

Di-tungsten Bis-carbene Complexes Linked by Condensed Heteroaromatic Spacers

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Dedicated to Prof. Helgard G. Raubenheimer on the occasion of his 65th birthday

The 2,7-dilithiated substrates of 3,6-dimethylthieno[3,2-*b*]thiophene, *N,N'*-dimethylpyrrolo[3,2-*b*]pyrrole and *N*-methylthieno[3,2-*b*]pyrrole were reacted with W(CO)₆ to give, after subsequent alkylation with Et₃OBF₄, the ditungsten *biscarbene* complexes [(CO)₅W{C(OEt)XXC(OEt)}W(CO)₅] (XX = condensed heteroaromatic spacers). Sites of attack during the dilithiation of the condensed rings were studied and compared, and the yields of the desired ditungsten *biscarbene* complexes optimized by changing the reaction conditions according to the role of the heteroatoms in the rings. The crystallographic data of the three ditungsten *biscarbene* complexes are reported and their structural features compared. The methyl substituents on the condensed heteroaromatic rings play an important role in determining the molecular configurations.

Key words: Dinuclear Carbene Complexes, Condensed Heterocycles, Thiophene, Pyrrole, Tungsten