Electronically-Deficient Biiridacarbaborane Clusters with Bridging μ,η -COD Ligand

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SUPPORTING INFORMATION

Captions to Figures

Figure 1. 400.13 MHz ^1H NMR spectrum of $[3-\{(1-3)-\eta^3-\text{C}_8\text{H}_{13}\}-1,2-(\text{CH}_3)_2-3,1,2\text{-}closo\text{-IrC}_2\text{B}_9\text{H}_9]$ (**1**) in CDCl_3 solution at $-60\text{ }^\circ\text{C}$ showing the assignment of proton resonances. Resonances of complex **4** are marked with asterisk.

Figure 2. 100.61 MHz $^{13}\text{C}\{^1\text{H}\}$ NMR spectrum of $[3-\{(1-3)-\eta^3-\text{C}_8\text{H}_{13}\}-1,2-(\text{CH}_3)_2-3,1,2\text{-}closo\text{-IrC}_2\text{B}_9\text{H}_9]$ (**1**) in CD_2Cl_2 solution at $-93\text{ }^\circ\text{C}$ showing the assignment of carbon resonances. Resonances of complex **4** are marked with asterisk.

Figure 3. 400.13 MHz 2D $[^1\text{H}-^1\text{H}]$ COSY spectrum of $[\text{Ir}(\eta^1, \eta^5\text{-}1,2-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_8)(\eta^1, \eta^4\text{-C}_8\text{H}_{12})\text{Ir}(\eta^5\text{-}1,2-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_9)]$ (**2**) in CD_2Cl_2 solution at $22\text{ }^\circ\text{C}$ showing the assignment of proton resonances.

Figure 4. 400.13 MHz 2D $[^{13}\text{C}-^1\text{H}]$ HSQC spectrum of $[\text{Ir}(\eta^1, \eta^5\text{-}1,2-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_8)(\eta^1, \eta^4\text{-C}_8\text{H}_{12})\text{Ir}(\eta^5\text{-}1,2-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_9)]$ (**2**) in CD_2Cl_2 solution at $22\text{ }^\circ\text{C}$ showing the assignment of proton and carbon resonances.

Figure 5. 600.28 MHz 2D $[^1\text{H}-^1\text{H}]$ COSY spectrum of $[\text{Ir}(\eta^1, \eta^5\text{-}1,8-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_8)(\eta^1, \eta^4\text{-C}_8\text{H}_{12})\text{Ir}(\eta^5\text{-}1,2-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_9)]$ (**3**) in CD_2Cl_2 solution at $22\text{ }^\circ\text{C}$ showing the assignment of proton resonances.

Figure 6. 600.28 MHz 2D $[^1\text{H}-^1\text{H}]$ HSQC spectrum of $[\text{Ir}(\eta^1, \eta^5\text{-}1,8-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_8)(\eta^1, \eta^4\text{-C}_8\text{H}_{12})\text{Ir}(\eta^5\text{-}1,2-(\text{CH}_3)_2\text{C}_2\text{B}_9\text{H}_9)]$ (**3**) in CD_2Cl_2 solution at $22\text{ }^\circ\text{C}$ showing the assignment of proton and carbon resonances.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

Figure 5.

Figure 6.