



Coordination Chemistry of Pyrimidyl Ligands



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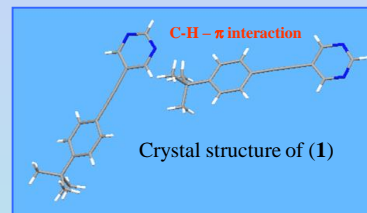
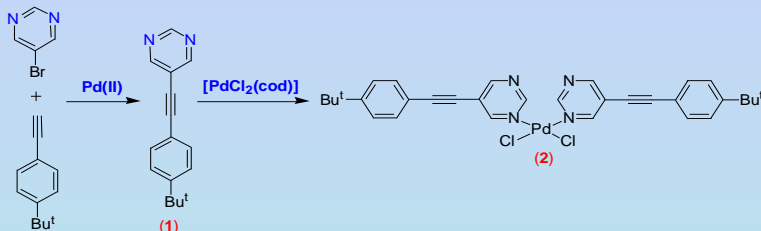


Introduction and Aim

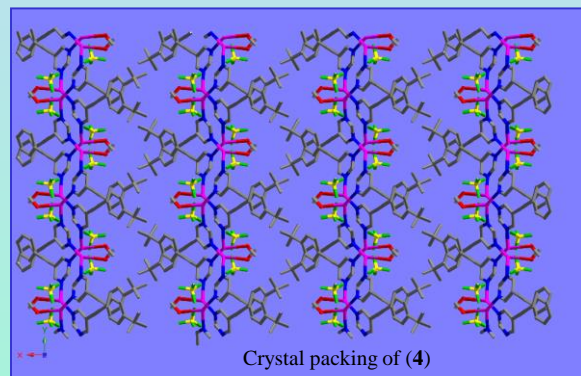
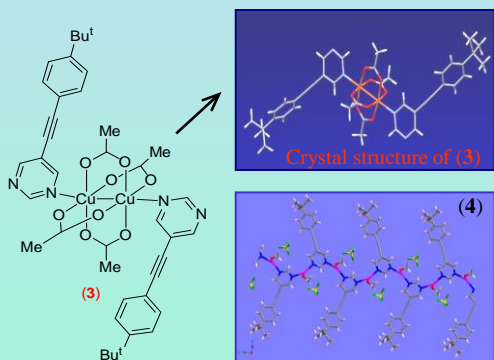
Coordination complexes of bidentate ligands such as 2,2'-bipyridine and 1,10-phenanthroline are well studied [1]. Very little is known about complexes of **pyrimidine** or its derivatives [2]. These bidentate ligands cannot form chelates but can act as (i) **monodentate ligands** through one of the nitrogens or (ii) **bridging ligands** which may lead to the formation of **cyclamers** or **coordination polymers** [2]. Here we report the synthesis of **4-tert-butylphenyl-5-pyrimidyl acetylene (1)** and **metal complexes and coordination polymers of (1) and 5-bromo pyrimidine**.

Results and Discussion

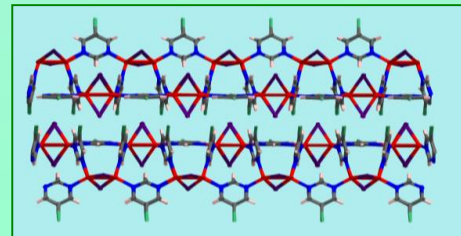
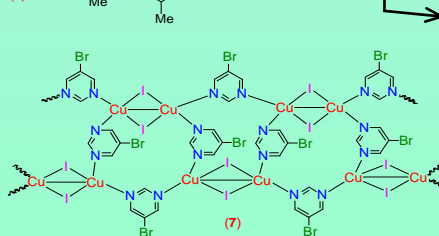
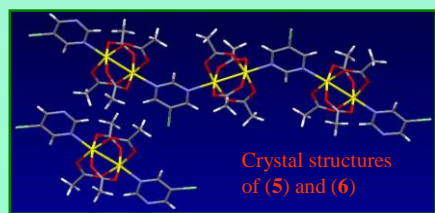
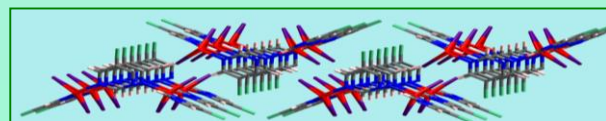
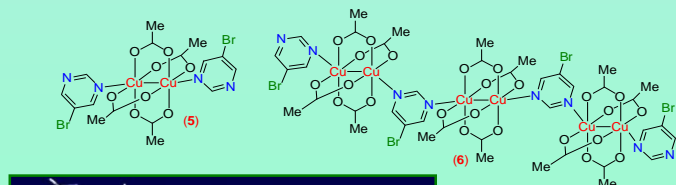
4-tert-Butylphenyl-5-pyrimidyl acetylene (1) was prepared by coupling 4-tert-butylphenyl acetylene and 5-bromo pyrimidine. Treatment of **(1)** with $[PdCl_2(\text{cycloocta-1,5-diene})]$ gave the square-planar complex **(2)** in which the ligand is monodentate.



Reaction of **(1)** with $[Cu(OAc)_2]$ gave the **paddle wheel (3)**. Treatment of **(1)** with $AgBF_4$ in methanol afforded a **one dimensional polymer (4)** in which Ag(I) is three coordinate.



5-Bromo pyrimidine reacts with $[Cu(OAc)_2]$ to give **(5)** and **(6)**, and with CuI it gives the **two dimensional polymer (7)**.



References

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