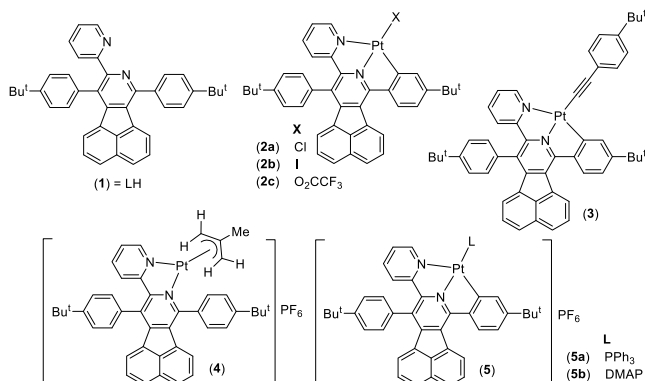


Synthesis of Pt(II) complexes of an pyridyl azafluoranthene ligand

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Fluoranthenes incorporate a five-membered ring as part of their fused skeleton and have been used to prepare curved aromatic ring systems. They have been used in light emitting devices and detection of explosives. Cyclometallated (NNC)Pt fragments are capable of harvesting light. Thus, it is of interest to explore the chemistry of the pyridyl azafluoranthene ligand (**1**) with Pt. Here we report the synthetic routes to complexes of the type [(NNC)PtX] and [(NNC)Pt(L')]PF₆; X = halide, acetylide; L' = PPh₃ or pyridine.



Treatment of (LH) (**1**) with [PtCl₂(dmsO)₂] gave the cyclometallated Pt(II) complex [PtCl(L)] (**2a**) containing an anionic terdentate (NNC) ligand. Substitution of Cl⁻ of (**2a**) with anionic ligands I⁻ and CF₃CO₂⁻ yielded (**2b**) and (**2c**), respectively. Reaction of (**2a**) with HC≡CC₆H₄Bu^t-4 afforded the red Pt(II) acetylide (**3**). Treatment of (**2a**) with 0.5 equivalent of [(η³-methallyl)Pd(μ-Cl)]₂ and NH₄PF₆ resulted in forming the salt (**4**). Substitution of Cl⁻ of (**2a**) with neutral ligands such as PPh₃ and 4-dimethylaminopyridine (DMAP) gave rise to salts (**5a**) and (**5b**), respectively.

Keywords: Pt(II) complexes, pyridyl ligand, fluoranthene, cyclometallation and substitution

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