.1020E+05	9192	16.2	7876	486.52
50	3.2	1.0965	1006.0	1.9512E-05	9.3349E+04	2927	3.6	1.1391	1005.3	1.8958E-05	1.1243E+05	3819	12.0	3373	288.60

EXPERIMENTAL RESULT

RESULT FILES : R03202 FH = 3.5 FC = 4.6 FILL RATIO = 55

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	25.3	0.9793	1008.9	2.1240E-05	7.6586E+04	20769	19.9	1.1057	1005.8	1.9390E-05	1.2643E+05	24502	41.2	22635	548.76
90	21.2	1.0007	1008.2	2.0899E-05	7.9539E+04	17793	16.5	1.1161	1005.6	1.9252E-05	1.2854E+05	20521	36.5	19157	525.05
80	15.8	1.0220	1007.6	2.0572E-05	8.2524E+04	13515	13.7	1.1236	1005.5	1.9155E-05	1.3006E+05	17113	31.3	15314	489.94
70	12.4	1.0475	1007.0	2.0196E-05	8.6156E+04	10894	10.2	1.1309	1005.4	1.9061E-05	1.3155E+05	12879	24.9	11886	478.17
60	8.4	1.0713	1006.5	1.9858E-05	8.9612E+04	7536	7.9	1.1374	1005.3	1.8979E-05	1.3288E+05	9960	19.2	8748	456.50
50	3.5	1.0974	1006.0	1.9500E-05	9.3486E+04	3236	3.9	1.1436	1005.2	1.8901E-05	1.3415E+05	4997	13.0	4117	317.32

EXPERIMENTAL RESULT

RESULT FILES : R03211 FH = 3.5 FC = 5.5 FILL RATIO = 55

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	22.0	0.9743	1009.1	2.1321E-05	7.5905E+04	17958	12.9	1.1319	1005.4	1.9049E-05	1.5722E+05	19431	50.4	18694	370.82
90	21.5	1.0000	1008.3	2.0910E-05	7.9440E+04	18027	13.5	1.1253	1005.5	1.9133E-05	1.5563E+05	20253	39.2	19140	487.83
80	17.2	1.0229	1007.6	2.0559E-05	8.2649E+04	14722	11.9	1.1239	1005.5	1.9152E-05	1.5528E+05	17851	31.0	16286	526.10
70	12.9	1.0485	1007.0	2.0182E-05	8.6296E+04	11276	8.8	1.1324	1005.4	1.9043E-05	1.5735E+05	13280	24.9	12278	492.94
60	8.5	1.0717	1006.5	1.9852E-05	8.9674E+04	7590	6.4	1.1364	1005.3	1.8992E-05	1.5833E+05	9706	18.7	8648	461.60
50	4.2	1.0979	1005.9	1.9494E-05	9.3552E+04	3844	3.1	1.1399	1005.3	1.8948E-05	1.5919E+05	4724	11.8	4284	361.91

EXPERIMENTAL RESULT

RESULT FILES : R03212 FH = 3.5 FC = 1.9 FILL RATIO = 55

TCH	DTH	DENh	CPH	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	14.4	0.9644	1009.4	2.1482E-05	7.4574E+04	11613	40.0	1.0680	1006.5	1.9903E-05	4.8608E+04	19468	34.0	15541	456.63
90	13.5	0.9908	1008.5	2.1055E-05	7.8165E+04	11228	33.2	1.0794	1006.3	1.9745E-05	4.9518E+04	16343	28.2	13786	489.07
80	11.5	1.0161	1007.8	2.0662E-05	8.1684E+04	9811	26.6	1.0900	1006.1	1.9600E-05	5.0376E+04	13234	22.8	11523	505.82
70	8.8	1.0403	1007.2	2.0300E-05	8.5125E+04	7636	19.8	1.1024	1005.9	1.9434E-05	5.1382E+04	9938	18.6	8787	473.02
60	4.5	1.0653	1006.6	1.9941E-05	8.8741E+04	4031	12.1	1.1168	1005.6	1.9243E-05	5.2571E+04	6155	15.0	5093	340.26
50	1.1	1.0929	1006.0	1.9560E-05	9.2811E+04	977	5.0	1.1292	1005.4	1.9084E-05	5.3597E+04	2564	10.2	1771	172.78

EXPERIMENTAL RESULT

RESULT FILES : R03213 FH = 3.5 FC = 3.0 FILL RATIO = 55

TCH	DTH	DENh	CPH	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	22.1	0.9733	1009.1	2.1337E-05	7.5770E+04	17987	29.4	1.0828	1006.2	1.9698E-05	7.8718E+04	22901	36.7	20444	557.43
90	17.8	0.9961	1008.4	2.0971E-05	7.8903E+04	14824	24.6	1.0937	1006.0	1.9549E-05	8.0115E+04	19420	31.6	17122	542.43
80	14.6	1.0209	1007.7	2.0589E-05	8.2364E+04	12502	19.0	1.1068	1005.8	1.9375E-05	8.1800E+04	15176	26.8	13839	516.32
70	9.9	1.0433	1007.1	2.0257E-05	8.5549E+04	8641	14.5	1.1143	1005.7	1.9276E-05	8.2785E+04	11642	21.5	10142	471.44
60	6.6	1.0696	1006.5	1.9881E-05	8.9366E+04	5880	9.9	1.1253	1005.5	1.9133E-05	8.4225E+04	8039	16.3	6960	427.17
50	3.5	1.0980	1005.9	1.9492E-05	9.3571E+04	3178	5.1	1.1367	1005.3	1.8988E-05	8.5723E+04	4142	10.9	3660	335.27

EXPERIMENTAL RESULT

RESULT FILES : R03221 FH = 2.0 FC = 3.9 FILL RATIO = 55

TCH	DTH	DENh	CPH	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	37.1	0.9952	1008.4	2.0985E-05	4.5668E+04	17946	20.0	1.1177	1005.6	1.9232E-05	1.0875E+05	21040	38.3	19493	509.09
90	31.2	1.0156	1007.8	2.0670E-05	4.7311E+04	15375	17.1	1.1193	1005.6	1.9211E-05	1.0903E+05	18016	31.7	16696	526.25
80	23.8	1.0336	1007.3	2.0399E-05	4.8792E+04	11918	13.4	1.1267	1005.5	1.9116E-05	1.1029E+05	14184	27.9	13051	467.79
70	18.0	1.0559	1006.8	2.0075E-05	5.0645E+04	9208	10.5	1.1312	1005.4	1.9058E-05	1.1107E+05	11140	22.1	10174	461.26
60	11.8	1.0768	1006.3	1.9780E-05	5.2422E+04	6172	7.6	1.1346	1005.3	1.9014E-05	1.1166E+05	8102	16.6	7137	429.96
50	5.2	1.1005	1005.9	1.9458E-05	5.4463E+04	2748	2.9	1.1450	1005.2	1.8883E-05	1.1347E+05	3167	12.4	2958	238.15

EXPERIMENTAL RESULT

RESULT FILES : R03222 FH = 4.6 FC = 3.9 FILL RATIO = 55

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	22.5	0.9744	1009.1	2.1318E-05	1.0184E+05	24655	27.0	1.0945	1006.0	1.9539E-05	1.0482E+05	27818	39.8	26237	659.17
90	17.4	0.9947	1008.4	2.0993E-05	1.0557E+05	19410	21.8	1.1071	1005.8	1.9370E-05	1.0696E+05	22749	36.1	21079	584.69
80	13.3	1.0183	1007.7	2.0629E-05	1.0998E+05	15158	18.1	1.1087	1005.8	1.9350E-05	1.0722E+05	18930	28.2	17044	603.81
70	9.9	1.0436	1007.1	2.0252E-05	1.1481E+05	11603	13.4	1.1163	1005.6	1.9250E-05	1.0852E+05	14049	22.0	12826	582.69
60	6.9	1.0698	1006.5	1.9878E-05	1.1990E+05	8271	9.2	1.1255	1005.5	1.9130E-05	1.1010E+05	9751	16.3	9011	552.12
50	2.1	1.0937	1006.0	1.9550E-05	1.2464E+05	2594	4.2	1.1339	1005.4	1.9024E-05	1.1154E+05	4474	11.4	3534	309.63

EXPERIMENTAL RESULT

RESULT FILES : R03223 FH = 6.0 FC = 3.9 FILL RATIO = 55

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	18.7	0.9699	1009.2	2.1393E-05	1.3067E+05	26356	28.2	1.0904	1006.1	1.9594E-05	1.0414E+05	28954	40.2	27655	688.51
90	15.2	0.9911	1008.5	2.1050E-05	1.3570E+05	21830	24.5	1.0943	1006.0	1.9542E-05	1.0479E+05	25260	33.4	23545	704.06
80	11.3	1.0154	1007.8	2.0672E-05	1.4158E+05	16676	19.7	1.1035	1005.8	1.9418E-05	1.0634E+05	20487	27.6	18581	674.00
70	8.6	1.0407	1007.2	2.0295E-05	1.4779E+05	13007	14.6	1.1152	1005.6	1.9265E-05	1.0833E+05	15350	22.5	14179	628.86
60	5.0	1.0673	1006.5	1.9912E-05	1.5449E+05	7729	9.7	1.1268	1005.5	1.9113E-05	1.1032E+05	10259	17.4	8994	518.09
50	1.9	1.0936	1006.0	1.9551E-05	1.6122E+05	2979	3.8	1.1383	1005.3	1.8967E-05	1.1231E+05	4034	12.7	3507	277.13

EXPERIMENTAL RESULT

RESULT FILES : R03231 FH = 3.5 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	23.8	0.9766	1009.0	2.1282E-05	7.6230E+04	19458	23.2	1.1013	1005.9	1.9447E-05	1.0598E+05	24026	41.0	21742	530.01
90	19.3	0.9977	1008.3	2.0946E-05	7.9123E+04	16131	18.5	1.1087	1005.8	1.9350E-05	1.0722E+05	19339	35.5	17735	499.89
80	14.9	1.0201	1007.7	2.0601E-05	8.2249E+04	12701	15.0	1.1173	1005.6	1.9236E-05	1.0870E+05	15770	30.2	14236	471.99
70	10.0	1.0424	1007.1	2.0269E-05	8.5428E+04	8677	10.6	1.1258	1005.5	1.9126E-05	1.1015E+05	11259	25.1	9968	397.01
60	6.9	1.0691	1006.5	1.9888E-05	8.9289E+04	6126	7.5	1.1344	1005.3	1.9017E-05	1.1162E+05	8025	19.0	7076	372.20
50	2.0	1.0962	1006.0	1.9516E-05	9.3300E+04	1833	3.0	1.1446	1005.2	1.8888E-05	1.1340E+05	3196	13.6	2515	184.79

EXPERIMENTAL RESULT

RESULT FILES : R03241 FH = 3.5 FC = 4.6 FILL RATIO = 91

TCH	DTH	DENh	CPH	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	27.8	0.9826	1008.8	2.1185E-05	7.7048E+04	22890	20.2	1.1149	1005.7	1.9268E-05	1.2829E+05	25086	42.6	23988	563.17
90	24.1	1.0045	1008.1	2.0840E-05	8.0065E+04	20271	17.0	1.1159	1005.6	1.9255E-05	1.2850E+05	21161	35.0	20716	591.47
80	17.7	1.0246	1007.6	2.0534E-05	8.2884E+04	15193	13.7	1.1236	1005.5	1.9155E-05	1.3006E+05	17130	30.4	16162	532.39
70	13.7	1.0485	1007.0	2.0181E-05	8.6307E+04	12022	10.4	1.1295	1005.4	1.9080E-05	1.3125E+05	13127	24.1	12574	521.88
60	10.0	1.0744	1006.4	1.9814E-05	9.0075E+04	8937	7.2	1.1346	1005.3	1.9015E-05	1.3230E+05	9121	17.4	9029	519.42
50	4.1	1.0978	1005.9	1.9495E-05	9.3540E+04	3799	3.5	1.1392	1005.3	1.8956E-05	1.3324E+05	4436	11.7	4118	352.58

EXPERIMENTAL RESULT

RESULT FILES : R03242 FH = 3.5 FC = 4.3 FILL RATIO = 91

TCH	DTH	DENh	CPH	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	27.5	0.9819	1008.8	2.1197E-05	7.6950E+04	22605	17.8	1.1079	1005.8	1.9361E-05	1.1744E+05	20370	40.8	21487	527.12
90	22.3	1.0025	1008.2	2.0872E-05	7.9784E+04	18702	14.1	1.1129	1005.7	1.9294E-05	1.1839E+05	16191	34.9	17446	500.58
80	18.0	1.0246	1007.6	2.0533E-05	8.2895E+04	15412	11.8	1.1167	1005.6	1.9244E-05	1.1910E+05	13541	28.3	14477	511.11
70	12.9	1.0476	1007.0	2.0195E-05	8.6167E+04	11288	9.0	1.1219	1005.5	1.9177E-05	1.2007E+05	10434	22.3	10861	487.13
60	8.5	1.0731	1006.4	1.9832E-05	8.9879E+04	7651	5.9	1.1286	1005.4	1.9091E-05	1.2133E+05	6874	16.1	7262	449.74
50	2.6	1.0948	1006.0	1.9535E-05	9.3090E+04	2354	1.6	1.1357	1005.3	1.9001E-05	1.2267E+05	1879	11.6	2116	182.38

EXPERIMENTAL RESULT

RESULT FILES : R03243 FH = 3.5 FC = 3.0 FILL RATIO = 91

TCH	DTH	DENh	CPH	VISH	REh	Oh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	21.6	0.9737	1009.1	2.1329E-05	7.5831E+04	17615	29.3	1.0849	1006.2	1.9670E-05	7.8980E+04	22916	37.1	20266	546.05
90	18.0	0.9950	1008.4	2.0988E-05	7.8749E+04	14978	24.6	1.0934	1006.0	1.9554E-05	8.0075E+04	19403	31.9	17191	539.25
80	14.1	1.0190	1007.7	2.0618E-05	8.2095E+04	12054	19.0	1.1044	1005.8	1.9407E-05	8.1487E+04	15138	26.7	13596	508.43
70	11.2	1.0453	1007.0	2.0228E-05	8.5835E+04	9785	14.2	1.1159	1005.6	1.9255E-05	8.2994E+04	11411	21.4	10598	496.00
60	6.7	1.0697	1006.5	1.9879E-05	8.9387E+04	5962	8.7	1.1278	1005.4	1.9101E-05	8.4554E+04	7090	17.0	6526	384.34
50	3.0	1.0951	1006.0	1.9530E-05	9.3145E+04	2736	1.9	1.1441	1005.2	1.8895E-05	8.6705E+04	1528	13.8	2132	154.84

EXPERIMENTAL RESULT

RESULT FILES : R03251 FH = 3.5 FC = 1.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.6	0.9660	1009.4	2.1456E-05	7.4786E+04	13411	34.5	1.0807	1006.3	1.9727E-05	4.9620E+04	16969	38.2	15190	397.67
90	13.0	0.9904	1008.5	2.1061E-05	7.8111E+04	10824	28.2	1.0880	1006.1	1.9627E-05	5.0214E+04	13999	31.4	12411	394.64
80	11.3	1.0163	1007.8	2.0658E-05	8.1723E+04	9633	22.0	1.0983	1005.9	1.9488E-05	5.1050E+04	10989	25.6	10311	402.92
70	8.2	1.0406	1007.2	2.0296E-05	8.5164E+04	7097	16.6	1.1078	1005.8	1.9361E-05	5.1829E+04	8396	20.3	7747	381.44
60	4.9	1.0676	1006.5	1.9909E-05	8.9070E+04	4397	10.4	1.1156	1005.6	1.9259E-05	5.2473E+04	5270	14.1	4833	343.37
50	0.9	1.0947	1006.0	1.9536E-05	9.3077E+04	844	1.8	1.1349	1005.3	1.9010E-05	5.4080E+04	934	11.4	889	77.79

EXPERIMENTAL RESULT

RESULT FILES : R03252 FH = 4.6 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	19.1	0.9698	1009.2	2.1393E-05	1.0101E+05	20801	26.5	1.0889	1006.1	1.9615E-05	1.0388E+05	27184	39.8	23993	603.04
90	15.5	0.9941	1008.4	2.1002E-05	1.0546E+05	17354	22.6	1.0976	1006.0	1.9498E-05	1.0534E+05	23338	33.4	20346	608.96
80	11.5	1.0163	1007.8	2.0659E-05	1.0960E+05	13087	16.7	1.1090	1005.7	1.9345E-05	1.0728E+05	17460	29.0	15274	526.31
70	8.4	1.0415	1007.1	2.0282E-05	1.1441E+05	9786	11.9	1.1204	1005.6	1.9197E-05	1.0921E+05	12542	23.8	11164	468.66
60	4.8	1.0667	1006.6	1.9922E-05	1.1930E+05	5727	7.4	1.1316	1005.4	1.9052E-05	1.1115E+05	7917	19.0	6822	359.85
50	1.6	1.0931	1006.0	1.9558E-05	1.2452E+05	1912	2.5	1.1418	1005.2	1.8924E-05	1.1290E+05	2685	13.8	2298	166.96

EXPERIMENTAL RESULT

RESULT FILES : R03261 FH = 6.0 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Qh	DTc	DENc	CPc	VISC	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	16.7	0.9669	1009.3	2.1441E-05	1.2998E+05	23453	30.9	1.0936	1006.0	1.9551E-05	1.0467E+05	31826	42.0	27640	658.05
90	12.7	0.9882	1008.6	2.1096E-05	1.3502E+05	18213	24.9	1.1028	1005.9	1.9428E-05	1.0622E+05	25875	36.9	22044	598.10
80	10.3	1.0140	1007.8	2.0694E-05	1.4123E+05	15209	19.2	1.1142	1005.7	1.9278E-05	1.0816E+05	20124	31.1	17666	567.52
70	7.1	1.0383	1007.2	2.0330E-05	1.4721E+05	10651	13.5	1.1224	1005.5	1.9170E-05	1.0957E+05	14295	25.4	12473	491.81
60	4.6	1.0654	1006.6	1.9940E-05	1.5400E+05	7083	9.0	1.1276	1005.4	1.9103E-05	1.1046E+05	9583	18.2	8333	457.85
50	0.2	1.0918	1006.1	1.9575E-05	1.6075E+05	336	2.2	1.1374	1005.3	1.8978E-05	1.1216E+05	2398	12.9	1367	105.58

EXPERIMENTAL RESULT

RESULT FILES : R03262 FH = 2.0 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	34.0	0.9911	1008.5	2.1050E-05	4.5339E+04	16356	17.9	1.1081	1005.8	1.9357E-05	1.0713E+05	18614	37.1	17485	471.32
90	27.0	1.0092	1008.0	2.0768E-05	4.6792E+04	13216	15.8	1.1054	1005.8	1.9393E-05	1.0666E+05	16464	30.2	14840	492.20
80	21.8	1.0313	1007.4	2.0433E-05	4.8600E+04	10919	11.5	1.1153	1005.6	1.9262E-05	1.0835E+05	12104	25.5	11512	451.93
70	14.4	1.0502	1006.9	2.0157E-05	5.0167E+04	7308	8.5	1.1201	1005.6	1.9201E-05	1.0916E+05	8915	20.9	8111	388.96
60	9.0	1.0742	1006.4	1.9817E-05	5.2196E+04	4690	4.8	1.1274	1005.4	1.9106E-05	1.1042E+05	5065	15.4	4878	316.55
50	1.1	1.0934	1006.0	1.9554E-05	5.3840E+04	601	0.4	1.1350	1005.3	1.9010E-05	1.1172E+05	426	11.8	514	43.43

EXPERIMENTAL RESULT

RESULT FILES : R03263R FH = 3.5 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	24.9	0.9785	1008.9	2.1252E-05	7.6481E+04	20452	22.0	1.0952	1006.0	1.9530E-05	1.0493E+05	22681	38.5	21566	560.04
90	18.3	0.9966	1008.4	2.0963E-05	7.8973E+04	15302	17.8	1.1003	1005.9	1.9461E-05	1.0581E+05	18399	33.4	16851	503.76
80	14.7	1.0198	1007.7	2.0606E-05	8.2204E+04	12509	14.0	1.1079	1005.8	1.9360E-05	1.0709E+05	14587	27.6	13548	491.34
70	10.7	1.0448	1007.1	2.0235E-05	8.5769E+04	9346	10.0	1.1166	1005.6	1.9246E-05	1.0856E+05	10543	21.7	9944	457.55
60	6.1	1.0682	1006.5	1.9900E-05	8.9169E+04	5487	6.2	1.1245	1005.5	1.9143E-05	1.0993E+05	6520	16.5	6003	362.80
50	0.9	1.0932	1006.0	1.9556E-05	9.2859E+04	784	0.5	1.1406	1005.3	1.8938E-05	1.1270E+05	563	13.4	784	58.44

EXPERIMENTAL RESULT

RESULT FILES : R03271 FH = 4.6 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Qc	TLM	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	21.0	0.9726	1009.1	2.1347E-05	1.0152E+05	22950	29.6	1.0961	1006.0	1.9517E-05	1.0509E+05	30583	40.8	26766	655.53
90	17.5	0.9951	1008.4	2.0986E-05	1.0565E+05	19536	24.4	1.1017	1005.9	1.9442E-05	1.0604E+05	25268	34.3	22402	653.86
80	12.9	1.0173	1007.8	2.0644E-05	1.0979E+05	14789	18.8	1.1093	1005.7	1.9342E-05	1.0733E+05	19606	28.7	17197	598.45
70	9.9	1.0430	1007.1	2.0261E-05	1.1470E+05	11635	13.9	1.1179	1005.6	1.9229E-05	1.0879E+05	14599	22.6	13117	579.59
60	5.6	1.0667	1006.6	1.9922E-05	1.1930E+05	6674	8.5	1.1275	1005.4	1.9105E-05	1.1044E+05	9032	17.8	7853	440.90
50	0.7	1.0937	1006.0	1.9550E-05	1.2465E+05	911	0.9	1.1420	1005.2	1.8920E-05	1.1295E+05	1015	13.7	963	70.55

EXPERIMENTAL RESULT

RESULT FILES : R03272 FH = 3.5 FC = 5.5 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Oc	TLN	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	25.8	0.9794	1008.9	2.1238E-05	7.6601E+04	21167	17.1	1.1067	1005.8	1.9376E-05	1.5113E+05	25163	41.4	23165	559.43
90	23.0	1.0030	1008.2	2.0864E-05	7.9855E+04	19349	14.1	1.1129	1005.7	1.9294E-05	1.5263E+05	20885	34.6	20117	580.80
80	17.6	1.0247	1007.6	2.0532E-05	8.2897E+04	15076	11.8	1.1153	1005.6	1.9264E-05	1.5319E+05	17488	27.9	16282	583.25
70	13.2	1.0489	1007.0	2.0175E-05	8.6362E+04	11539	8.8	1.1205	1005.6	1.9194E-05	1.5449E+05	13061	21.5	12300	572.93
60	7.9	1.0723	1006.4	1.9843E-05	8.9768E+04	7052	5.3	1.1286	1005.4	1.9092E-05	1.5642E+05	8000	16.4	7526	459.79
50	1.7	1.0937	1006.0	1.9550E-05	9.2924E+04	1568	0.5	1.1388	1005.3	1.8961E-05	1.5892E+05	753	12.8	1160	90.77

EXPERIMENTAL RESULT

RESULT FILES : R03281R FH = 3.5 FC = 3.9 FILL RATIO = 91

TCH	DTH	DENh	CPh	VISH	REh	Oh	DTc	DENc	CPc	VISc	REc	Oc	TLN	Qav	UA
c	c	kg/m ³	J/kgc	kg/ms		w	c	kg/m ³	J/kgc	kg/ms		w	c	w	w/c
100	25.6	0.9788	1008.9	2.1247E-05	7.6525E+04	20981	24.1	1.1028	1005.9	1.9428E-05	1.0622E+05	25053	40.6	23017	566.41
90	18.1	0.9960	1008.4	2.0973E-05	7.8882E+04	15068	19.7	1.1115	1005.7	1.9313E-05	1.0770E+05	20640	36.9	17854	483.90
80	14.9	1.0205	1007.7	2.0596E-05	8.2303E+04	12755	15.4	1.1181	1005.6	1.9226E-05	1.0883E+05	16149	30.3	14452	477.64
70	9.8	1.0431	1007.1	2.0259E-05	8.5531E+04	8568	10.8	1.1270	1005.5	1.9112E-05	1.1035E+05	11449	25.2	10009	397.36
60	6.5	1.0704	1006.5	1.9870E-05	8.9487E+04	5804	7.0	1.1328	1005.4	1.9037E-05	1.1135E+05	7447	18.2	6626	364.84
50	1.9	1.0954	1006.0	1.9527E-05	9.3180E+04	1765	2.0	1.1434	1005.2	1.8903E-05	1.1319E+05	2161	13.5	1963	145.08

ศูนย์วิจัยและพัฒนา
จุฬาลงกรณ์มหาวิทยาลัย

ภาคผนวก ค

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10 REM MAIN PROGRAM CALCULATE DATA
20 CLS : CLEAR :KEY OFF
30 LOCATE 4,8 :PRINT "OPTION ;"
40 LOCATE 6,10 :PRINT "1). CALCULATION FOR DATA FILE"
50 LOCATE 7,10 :PRINT "2). CREATE DATA FILE"
60 LOCATE 8,10 :PRINT "3). PRINT FILES"
120 LOCATE 9,10 :PRINT "4). QUIT"
130 LOCATE 10,8 :PRINT "Select (1-4)"
140 K$ = INKEY$ :IF K$ = " " THEN 140
150 IF K$("<1" OR K$("<4" THEN 140
160 ON VAL(K$) GOTO 170,180,190,250
170 RUN "A:\PROGRAM\CALC"
180 RUN "A:\PROGRAM\CREAT-DT"
190 RUN "A:\PROGRAM\MAIN2"
250 CLS:LOCATE 15,15 :PRINT "          GOOD LUCK ! "
260 LOCATE 16,20:PRINT "FINISH TIME ",TIMES$
270 KEY ON
280 END

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10 CLS : CLEAR :GOSUB 1030
20 DIM DTH(3),DTC(3)
30 REM PROGRAM FOR EXPERIMENTAL THERMAL ANALYSIS
31 REM DEFINE FUNCTION FOR CALCULATE AIR PROPERTY
32 DEF FNDEN(T)=(4.8885839115#-.0267780048#*T+7.25011E-05*T^2
-9.7E-08*T^3+5.132057006D-11*T^4)
33 DEF FNCP(T)=(1.0178282505#-1.213709E-04*T+2.176E-07*T^2+
1.3963270506D-10*T^3)*1000
34 DEF FNVIS(T)=1.9699E-06+6.32E-08*T-2.7087519579D-11*T^2
40 REM Accessing a sequential file
50 LOCATE 8,10:COLOR 0,15:PRINT " CALCULATE EXPERIMENTAL THERMAL
ANALYSIS "
60 COLOR 2,0:LOCATE 10,10 :PRINT "Name of DATA FILE to be open: "
70 LOCATE 10,45:INPUT "D",D0$
80 D$ = "D"+D0$ :REM Data File Name
90 R$ = "R"+D0$ :REM Result File Name
100 R1$ = "B:\LOG-MEAN\"+R$+".PRN"
105 TEM$ = "T"+D0$ :REM Result Temperature File
110 TEMP$ = "B:\TEMP\"+TEM$+".PRN"
115 NT$ = "N"+D0$ :REM Result NTU File
120 NTU$ = "B:\NTU\"+NT$+".PRN"
125 REM ON ERROR GOTO 1010
130 OPEN "I",#1,D$
140 OPEN "O",#2,R1$
145 OPEN "O",#3,TEMP$
150 OPEN "O",#4,NTU$
160 INPUT#1,D$,DPH,DPC,L
170 CLS:COLOR 0,15
180 LOCATE 2,14:PRINT " PROGRAM FOR EXPERIMENTAL THERMAL ANALYSIS "
190 COLOR 2,0:LOCATE 4,10:COLOR 15:PRINT "SITUATION :-":COLOR 2,0
200 LOCATE 5,15:PRINT "NUMBER OF DATA SET = "
210 LOCATE 6,15:PRINT "Name of DATA file to be open : ",D$
220 LOCATE 7,15:PRINT "Name of RESULT file to be created : ",R$
230 FR = L*100/40 :REM Fill Ratio
240 FH=(-13.87596+SQR(13.8759^2-(4*1.108759*(-21.2986-DPH))))/
(2*1.108759)
250 FC=(1.48804+SQR(-1.48804^2-(4*1.803917*(6.77025-DPC))))/(2*1.80391)
260 WRITE #2,R$ ,FH,FC,FR
270 WRITE #3,TEM$,FH,FC,FR
275 WRITE #4,NT$ ,FH,FC,FR
280 FOR I=1 TO 60 : LOCATE 8,6+I : PRINT CHR$(205) : NEXT I
290 REM *****
300 REM ***** CLAC. PART *****
310 REM *****
320 IF EOF(1) THEN CLOSE #1:CLOSE #2:CLOSE #3:CLOSE #4:GOTO 990
330 INPUT#1,N,TCH,THI,THO,DTH(1),DTH(2),DTH(3),TCI,TCO,DTC(1),DTC(2),
DTC(3)
340 LOCATE 5,60:PRINT N
345 REM ***** EVAPORATOR *****
350 DELTH = 0
360 FOR I=1 TO 3 :DELTH=DELTH+DTH(I) :NEXT I
370 DELTH = ABS(DELTH/(3*.408))
380 THOC = THI-DELTH
390 TH = THI - (DELTH/2)

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400 T = TH+273
410 DENH = FNDEN(T) : CPH = FNCP(T) : VISH = FNVIS(T)
420 CH = DENH * FH * .24 * CPH
430 GH = CH * DELTH
440 REH = DENH * FH * DEG / VISH
450 REM ***** CONDENSER SIDE *****
460 DELTC = 0
470 FOR I=1 TO 3 :DELTC=DELTC+DTC(I) :NEXT I
480 DELTC = ABS(DELTC/(3*.476))
490 TC = TCI + (DELTC/2)
500 TCOC = TCI+DELTC
510 T = TC+273
520 DENC = FNDEN(T) : CPC = FNCP(T) : VISC = FNVIS(T)
530 CC = DENC * FC * .24 * CPC
540 GC = CC * DELTC
550 REC = DENC * FC * DEG / VISC
560 REM
570 IF (DTH(1) AND DTC(1))=0 THEN GOSUB 1310
580 IF DTH(1)<0 THEN GOSUB 1320
590 IF DTC(1)<0 THEN GOSUB 1330
600 DEL1 = THI-TCOC
610 DEL2 = THOC - TCI
620 IF (DEL1/DEL2)=1 THEN GOSUB 1250
630 IF (DEL1/DEL2)<>1 THEN GOSUB 1280
640 UA = QAV/TLM
650 WRITE #2, TCH, DELTH, DENH, CPH, VISH, REH, GH, DELTC, DENC, CPC,
VISC, REC, GC, TLM, QAV, UA
655 WRITE #3, THI, THO, THOC, TH, TCI, TCO, TCOC, TC, DEL1, DEL2
660 LOCATE 9,24:PRINT " N = ";N;
670 LOCATE 11,9 :COLOR 15 :PRINT "HOT SIDE "
680 LOCATE 12,5 :COLOR 2,0 :PRINT " GH = ";GH
690 LOCATE 13,5 :PRINT " VISH = ";VISH
700 LOCATE 14,5 :PRINT " REH = ";REH
710 LOCATE 11,33 :COLOR 15 :PRINT "COLD SIDE "
720 LOCATE 12,27 :COLOR 2,0 :PRINT " GC = ";GC
730 LOCATE 13,27 :PRINT " VISC = ";VISC
740 LOCATE 14,27 :PRINT " REC = ";REC
750 LOCATE 11,56 :COLOR 15 :PRINT "RESULT":COLOR 2,0
760 LOCATE 12,50 :PRINT " QAV = ";QAV
770 LOCATE 13,50 :PRINT " UA = ";UA
775 LOCATE 14,50 :PRINT " TLM = ";TLM
780 REM ***** NTU CALC. *****
785 CMIN=CC : CMAX=CH
790 IF CC>CH THEN SWAP CMIN, CMAX
795 M = CMIN/CMAX
810 EH = CH*(THI-THOC)/((CMIN*(THI-TCI)))
820 EC = CC*(TCOC-TCI)/((CMIN*(THI-TCI)))
830 EMIN=EC : EMAX=EH
840 IF CC>CH THEN SWAP EMIN, EMAX
850 E0 = 1/(1/EMIN+M/EMAX)
860 NTUH = -LOG(1-EH)
870 NTUC = -LOG(1-EC)
880 NTUD = (NTUH+NTUC)/2
890 NUA = NTUD*CMIN
900 E = (1-(((1-M*E0)/(1-E0)))/(M-((1-M*E0)/(1-E0))))
905 NTU = -LOG(1-E)
910 WRITE #4, CH, CC, M, EH, EC, E0, E, NTUH, NTUC, NTUD, NUA
911 LOCATE 16,5 :PRINT " CH = ";CH
912 LOCATE 17,5 :PRINT " EH = ";EH
913 LOCATE 18,5 :PRINT " NTUH = ";NTUH
914 LOCATE 16,27 :PRINT " CC = ";CC
915 LOCATE 17,27 :PRINT " EC = ";EC
916 LOCATE 18,27 :PRINT " NTUC = ";NTUC
917 LOCATE 16,50 :PRINT " M = ";M
918 LOCATE 17,50 :PRINT " E0 = ";E0
919 LOCATE 18,50 :PRINT " E = ";E
920 LOCATE 19,50 :PRINT " NTUD = ";NTUD
921 LOCATE 20,50 :PRINT " UA = ";NUA
960 BEEP:BEEP
965 REM LOCATE 23,27:PRINT "PRESS C FOR NEXT CALC. "
970 REM C$=INKEY$:IF C$<>"C" THEN 970
980 GOTO 300
990 LOCATE 24,25 :INPUT " CONTINUE CALCULATION PRESS Y !";A$
1000 IF A$="Y" OR A$="y" THEN RUN ELSE GOTO 1010
1010 RUN "A:\PROGRAM\MAIN"
1020 END

```



```

1030 REM ***** SETTING VALIABLE *****
1040   PI = 3.141592654#
1050   DEG = .48
1060 RETURN
1250 REM
1260 TLM = (DEL1+DEL2)/2
1270 RETURN
1280 REM CALC. TEMP. LOG. MEAN
1290 TLM = (DEL1-DEL2)/LOG(DEL1/DEL2)
1300 RETURN
1310 QAV = (QC+ QH)/2 :RETURN
1320 QAV=QC:RETURN
1330 QAV=QH:RETURN

10 CLS
20 REM Creating a sequential file :DIM DTC(3),DTH(3)
30 LOCATE 3,5:PRINT "Name of data file to be created : "
40 COLOR 0,15:LOCATE 3,42:INPUT "D",D$
50 D$="D"+D$
60 COLOR 0,2
70 IF D$="D" GOTO 540
80 OPEN "O",#1,D$
90 CLS:PRINT "FILES ; ";D$
95 PRINT "1). LEVEL OF WATER : "
100 PRINT "2). Pressure drop HOT side : "
110 PRINT "3). Pressure drop: COLD side : "
115 LOCATE 2,40 :INPUT L
120 LOCATE 3,40 :INPUT DPH
130 LOCATE 4,40 :INPUT DPC
140 WRITE #1,D$,DPH,DPC,L
150 N=0
160 N=N+1
170 CLS:PRINT "FILES ; ";D$
180 IF N$="N" OR N$="n" THEN
190 PRINT "NUMBER : ",N
200 PRINT "      HOT side"
210 PRINT "1). Control Temperature : "
220 PRINT "2). Temperature in HOT side : "
230 PRINT "3). Temperature out HOT side : "
240 PRINT "4). Delta TH(1) : "
250 PRINT "5). Delta TH(2) : "
260 PRINT "6). Delta TH(3) : "
270 PRINT "      COLD side"
280 PRINT "7). Temperature in COLD side : "
290 PRINT "8). Temperature out COLD side : "
300 PRINT "9). Delta TC(1) : "
310 PRINT "10).Delta TC(2) : "
320 PRINT "11).Delta TC(3) : "
330 LOCATE 4,40:INPUT TCH
340 LOCATE 5,40:INPUT THI
350 LOCATE 6,40:INPUT THO
360 LOCATE 7,40:INPUT DTH(1)
370 LOCATE 8,40:INPUT DTH(2)
380 LOCATE 9,40:INPUT DTH(3)
390 LOCATE 11,40:INPUT TCI
400 LOCATE 12,40:INPUT TCO
410 LOCATE 13,40:INPUT DTC(1)
420 LOCATE 14,40:INPUT DTC(2)
430 LOCATE 15,40:INPUT DTC(3)
440 LOCATE 17,5:INPUT "Do you want to change data ? Y/N : ",C$
450 IF C$="N" OR C$="n" THEN GOTO 470
460 IF C$="Y" OR C$="y" THEN GOTO 170 ELSE GOTO 440
470 WRITE #1,N,TCH,THI,THO,DTH(1),DTH(2),DTH(3),TCI,TCO,DTC(1),DTC(2),DTC(3)
480 PRINT
490 LOCATE 18,5:INPUT "MORE DATA ADD (Type 'N' when finished) : ",N$
500 IF N$="N" OR N$="n" GOTO 540
510 IF N$="Y" OR N$="y" GOTO 520 ELSE GOTO 490
520 CLS
530 GOTO 160
540 CLOSE #1: CLEAR : RUN "A:\PROGRAM\MAIN"

```




ประวัติผู้เขียน

นายปรีชา กอบเกื้อชัยพงษ์ เกิดวันที่ 8 ธันวาคม 2501 จังหวัดสระบุรี สำเร็จการศึกษาระดับปริญญาตรีทางด้าน วิทยาศาสตร์บัณฑิต สาขาจุลชีววิทยา จาก คณะวิทยาศาสตร์ มหาวิทยาลัยเกษตรศาสตร์ เมื่อปีการศึกษา 2522 จากนั้นทำงาน ที่บริษัท ไทยเมจิฟาร์มมาซูติคัล จำกัด จนกระทั่งปี พ.ศ. 2528 ได้ลาออกและเข้า ศึกษาต่อที่ภาควิชาสหสาขาวิชาปิโตรเคมี-โพลีเมอร์ สาขาวิชาเทคโนโลยีปิโตรเคมี จุฬาลงกรณ์มหาวิทยาลัย

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย