Dinuclear Gold Complexes of Two Simple but Underutilized Dicarbanionic Ligand Types

Karolien Coetzee, Christoph E. Strasser, Stephanie Cronje, and Helgard G. Raubenheimer

Department of Chemistry and Polymer Science, University of Stellenbosch, Private Bag X1, Matieland, 7602, Stellenbosch, South Africa

Reprint requests to Prof. Helgard G. Raubenheimer. Fax: +27 21 8083849. E-mail: hgr@sun.ac.za

Z. Naturforsch. 2009, 64b, 1449–1457; received October 6, 2009

Dedicated to Professor Hubert Schmidbaur on the occasion of his 75th birthday in recognition of his numerous contributions to inorganic and organometallic chemistry

Both mono- and bisylide zwitterionic complexes of gold(I), [(C₆F₅){PhCH(PPh₃)}Au] (4), [(C₆F₅)₂(C₆H₄-p){CH(PPh₃)}₂Au₂] (5) and [(C₆F₅)₂(C₆H₄-m){CH(PPh₃)}₂Au₂] (6) were prepared by THT substitution in [C₆F₅(THT)Au] (THT = tetrahydrothiophene) using deprotonated mono- and bis-phosphonium salts. Lithiation of 4,4′-dibromo-2,3,5,6,2′,3′,5′,6′-octafluoro-1,1′-biphenyl and transmetallation with [Cl(Ph₃P)Au] produced a dinuclear gold complex of octafluorobiphenyl [(PPh₃)₂(C₆F₄-C₆F₄)₂Au₂] (8).

Key words: Gold(I), Bisylide Complexes, Octafluorobiphenyl, Ylide Structures, Dinuclear Gold(I) Complexes