

Syntheses of p-Phenylene-and p-Biphenylene-Bridged Methylated Binuclear Ferrocenes

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p-Phenylene and p-biphenylene-bridged methylated cyclopentadienyl rings were prepared. Reaction of the dilithio salts of the ligands with $(\eta^5\text{-C}_5\text{Me}_5)\text{Fe}(\text{acac})$ provides cleanly ferrocenes bridged by p-phenylene and p-biphenylene groups. The electrochemistry of these compounds shows that a mixed-valence state is stabilized only in the p-C₆H₄-bridged species; if the bridge is extended to two aromatic rings, the individual ferrocenes do not interact. Methyl substitution on the ring increases the interaction between the metals centers as shown for

$(\eta^5\text{-C}_5\text{H}_5)\text{Fe}[(\eta^5\text{-C}_5\text{Me}_4)\text{C}_6\text{H}_4(\eta^5\text{-C}_5\text{Me}_4)]\text{Fe}(\eta^5\text{-C}_5\text{H}_5)$, in which the mixed-valence state is less stable as compared with the analogous, fully methylated compound. © 1988, American Chemical Society. All rights reserved.