



APPENDIX

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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Appendix 1 Analysis of Variance table for percentage of barley seed infection by *Alternaria* sp. treated with radio frequency at various temperatures and times evaluated by PDA method

Source	DF	SS	MS	F	P
Rep	3	1.145	0.3816		
Treatment	12	126.21	10.5175	52.51	0.0000
Error	36	7.21	0.2003		
Total	51	134.566			

Grand Mean = 1.4555

CV (%) = 28.71

Appendix 2 Analysis of Variance table for percentage of barley seed infection by *A. flavus* treated with radio frequency at various temperatures and times evaluated by PDA method

Source	DF	SS	MS	F	P
rep	3	54.775	18.2582		
trt	12	392.363	32.6969	31.88	0.0000
Error	36	36.924	1.0257		
Total	51	484.062			

Grand Mean = 3.8781

CV (%) = 26.11

Appendix 3 Analysis of Variance table for percentage of barley seed infection by *A. niger* treated with radio frequency at various temperatures and times evaluated by PDA method

Source	DF	SS	MS	F	P
rep	3	0.2866	0.09552		
trt	12	33.3802	2.78168	88.17	0.0000
Error	36	1.1358	0.03155		
Total	51	34.8025			
Grand Mean = 0.4034					
CV (%) = 44.29					

Appendix 4 Analysis of Variance table for percentage of barley seed infection by *Fusarium* sp. treated with radio frequency at various temperatures and times evaluated PDA method

Source	DF	SS	MS	F	P
Rep	3	205.193	68.3975		
Treatment	12	636.319	53.0266	24.84	0.0000
Error	36	76.847	2.1346		
Total	51	918.358			
Grand Mean = 3.9193					
CV (%) = 14.16					

Appendix 5 Analysis of Variance table for percentage of barley seed infection by *Penicillium* sp. treated with radio frequency at various temperatures and times evaluated by PDA method

Source	DF	SS	MS	F	P
Rep	3	75.937	25.3125		
Treatment	12	744.481	62.0401	19.81	0.0000
Error	36	112.75	3.1319		
Total	51	933.168			
Grand Mean = 5.1442					
CV (%) = 11.63					

Appendix 6 Analysis of Variance table for percentage of barley seed infection by *Rhizopus* sp. treated with radio frequency at various temperatures and times evaluated by PDA method

Source	DF	SS	MS	F	P
Rep	3	223.2	74.3995		
Treatment	12	644.07	53.6728	8.2	0.0000
Error	36	235.56	6.5432		
Total	51	1102.83			
Grand Mean =	6.4669				
CV (%) =	10.84				

Appendix 7 Analysis of Variance table for percentage of barley seed infection by *Alternaria* sp. treated with radio frequency at various temperatures and times evaluated by blotter method

Source	DF	SS	MS	F	P
Rep	3	3.861	1.28686		
Treatment	12	114.808	9.56731	45.46	0.0000
Error	36	7.577	0.21047		
Total	51	126.245			
Grand Mean =	1.2596				
CV (%) =	26.43				

Appendix 8 Analysis of Variance table for percentage of barley seed infection by *A. flavus* treated with radio frequency at various temperatures and times evaluated by blotter method

Source	DF	SS	MS	F	P
Rep	3	145.25	48.415		
Treatment	12	1781.44	148.454	57.19	0.0000
Error	36	93.44	2.596		
Total	51	2020.13			
Grand Mean =	6.5481				
CV (%) =	24.60				

Appendix 9 Analysis of Variance table for percentage of barley seed infection by *A. niger* treated with radio frequency at various temperatures and times evaluated by blotter method

Source	DF	SS	MS	F	P
Rep	3	0.207	0.06891		
Treatment	12	109.106	9.09215	67.41	0.0000
Error	36	4.856	0.13488		
Total	51	114.168			
Grand Mean =	0.8558				
CV (%) =	35.32				

Appendix 10 Analysis of Variance table for percentage of barley seed infection by *Fusarium* sp. treated with radio frequency at various temperatures and times evaluated by blotter method

Source	DF	SS	MS	F	P
Rep	3	7.553	2.5176		
Treatment	12	212.683	17.7236	32.7	0.0000
Error	36	19.51	0.5419		
Total	51	239.745			
Grand Mean =	1.7404				
CV (%) =	27.51				

Appendix 11 Analysis of Variance table for percentage of barley seed infection by *Penicillium* sp. treated with radio frequency at various temperatures and times evaluated by blotter method

Source	DF	SS	MS	F	P
Rep	3	2.822	0.9407		
Treatment	12	566.202	47.1835	25.74	0.0000
Error	36	65.99	1.8331		
Total	51	635.014			
Grand Mean =	2.9327				
CV (%) =	19.81				

Appendix 12 Analysis of Variance table for percentage of barley seed infection by *Rhizopus* sp. treated with radio frequency at various temperatures and times evaluated by blotter method

Source	DF	SS	MS	F	P
Rep	3	25.67	8.556		
Treatment	12	3652.38	304.365	16.99	0.0000
Error	36	644.89	17.914		
Total	51	4322.94			
Grand Mean =	18.875				
CV (%) =	5.11				

Appendix 13 Analysis of Variance table for percentage of barley seed moisture content treated with radio frequency at various temperatures and times

Source	DF	SS	MS	F	P
Rep	3	1.87992	0.62664		
Treatment	12	1.96136	0.16345	4.74	0.0001
Error	36	1.24041	0.03446		
Total	51	5.0817			
Grand Mean =	13.851				
CV (%) =	1.34				

Appendix 14 Analysis of Variance table for percentage of barley seed germination treated with radio frequency at various temperatures and times

Source	DF	SS	MS	F	P
Rep	3	52.6	17.534		
Treatment	12	9310.3	775.856	25.46	0.0000
Error	36	1097.1	30.475		
Total	51	10460			
Grand Mean =	80.760				
CV (%) =	6.84				

Appendix 15 Analysis of Variance table for percentage of barley seed viability treated with radio frequency at various temperatures and times

Source	DF	SS	MS	F	P
rep	3	2.51	0.8381		
Treatment	12	1191.8	99.3165	78.5	0.0000
Error	36	45.55	1.2652		
Total	51	1239.86			

Grand Mean = 95.837

CV (%) = 1.17

Appendix 16 Analysis of Variance table for percentage of barley seed germination after accelerated aging treated with radio frequency at various temperatures and times

Source	DF	SS	MS	F	P
rep	3	2194.48	731.494		
treat	12	4218.86	351.572	3.85	0.0008
Error	36	3287.71	91.325		
Total	51	9701.05			

Grand Mean = 31.038

CV (%) = 30.79

Appendix 17 Analysis of Variance table for percentage of barley seed germination index treated with radio frequency at various temperatures and times

Source	DF	SS	MS	F	P
rep	3	66.5	22.166		
Treatment	12	1778.81	148.234	19.54	0.0000
Error	36	273.09	7.586		
Total	51	2118.39			

Grand Mean = 25.095

CV (%) = 10.98

Appendix 18 Analysis of Variance table for total protein of barley treated with radio frequency at various temperatures and times

Source	DF	SS	MS	F	P
Rep	3	0.26502	0.08834		
Treatment	12	0.40355	0.03363	1.17	0.3408
Error	36	1.03576	0.02877		
Total	51	1.70433			

Grand Mean = 10.587

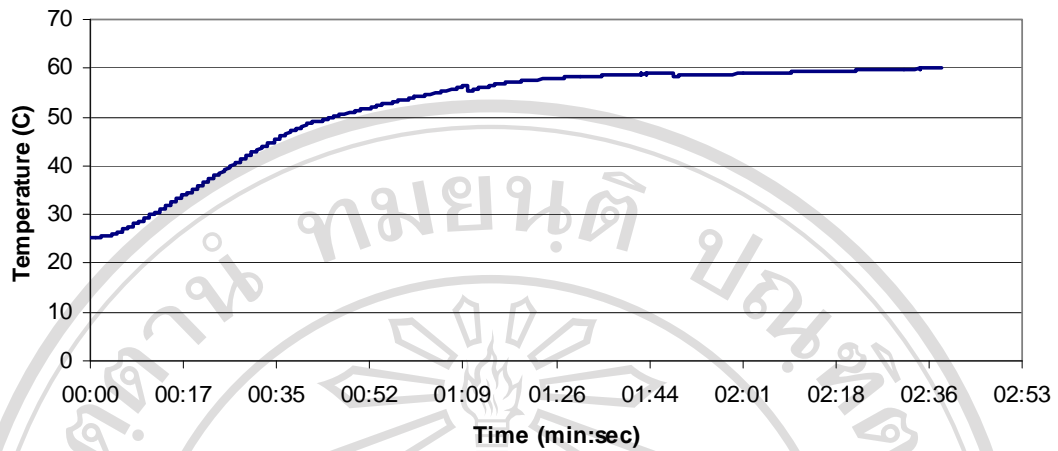
CV (%) = 1.60

Appendix 19 Analysis of Variance table for dehydrogenase activity of barley treated with radio frequency at various temperatures and times

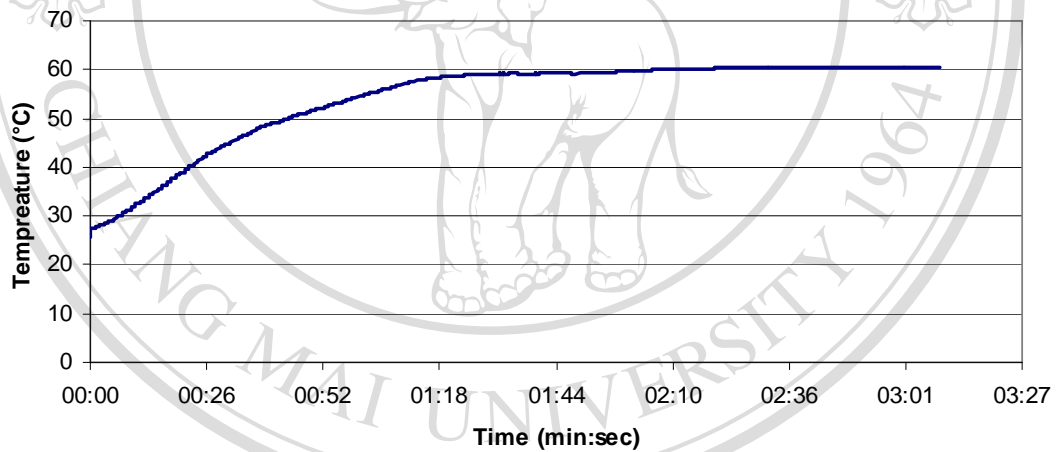
Source	DF	SS	MS	F	P
rep	3	2344.6	781.517		
tret	12	5130.3	427.524	5.63	0.0000
Error	36	2731.8	75.884		
Total	51	10206.7			

Grand Mean = 90.548

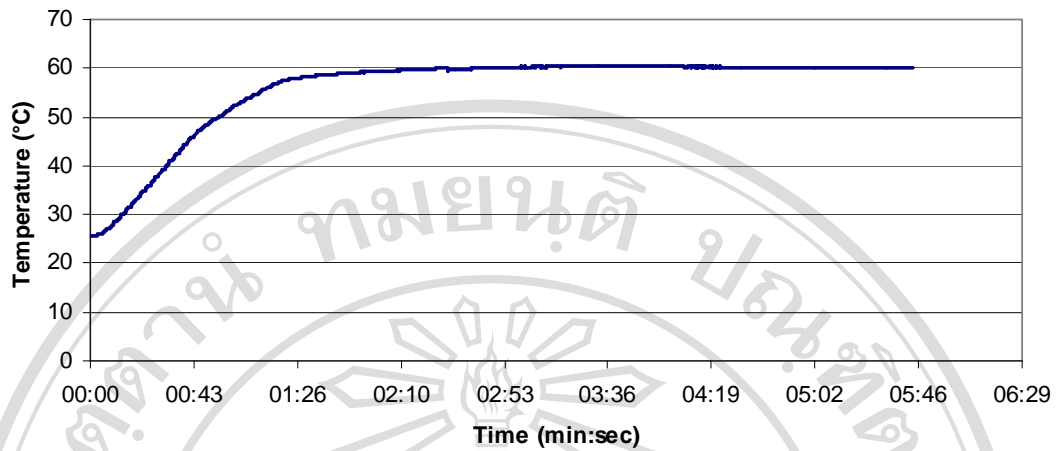
CV (%) = 9.62



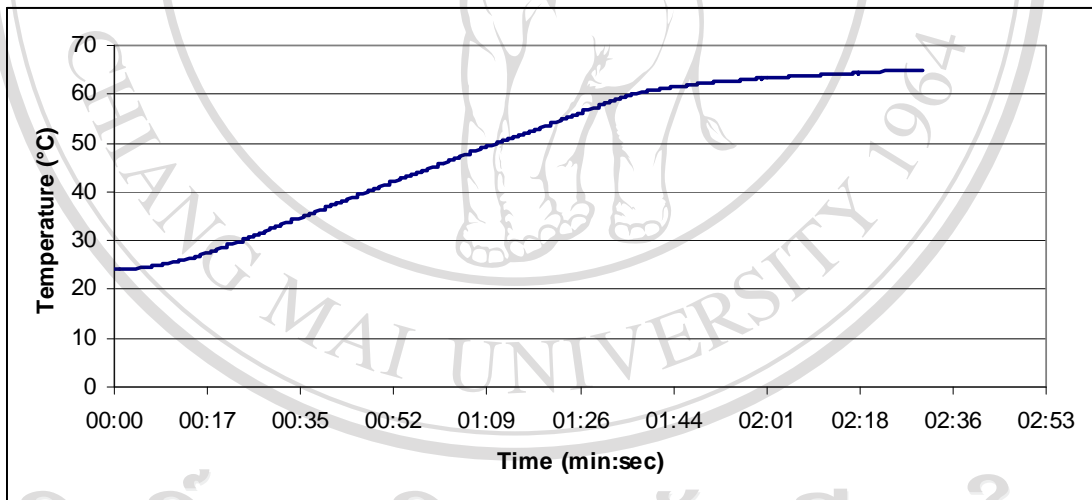
Appendix 20 Time-temperature curve for given input power of RF until 60°C



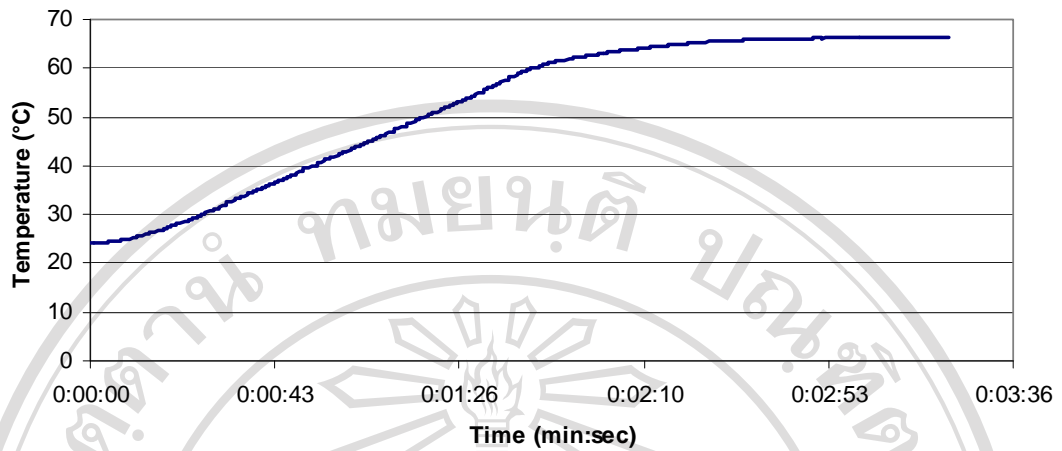
Appendix 21 Time-temperature curve for given input power of RF at 60°C for 1 minute



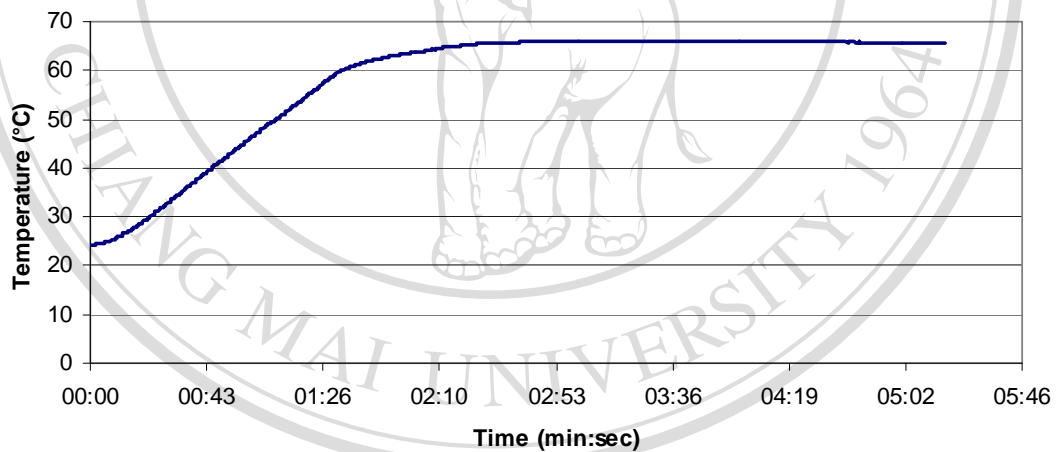
Appendix 22 Time-temperature curve for given input power of RF at 60°C for 3 minutes



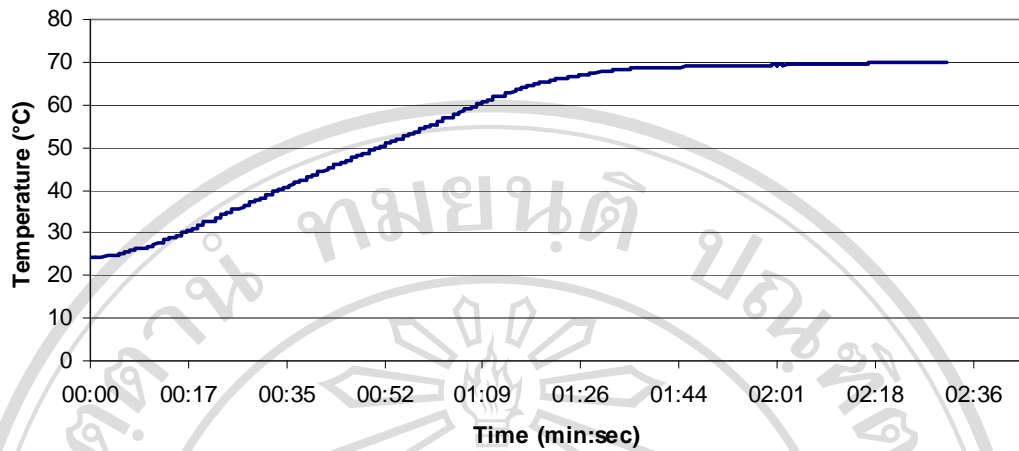
Appendix 23 Time-temperature curve for given input power of RF until 65°C



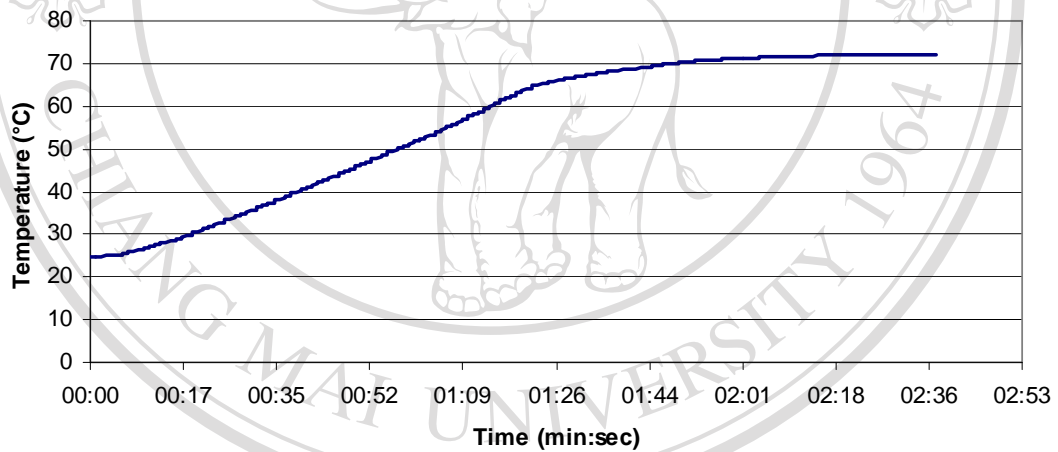
Appendix 24 Time-temperature curve for given input power of RF at 65°C for 1 minute



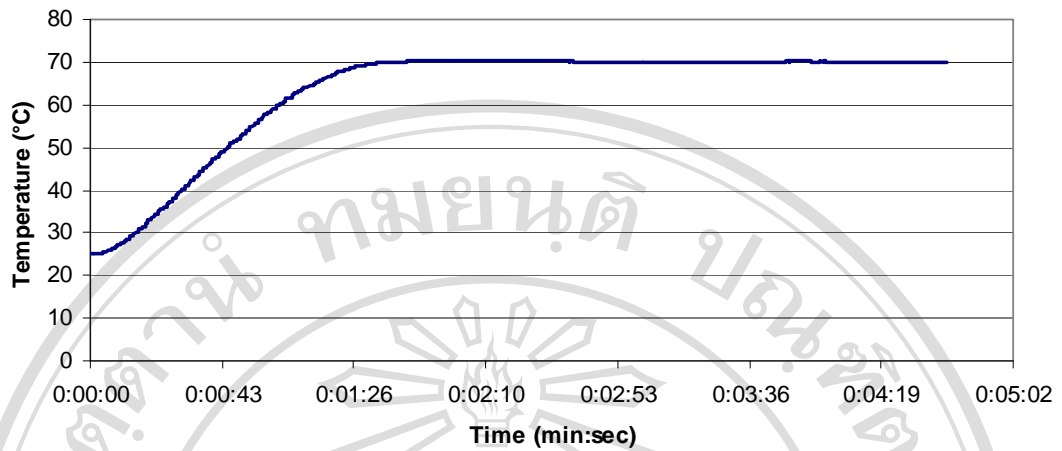
Appendix 25 Time-temperature curve for given input power of RF at 65°C for 3 minutes



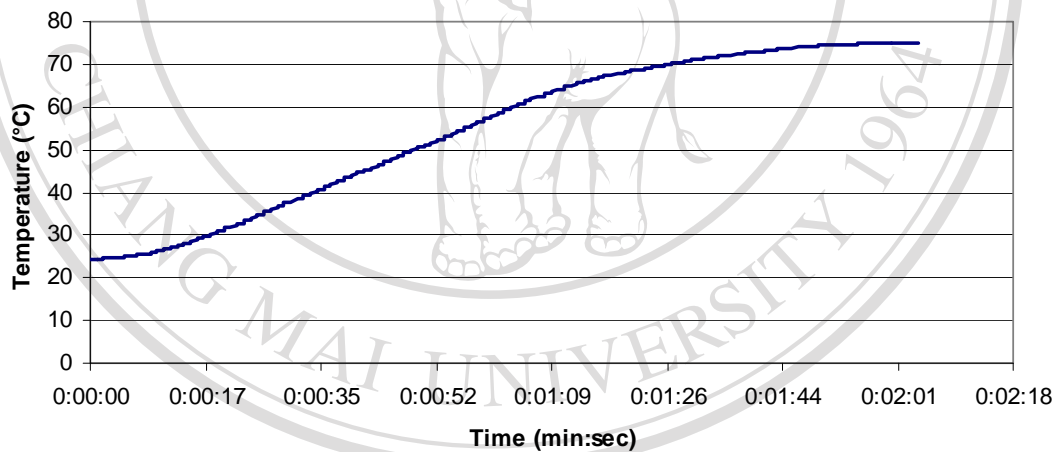
Appendix 26 Time-temperature curve for given input power of RF until 70°C



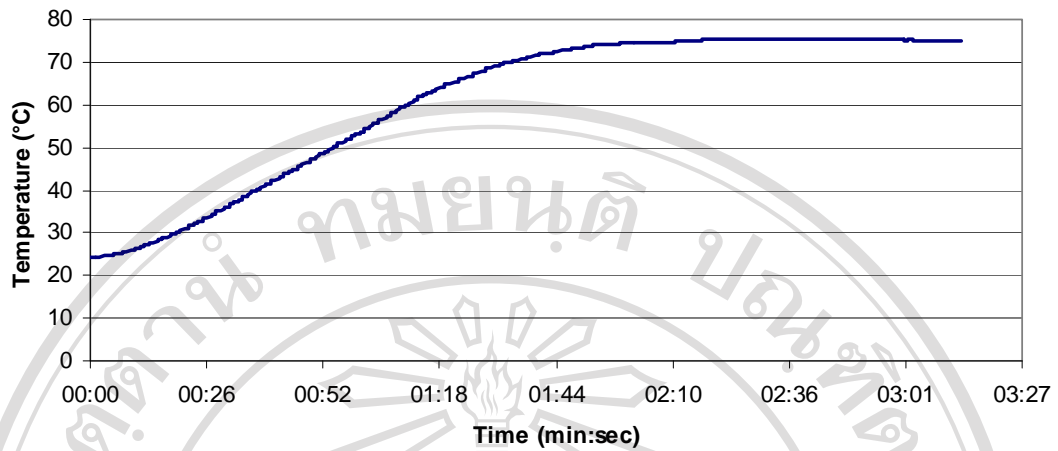
Appendix 27 Time-temperature curve for given input power of RF at 70°C for 1 minute



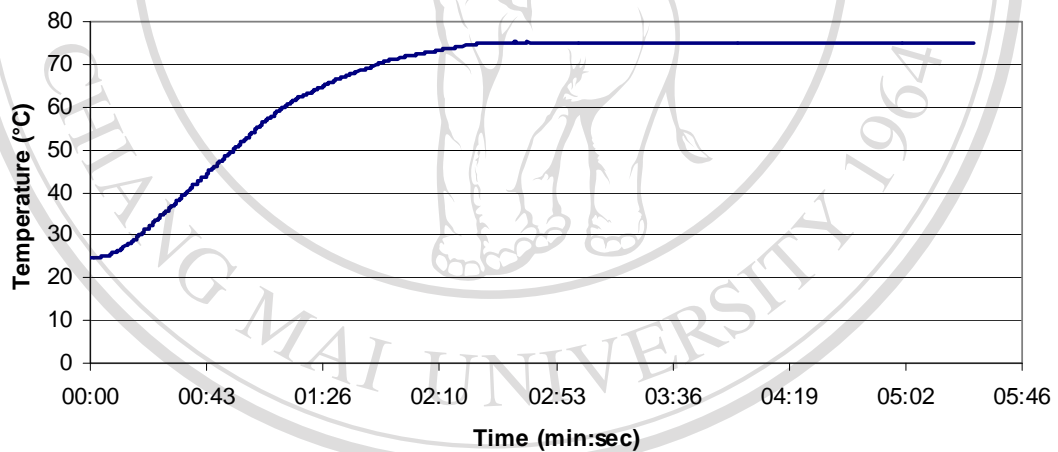
Appendix 28 Time-temperature curve for given input power of RF at 70°C for 3 minutes



Appendix 29 Time-temperature curve for given input power of RF until 75°C



Appendix 30 Time-temperature curve for given input power of RF at 75°C for 1 minute



Appendix 31 Time-temperature curve for given input power of RF at 75°C for 3 minutes

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