

Tetrathiafulvalene-based group XV ligands: Synthesis, coordination chemistry and radical cation salts

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R�sum� en anglais	<p>This review deals with the synthesis, properties and applications of metal complexes of tetrathiafulvalene-based group XV (N, P, As, Sb) ligands. The different synthetic methods for the preparations of tetrathiafulvalenes (TTFs) incorporating coordination functions such as N atoms (essentially sp² N atoms in pyridines, pyrazines, bipyridines, imines, etc.) and P atoms (essentially in tertiary phosphines) are reviewed, together with the redox properties of these free ligands, showing in most cases that the electron donating ability of the TTF core is only scarcely affected upon association with the coordinating group. Metal complexes of such ligands have been reported with a large variety of metal centers, from group 6 (Cr, Mo, W) to group 12 (Zn, Cd, Hg). Their structural and electronic and magnetic properties are described, with an emphasis on the evolution of the properties of the ligand (redox potentials, ³¹P NMR chemical shifts) upon coordination. Two applications of these complexes are further discussed, elaboration of multi-functional conducting materials upon TTF oxidation, redox modulation of the reactivity of the metal complex used as catalyst.</p>
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