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APPENDIX

ศูนย์วิทยทรัพยากร
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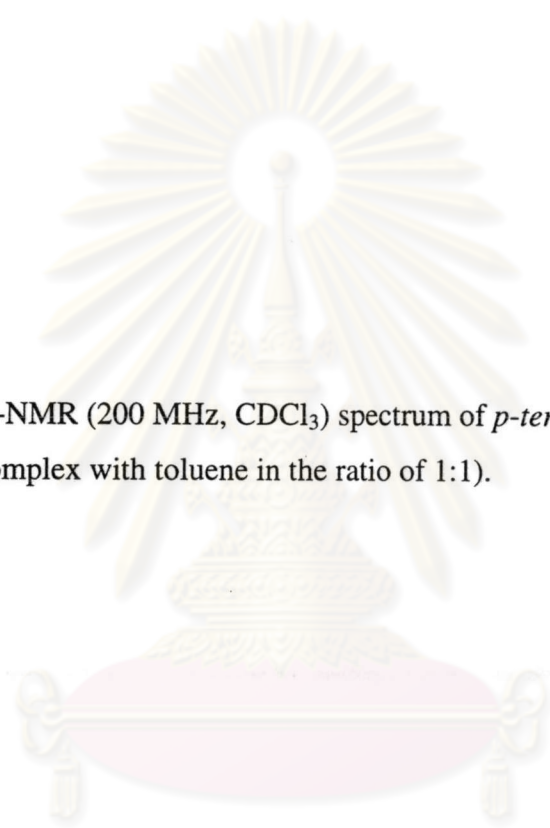


Figure A.1 $^1\text{H-NMR}$ (200 MHz, CDCl_3) spectrum of *p-tert*-butylcalix[4]arene (complex with toluene in the ratio of 1:1).

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Figure A.2 $^1\text{H-NMR}$ (200 MHz, CDCl_3) spectrum of 4-(2'-bromoethoxy) benzaldehyde, **1b**.

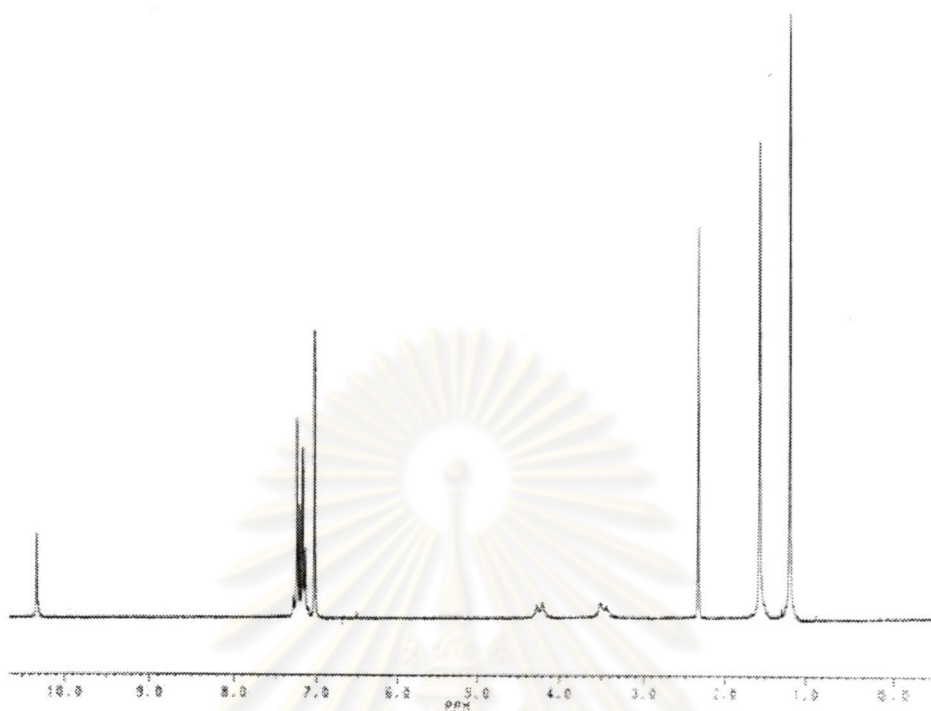


Figure A.1 ¹H-NMR (200 MHz, CDCl₃) spectrum of *p*-*tert*-butylcalix[4]arene (complex with toluene in the ratio of 1:1).

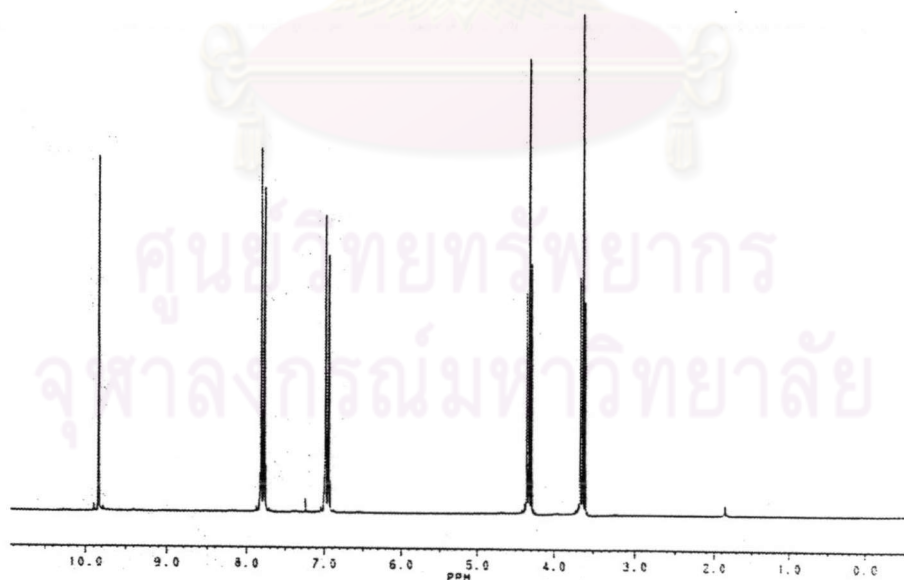


Figure A.2 ¹H-NMR (200 MHz, CDCl₃) spectrum of 4-(2'-bromoethoxy)benzaldehyde, **1b**.

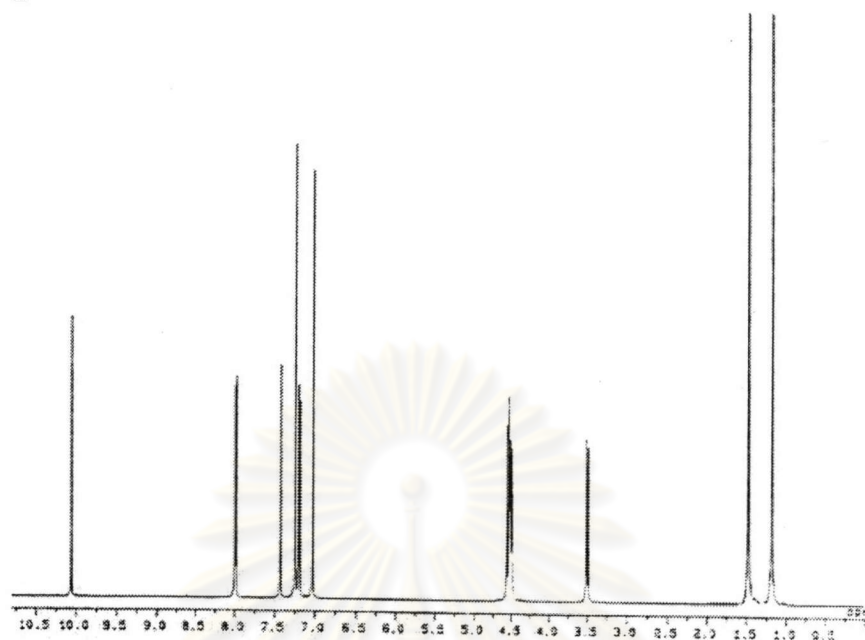


Figure A.3 $^1\text{H-NMR}$ (500 MHz, CDCl_3) spectrum of 25,27-di((4-ethoxy)-benzaldehyde)-*p*-*tert*-butylcalix[4]arene, **2b**.

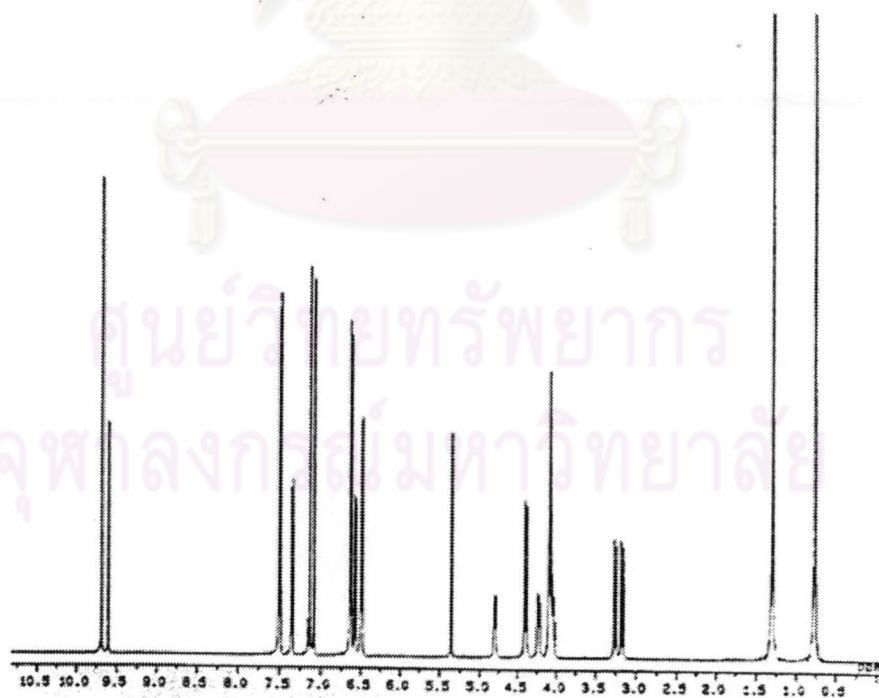


Figure A.4 $^1\text{H-NMR}$ (500 MHz, CDCl_3) spectrum of 25,26,27-tri((4-ethoxy)-benzaldehyde)-*p*-*tert*-butylcalix[4]arene, **3b**.

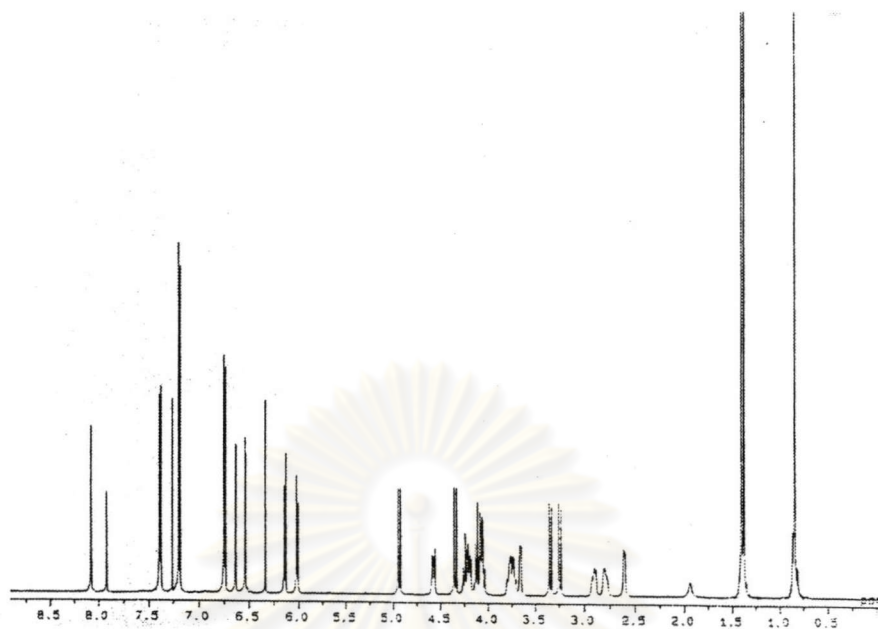


Figure A.5 $^1\text{H-NMR}$ (500 MHz, CDCl_3) spectrum of 25,26,27- N, N', N'' , - tris((4-ethoxy)benzyl)ethylenetriimine-*p-tert*-butylcalix[4]arene, **4b**.

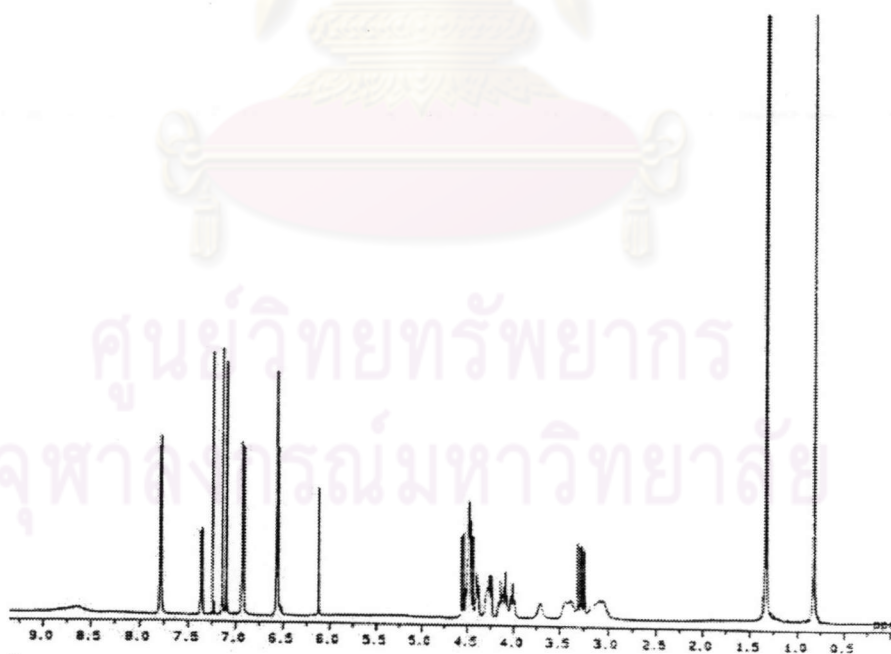


Figure A.6 $^1\text{H-NMR}$ (500 MHz, CDCl_3) spectrum of 25,26,27- N, N', N'' , - tris((4-ethoxy)benzyl)ethylenetetraamine-*p-tert*-butylcalix[4]arene. 4HCl , **5b**.

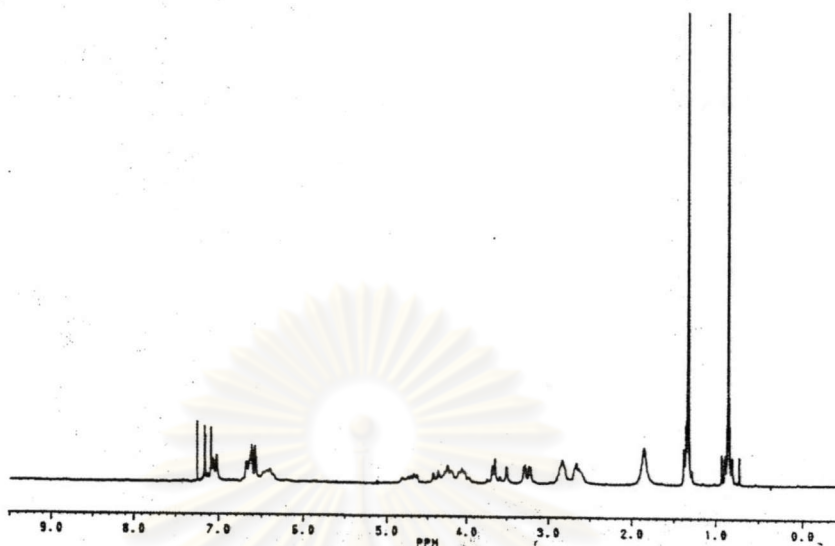
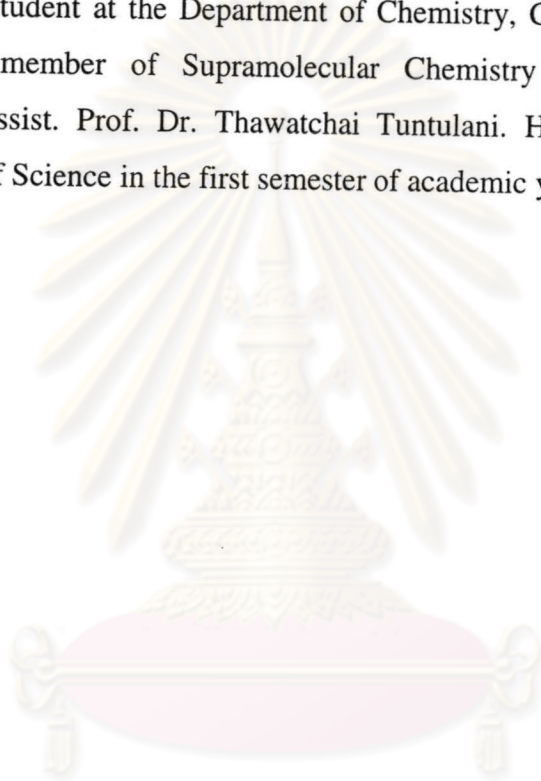


Figure A.7 $^1\text{H-NMR}$ (500 MHz, CDCl_3) spectrum of 25,26,27-*N, N', N''*-tris((4-ethoxy)benzyl)ethylenetetraamine-*p-tert*-butylcalix[4]arene. **6b.**

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VITA

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