

Triazine based tridentate and terpyridine based pentadentate ligands: Synthesis, Transition Metal Chemistry and Photophysical study

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Triazine based triphos ligand 2,4,6-tris(4-(diphenylphosphino)phenyl)-1,3,5-triazine (**1**) was synthesized by treating 2,4,6-tris(4-bromophenyl)-1,3,5-triazine with $KPPh_2$ in moderate yield. The compound **1** with C_{3v} symmetry is an attractive ligand for producing transition-metal complexes with intriguing geometries.¹ Hence to study its coordinative behavior; it was treated with various transition metal precursors to obtain simple trimetallic complexes to one dimensional polymers or cyclophane type complexes. Terpyridine based ligand systems have also been studied extensively in recent years due to their interesting photophysical aspects.² So in order to study the change in the coordination behaviour and its consequences on the photophysical properties, a hybrid diphos/terpyridine ligand 2,4,6-tris(4-(diphenylphosphino)phenyl)-1,3,5-triazine (**2**) was prepared in moderate yield by treating 4'-(*p*-aminophenyl)-2, 2':6', 2''-terpyridine with PPh_2Cl in 1:2 molar ratios. Since the ligand contains both the hard and soft coordination centers, the complexation behaviour is governed by the choice of the metal precursor which leads to the formation of varieties of hetero bimetallic complexes. The presence of two different metals affects the photophysical properties of the resulting complexes to a greater extent.

References

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