



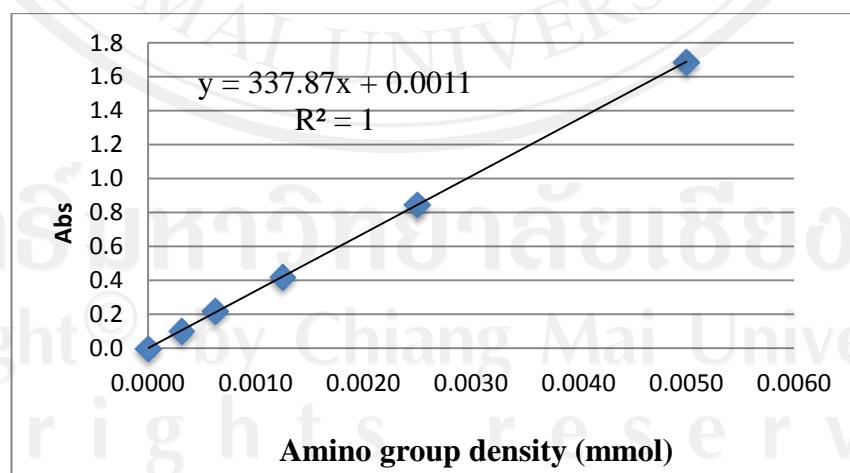
## APPENDICES

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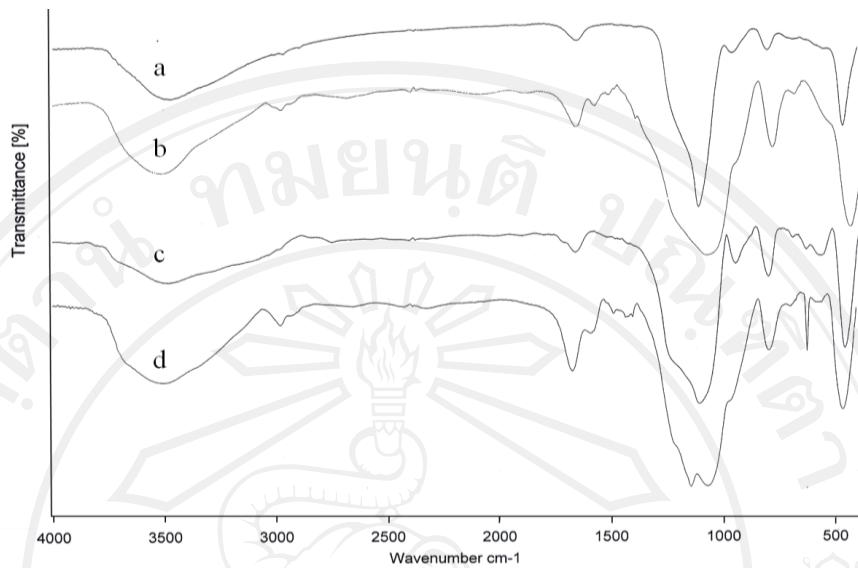
## APPENDIX A

**Table A.1** Calibration curve of 3-aminopropyltriethoxysilane [APTS] in ethanol

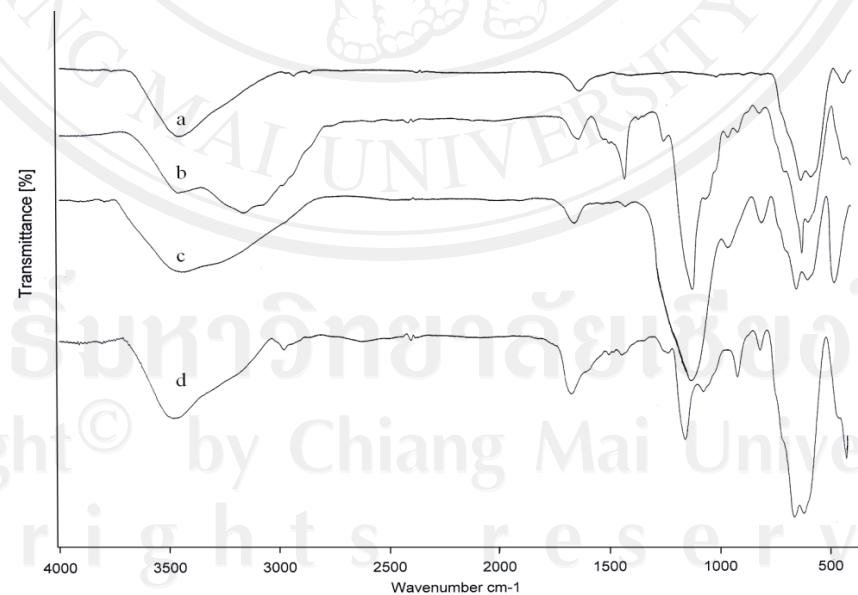
[APTPS] mM	Absorbance ( $\lambda_{\max} = 238 \text{ nm}$ )				SD
	1st	2nd	3rd	Average	
0.0000	0.000	0.000	0.000	0.00	0.0000
0.0003	0.102	0.101	0.102	0.02	0.0005
0.0013	0.212	0.211	0.213	0.212	0.0008
0.0025	1.420	0.421	0.419	0.420	0.0005
0.1000	0.846	0.845	0.485	0.845	0.0005
0.2000	1.690	1.688	1.685	1.688	0.0021



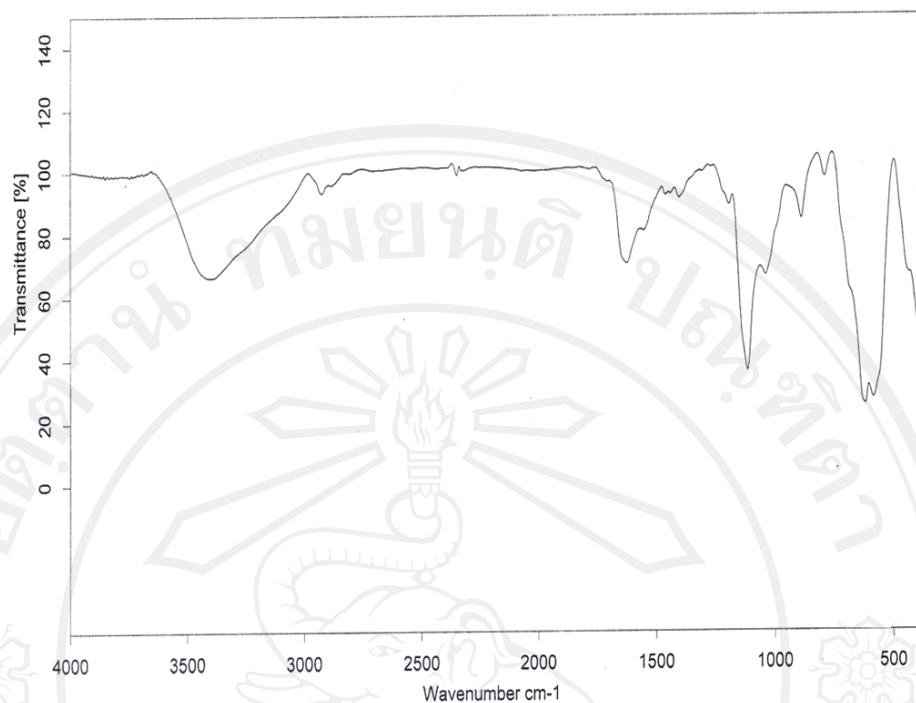
**Figure A.1** Calibration curve of 3-aminopropyltriethoxysilane in ethanol



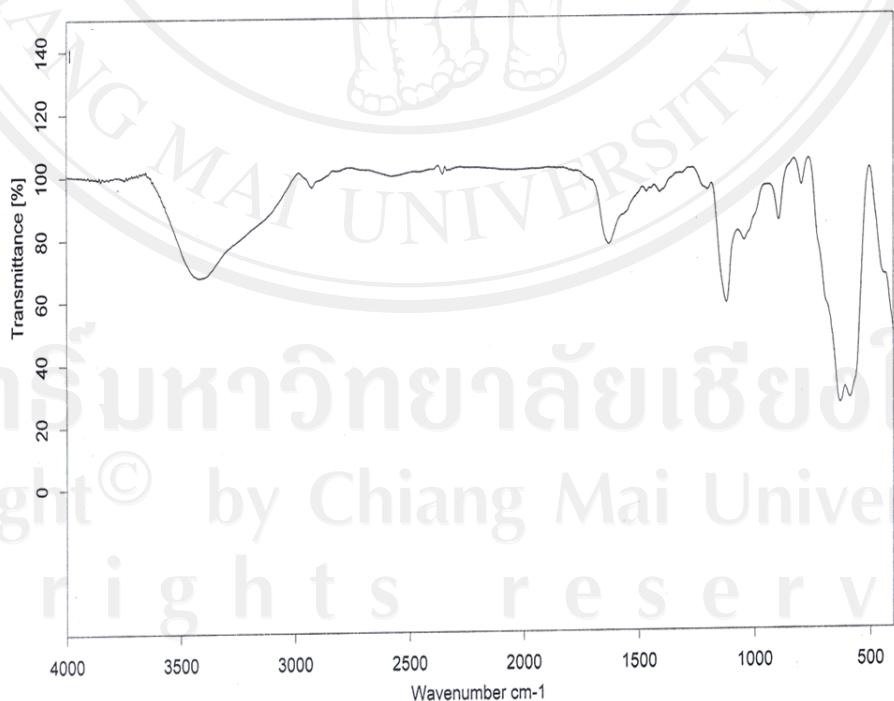
**Figure A.2** IR spectra of Silica (a), 3-aminopropyl silica **1** (b), silica-**2** (c), Si-DIPA (d)



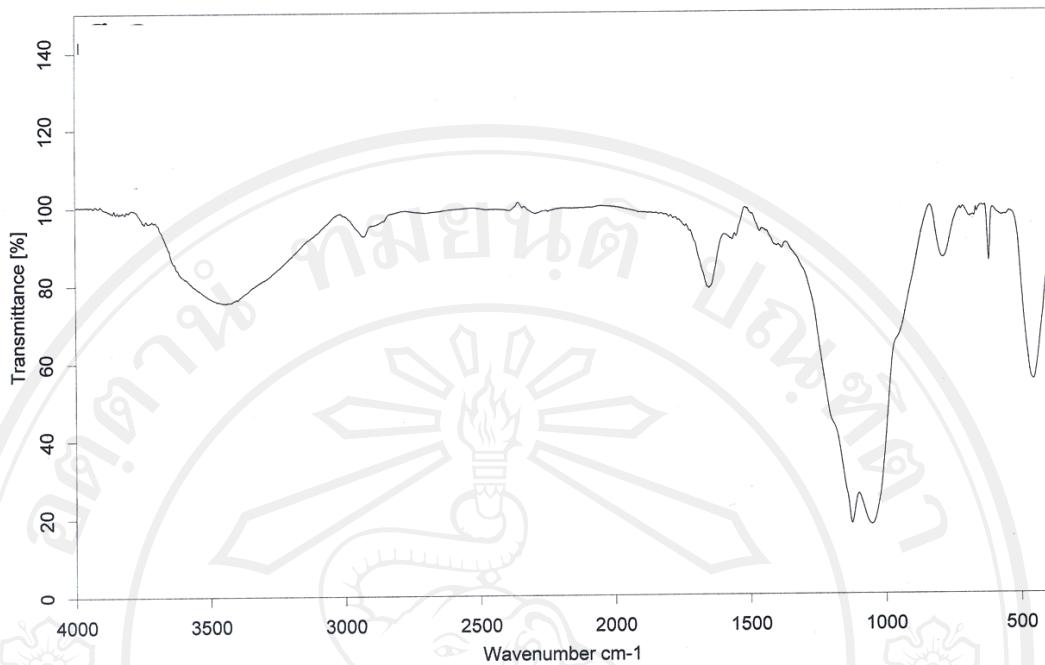
**Figure A.3** IR spectra of  $\text{Fe}_3\text{O}_4$  (a),  $\text{Fe}_3\text{O}_4$  -**2** (b),  $\text{Fe}_3\text{O}_4$  -**3** (c),  $\text{Fe}_3\text{O}_4$ DIPA



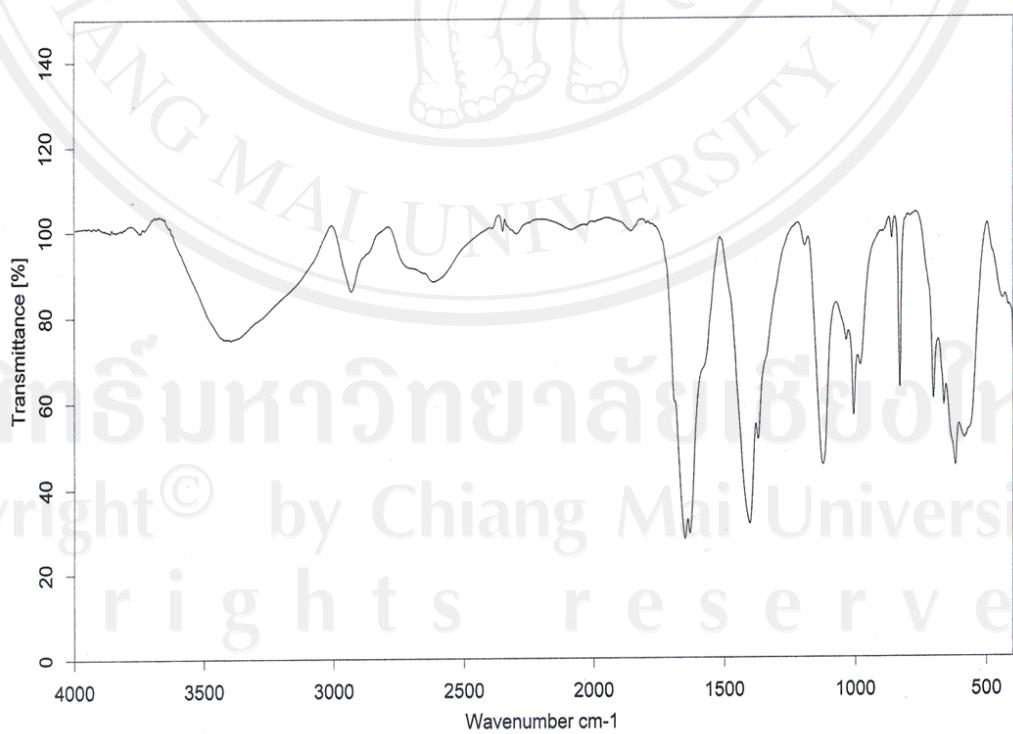
**Figure A.4** FTIR IR spectra of  $\text{Fe}_3\text{O}_4$ -Si-TEA



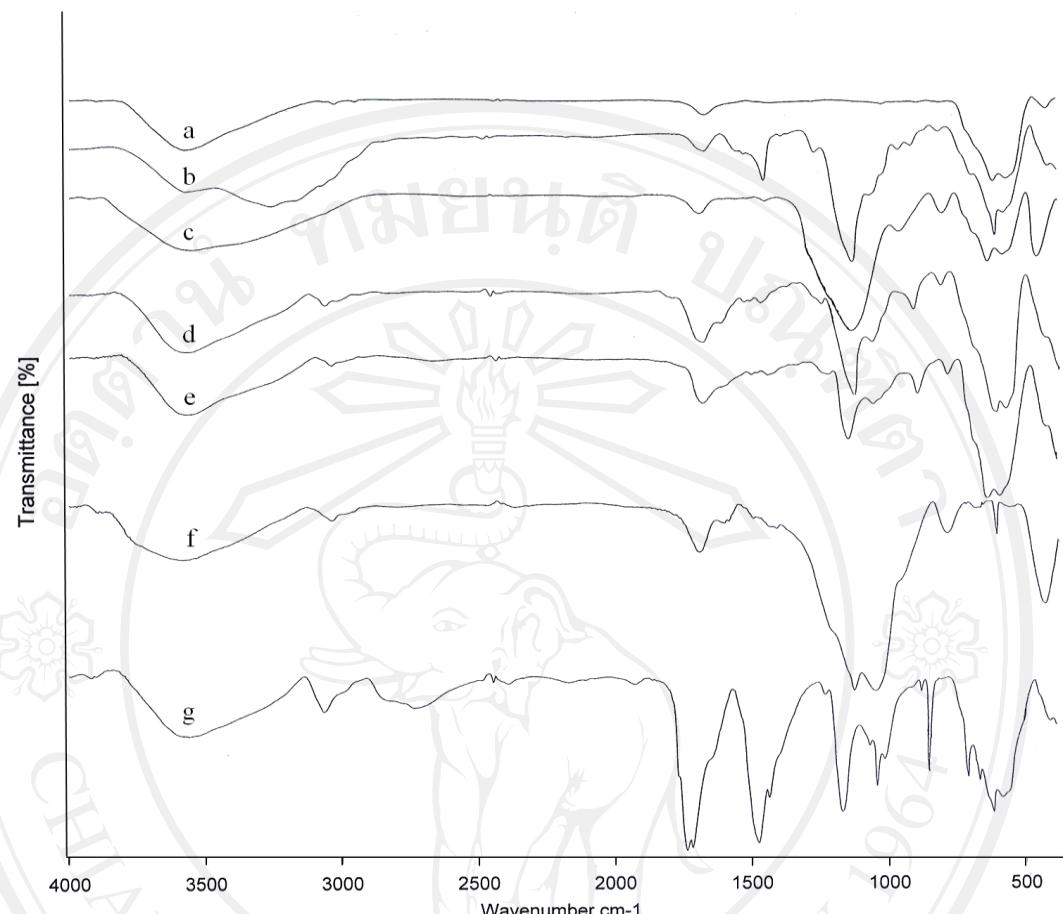
**Figure A.5** FTIR IR spectra of  $\text{Fe}_3\text{O}_4$ -Si-DIPA



**Figure A.6** FTIR IR spectra of  $\text{Fe}_3\text{O}_4$ -Si-NMM

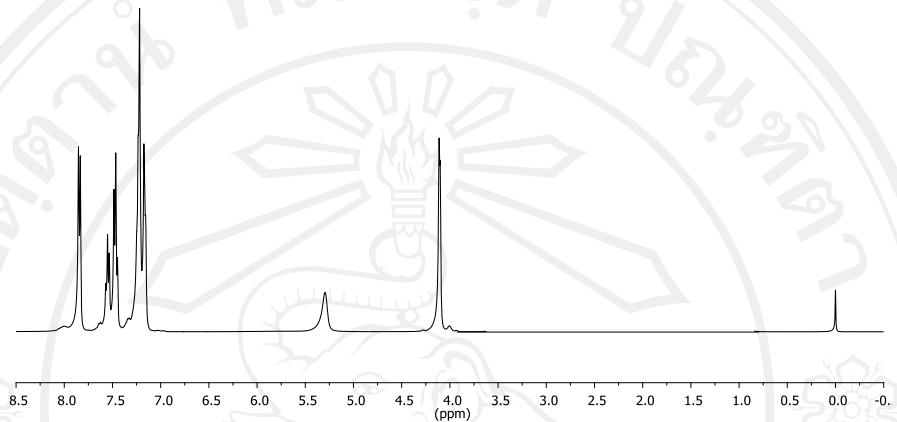
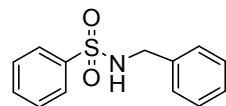


**Figure A.7** FTIR IR spectra of  $\text{Fe}_3\text{O}_4$ -Si-NMP

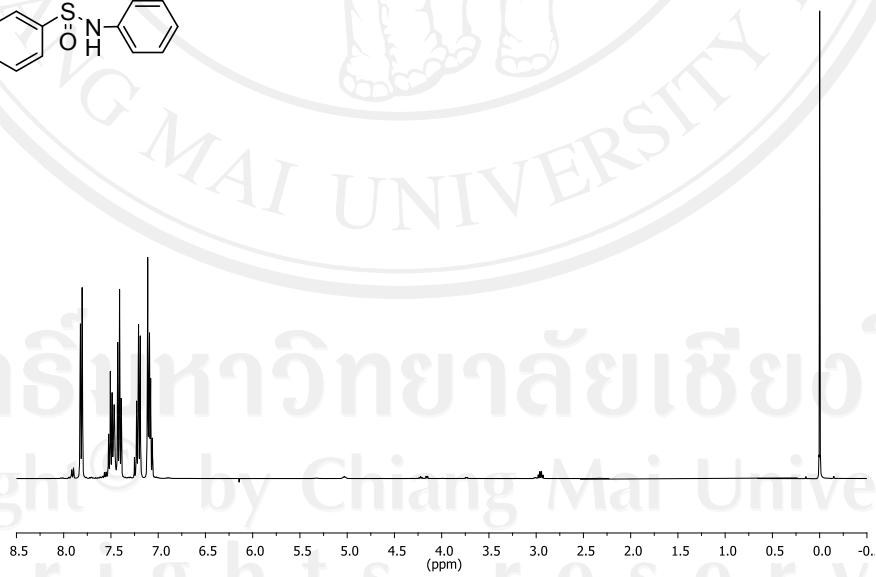
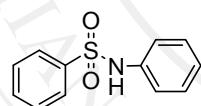


**Figure A.8** IR spectra of  $\text{Fe}_3\text{O}_4$  (a),  $\text{Fe}_3\text{O}_4\text{-2}$  (b),  $\text{Fe}_3\text{O}_4\text{-3}$  (c),  $\text{Fe}_3\text{O}_4\text{-Si-TEA}$  (d),  $\text{Fe}_3\text{O}_4\text{-Si-DIPA}$  (e),  $\text{Fe}_3\text{O}_4\text{-Si-NMM}$  (f),  $\text{Fe}_3\text{O}_4\text{-Si-NMP}$  (g)

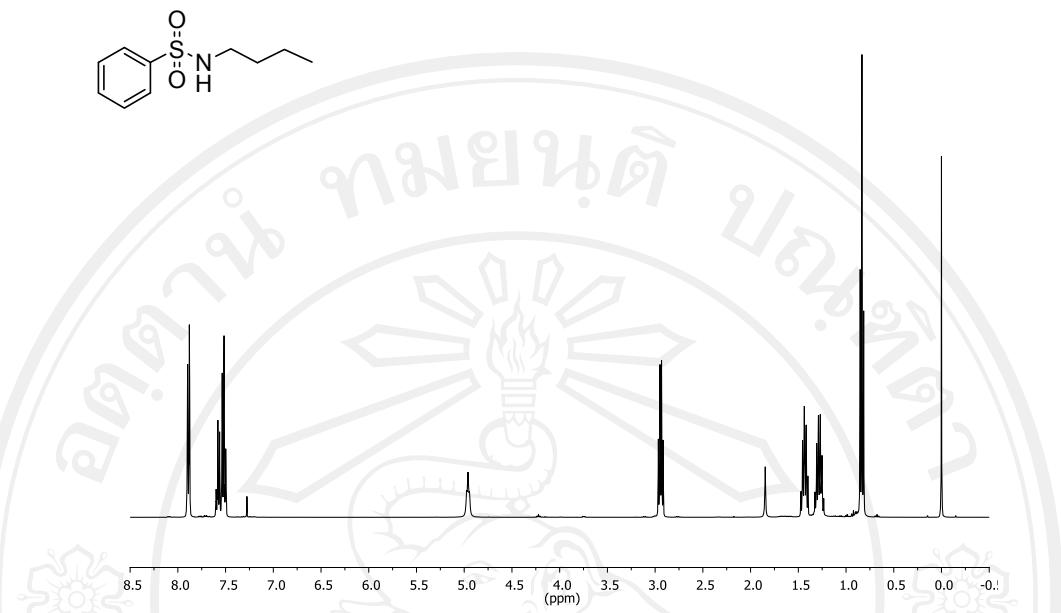
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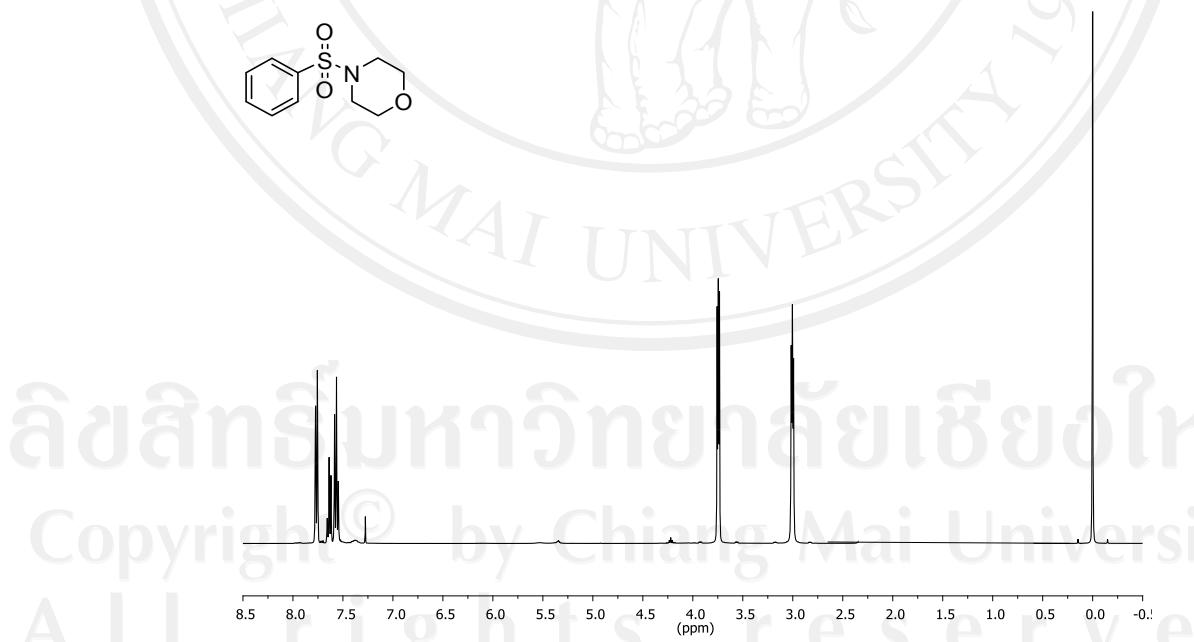
**Figure A.9** NMR spectra of *N*-Benzyl-benzenesulfonamide (**1a**)



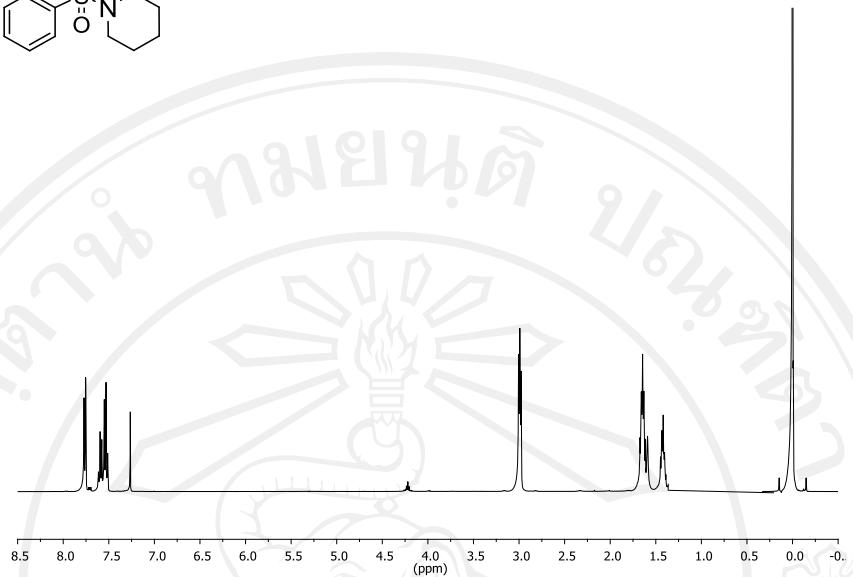
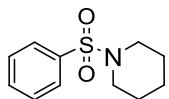
**Figure A.10** NMR spectra of *N*-Phenylbenzenesulfonamide (**1b**)



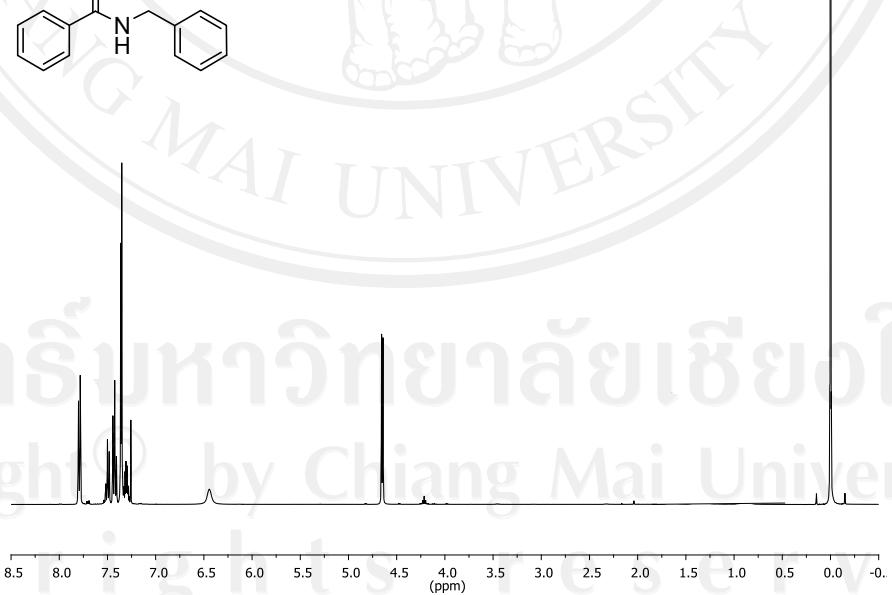
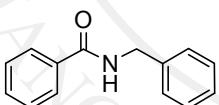
**Figure A.11** NMR spectra of *N*-Butylbenzenesulfonamide (**1c**)



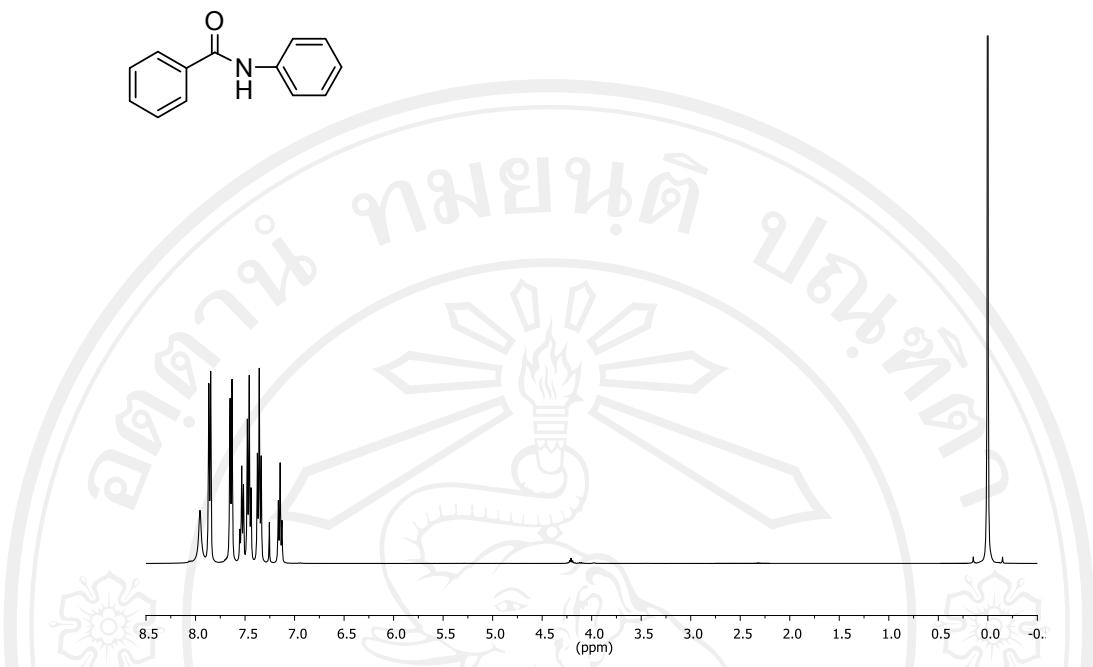
**Figure A.12** NMR spectra of 4-Benzenesulfonylmorpholine (**1d**)



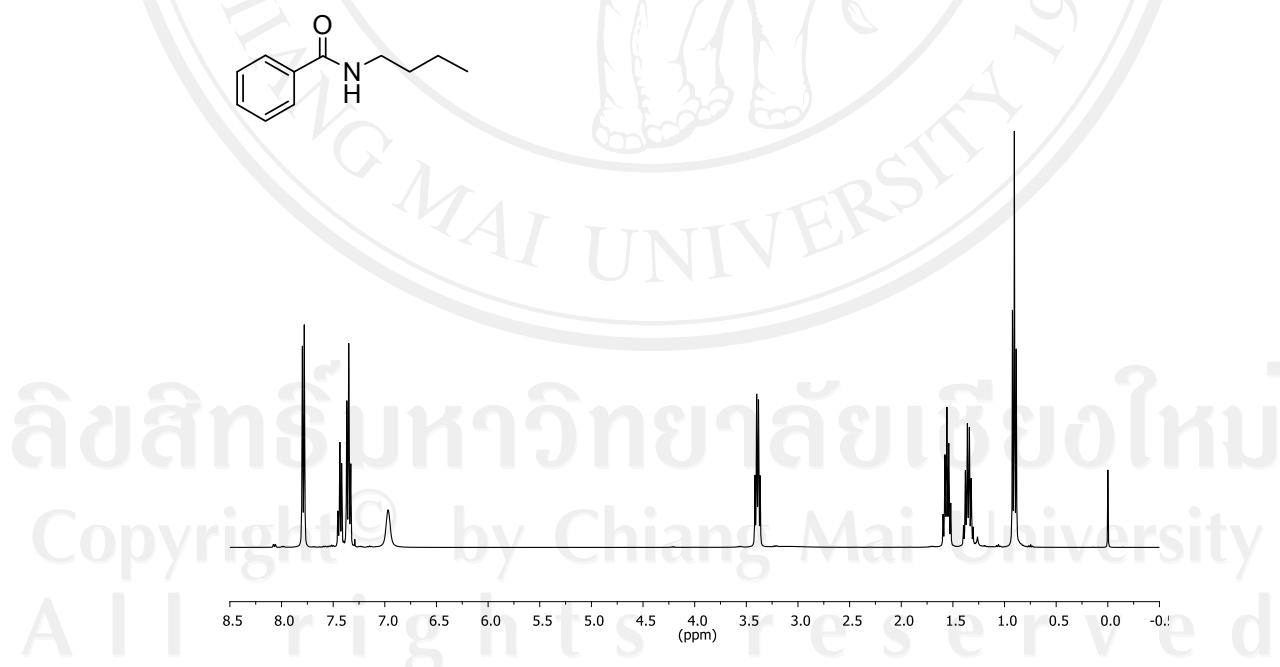
**Figure A.13** NMR spectra of 1-Benzenesulfonylpiperidine (**1e**)



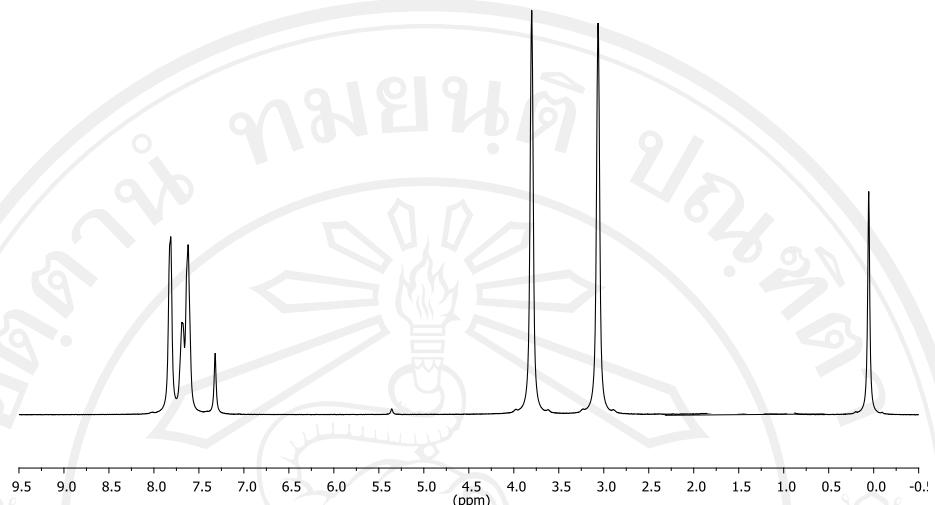
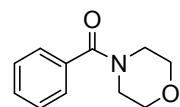
**Figure A.14** NMR spectra of *N*-Benzylbenzamide (**2a**)



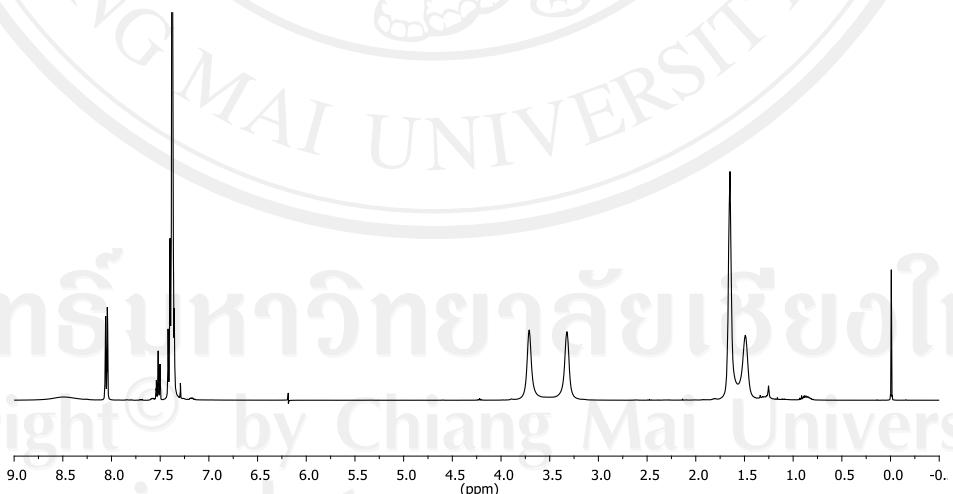
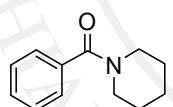
**Figure A.15** NMR spectra of *N*-Phenylbenzamide (**2b**)



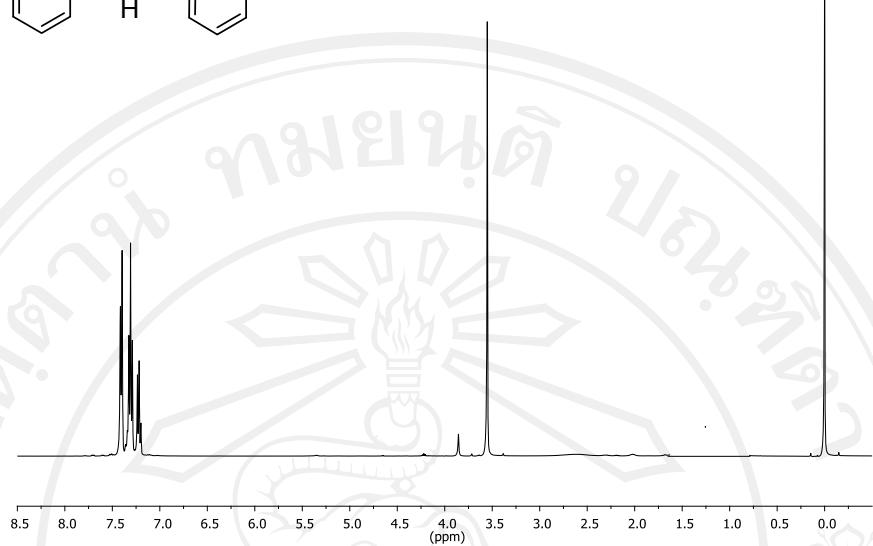
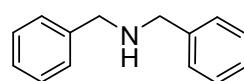
**Figure A.16** NMR spectra of *N*-Butylbenzamide (**2c**)



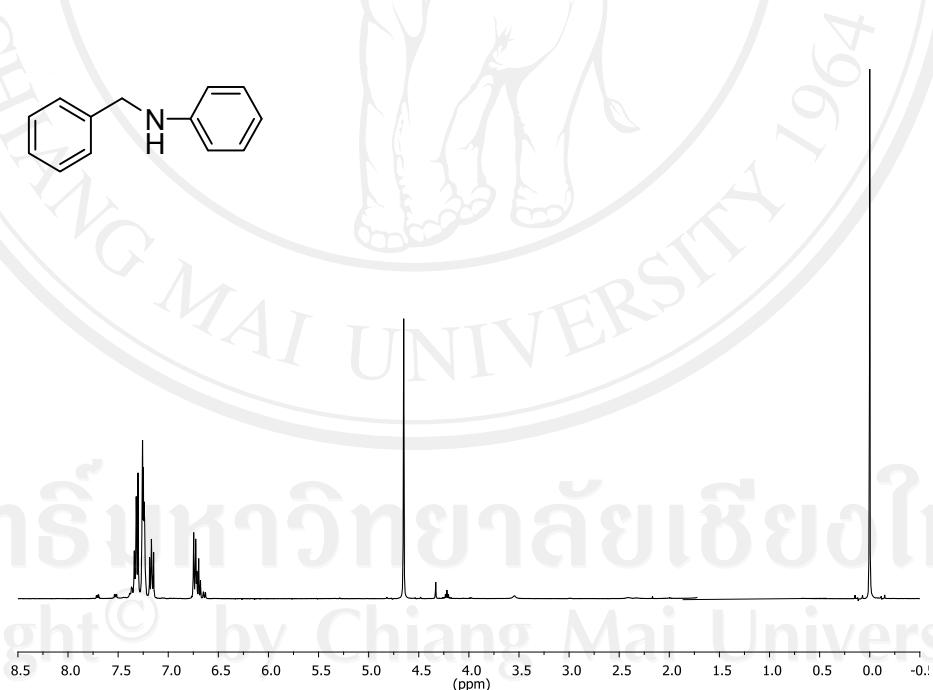
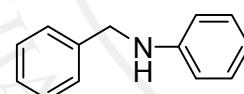
**Figure A.17** NMR spectra of Morpholin-4-yl-phenylmethanone (**2d**)



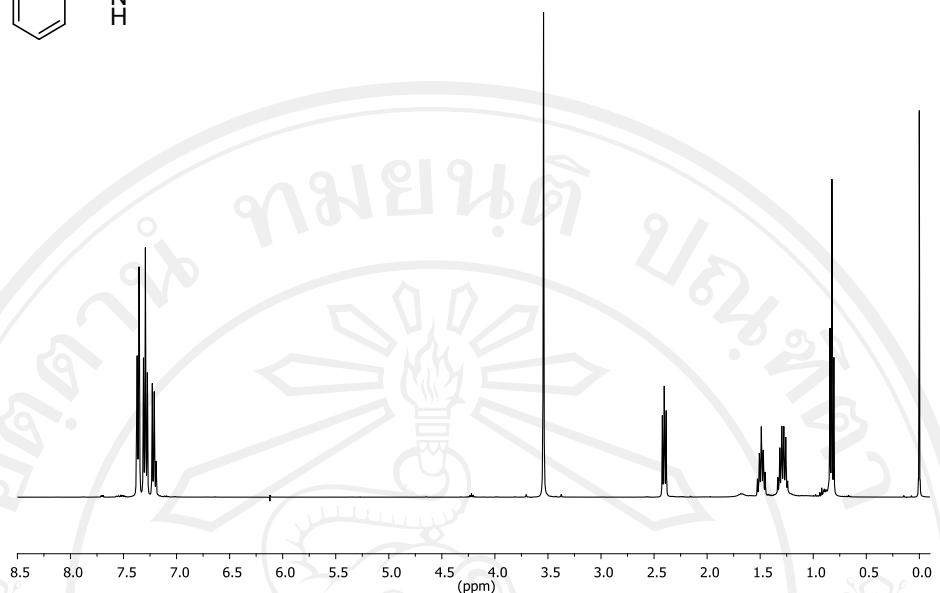
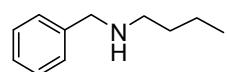
**Figure A.18** NMR spectra of Phenyl-piperidin-1-yl-methanone (**2e**)



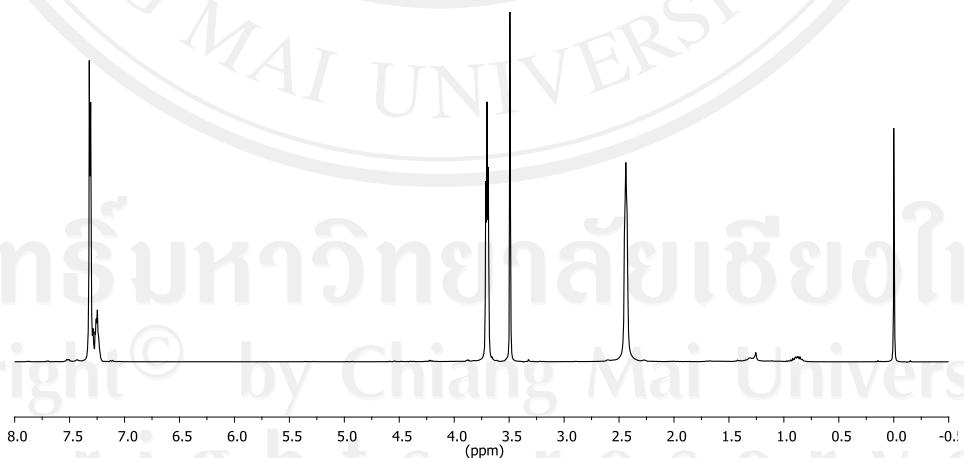
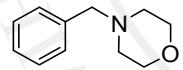
**Figure A.19** NMR spectra of Dibenzylamine (**3a**)



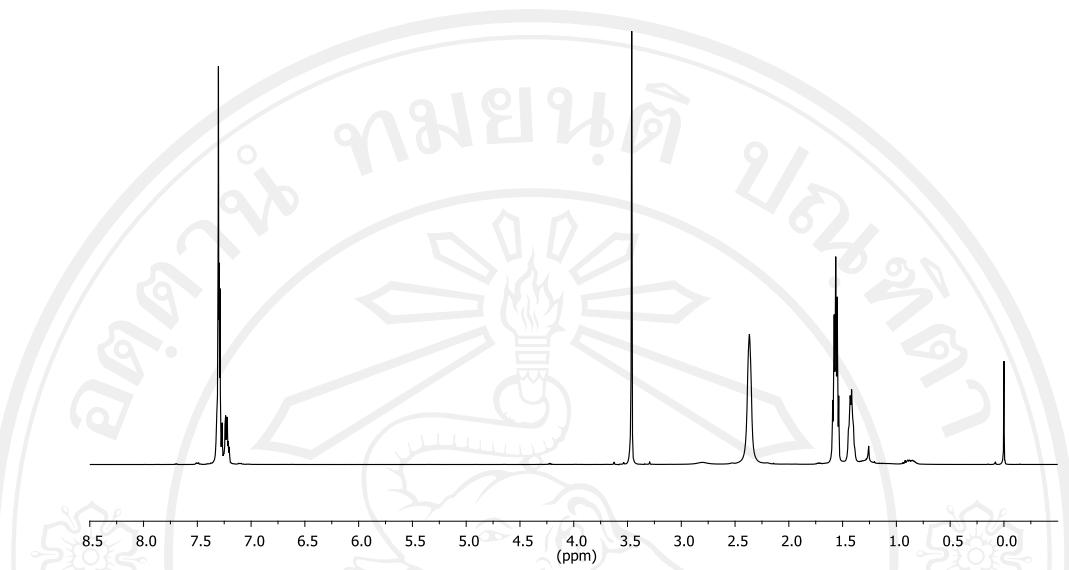
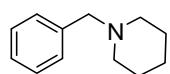
**Figure A.20** NMR spectra of Benzylphenylamine (**3b**)



**Figure A.21** NMR spectra of Benzylbutylamine (**3c**)



**Figure A.22** NMR spectra of 4-Benzylmorpholine (**3d**)



**Figure A.23** NMR spectra of 1-Benzylpiperidine (**3e**)

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