

Electronic Supporting Information

Multiple Deprotonation of Primary Aromatic Diamines by LiAlH_4

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General Experimental Details of NMR Spectroscopic Studies

NMR spectra were obtained in d_8 -THF which had been dried over a sodium mirror. A Bruker 500 MHz TCI Cryoprobe Spectrometer were used and all spectra were recorded at 298K.

1. NMR Spectra

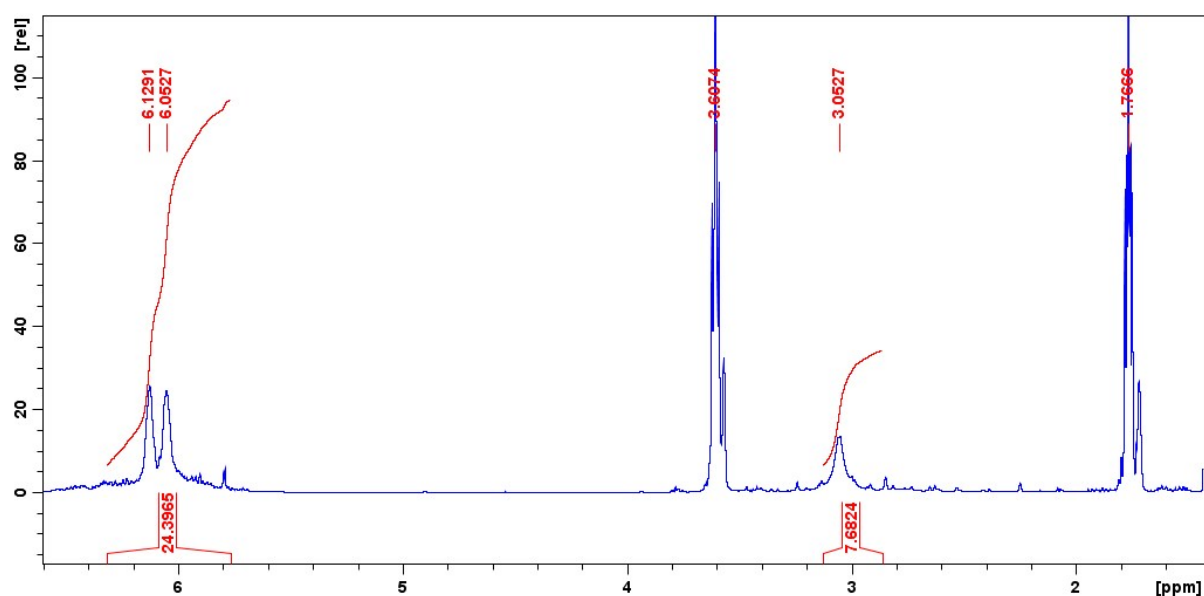


Figure 1.1 ^1H NMR Spectrum of $[\{\text{Al}(\mathbf{1H}_2)\}_2\{\text{Al}(\mathbf{1H})_2\}_2][\text{Li}(\text{THF})_2]_4$ (**3**) in d_8 -THF

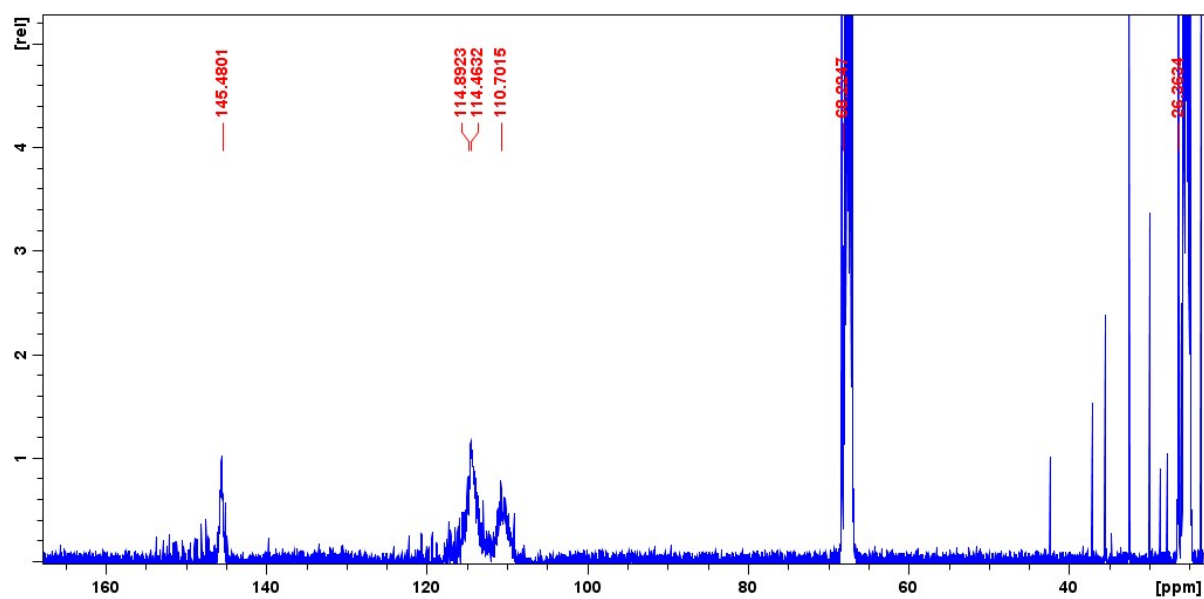


Figure 1.2 ^{13}C NMR Spectrum of $[\{\text{Al}(\mathbf{1H}_2)\}_2\{\text{Al}(\mathbf{1H})_2\}_2][\text{Li}(\text{THF})_2]_4$ (**3**) in d_8 -THF

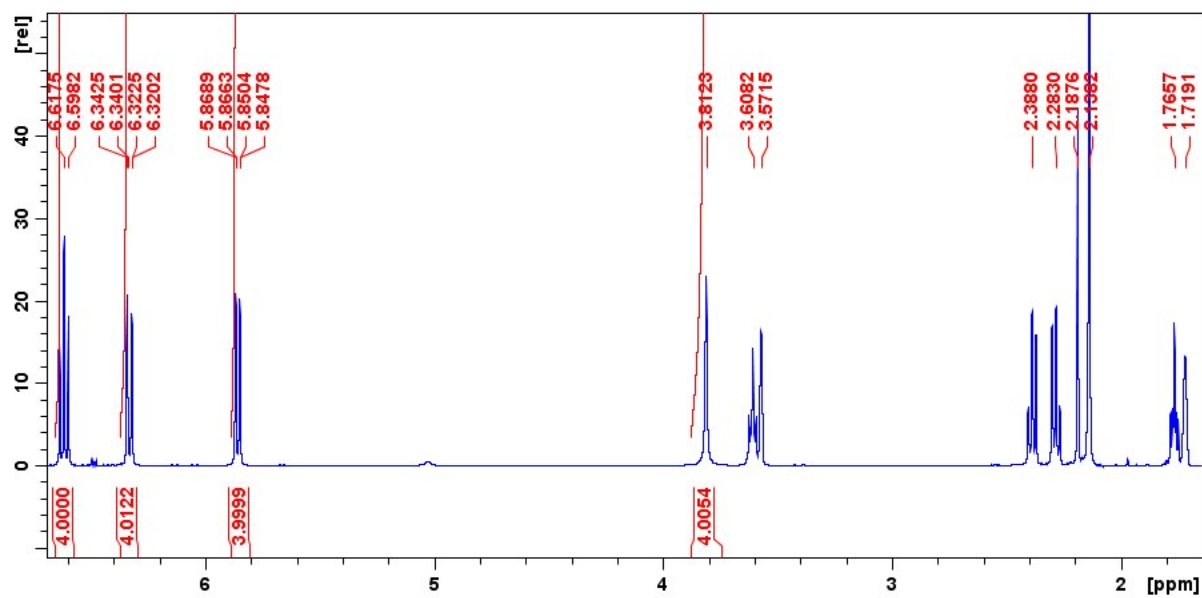


Figure 1.3 ^1H NMR Spectrum of $[\text{Al}(\mathbf{2H}_2)_2][\text{Li}(\text{PMDETA})(\text{THF})]^+$ (**4**): in d_8 -THF

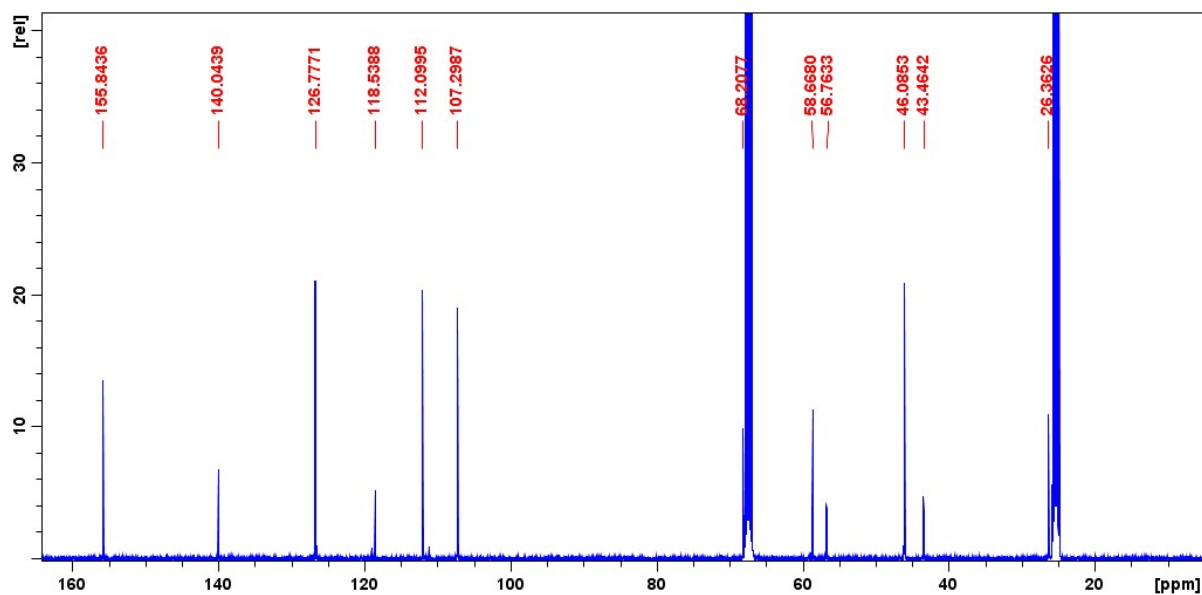


Figure 1.4 ^{13}C NMR Spectrum of $[\text{Al}(\mathbf{2H}_2)_2][\text{Li}(\text{PMDETA})(\text{THF})]^+$ (**4**): in d_8 -THF

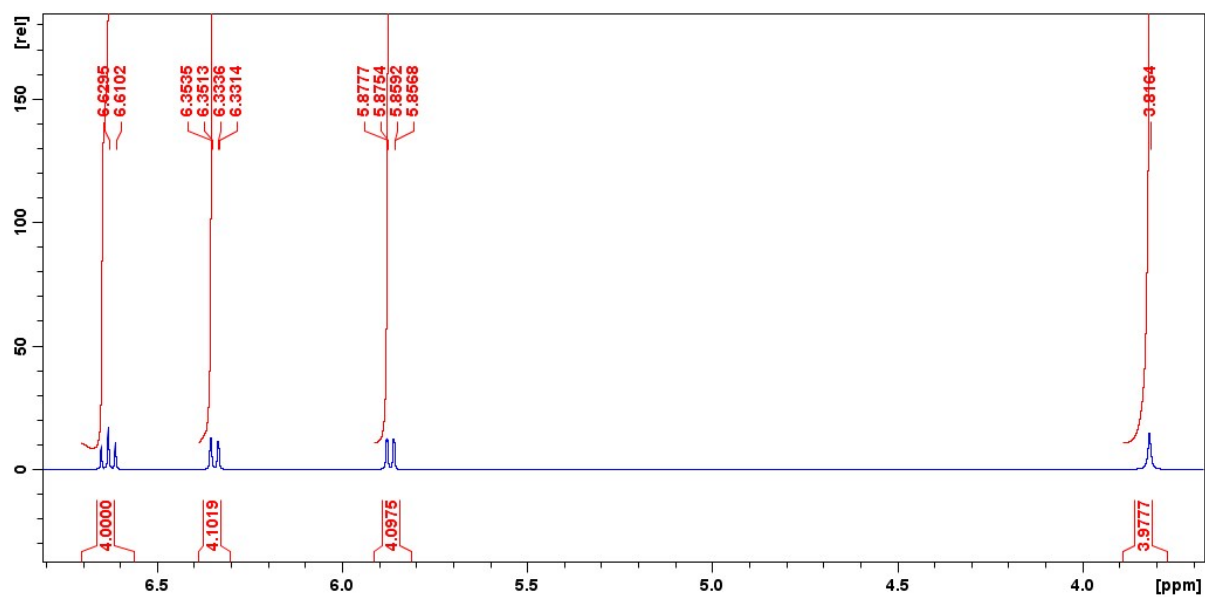


Figure 1.5 ^1H NMR Spectrum of $[\text{Al}(\text{2H}_2)_2]^-[\text{Li}(\text{TMEDA})_{1.5}(\text{THF})_{0.5}]^+$ (5): in $\text{d}_8\text{-THF}$

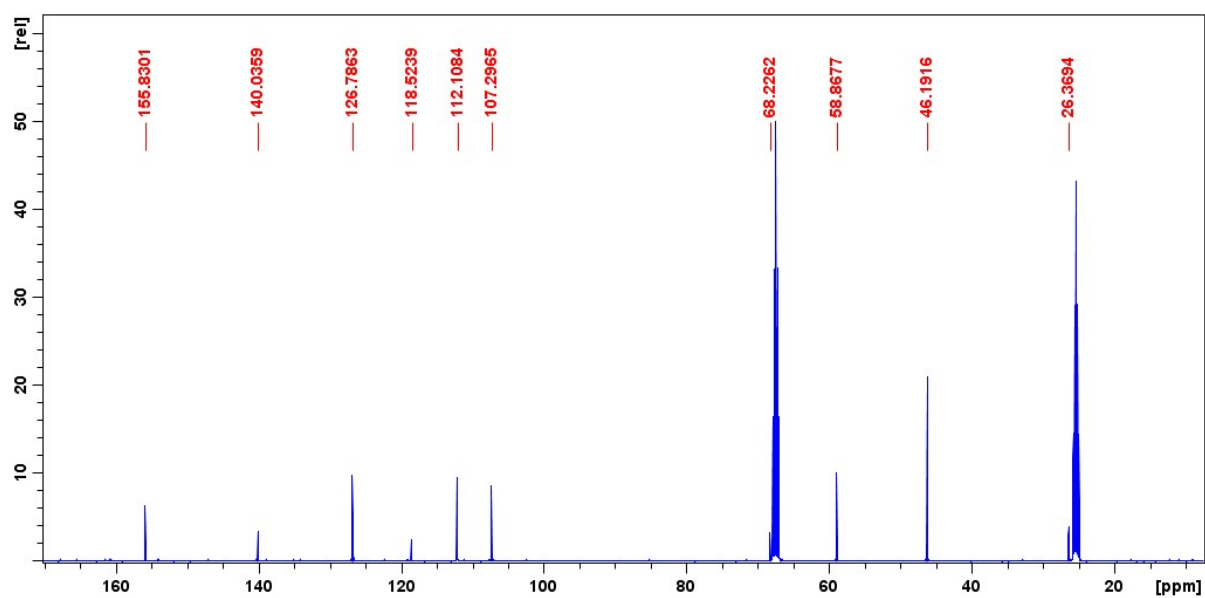


Figure 1.6 ^{13}C NMR Spectrum of $[\text{Al}(\text{2H}_2)_2]^-[\text{Li}(\text{TMEDA})_{1.5}(\text{THF})_{0.5}]^+$ (5): in $\text{d}_8\text{-THF}$