Poster Presentation

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Modified Phenyl Groups on Pyrazin Groups to Synthesized Cobalt String Complexes

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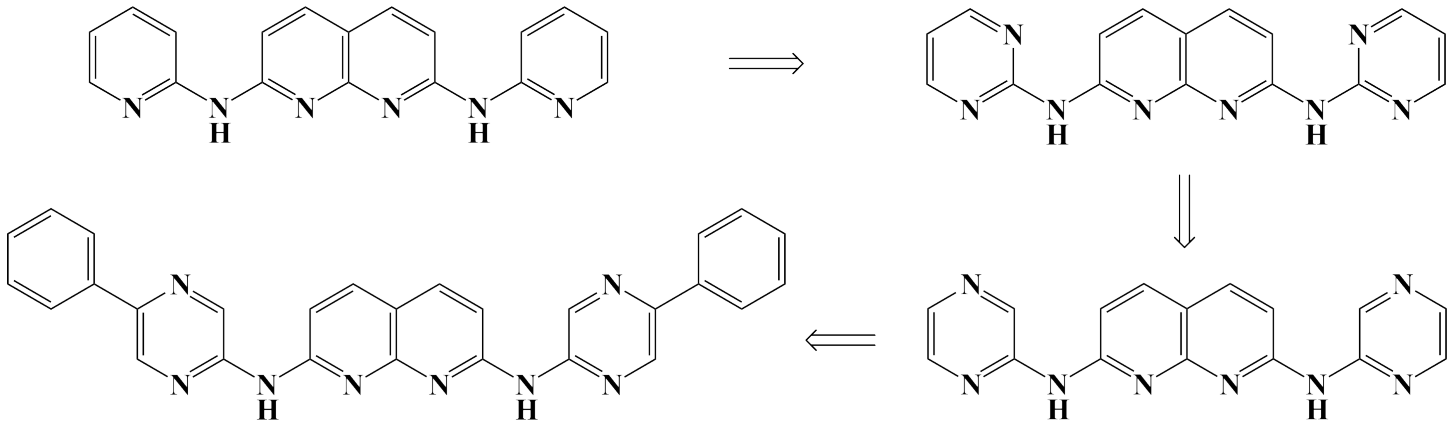
In the literature, ligand such as oligo-a-pyridylamines and oligo-naphthyridylamine are usually used in the linear metal string complex. In addition to all of the above, another series of ligand is synthesized by mixing two types of ligands. In other words, the type of ligand contains pyridyl and naphthyridyl groups. Permuting the possible permutation, we can find that symmetrical and the shortest ligand is 2,7-bis(a-pyridylamino)-1,8-naphthyridine (H2bpyany). Complexes contain bpyany2-, hexa-nickel or hexa-cobalt, axial ligands such as chloride and thiocyanate, and anions such as hexafluorophosphate and tetrafluoroborate were published1, 2. Another similar ligand that H2bpyany replaces pyridyl groups by pyrimidyl group is 2,7-bis(a-pyrimidylamino)-1,8-naphthyridine (H2bpmany). Hexanickel complexes with bpmany2- were also published3. According to the above, if we replace pyridyl group by pyrazin group, properties of complexes such as magnetic property, CV and resistance make a change. 2,7-bis(a-pyrazinamino)-1,8-naphthyridine (H2bpzany) and nickel or cobalt ions were reacted. We can get the signal in MALDI, but we cannot isolate the target. Because of this, we modified phenyl groups on pyrazin groups. By 2,7-bis(5-phenyl)-a-pyrazinamino-1,8-naphthyridine (H2bphpzany), [Co5(bphpzany)4(NCS)2] (1), [Co6(bphpzany)4(NCS)2](PF6)n (n=1 (2), n=2 (3)) have been synthesized and the crystal structures for complex 1-3 have been determined by X-ray crystallography. Three complexes are the similar component of four ligands, five or six cobalt ions, two thiocyanates as axial ligands, and hexafluorophosphate as counterions. The structural characterization is that the cobalt chain is helically wrapped by four bphpzany2-. Complex 1-3 have Co510+, Co612+ configurations, and all are air-stable.

[1] *C.-H. Chien, J.-C. Chang, C.-Y. Yeh, et al., Dalton Trans., 2006, 3249–3256,* ***[2]*** *C.-H. Chien, J.-C. Chang, C.-Y. Yeh, et al., Dalton Trans., 2006, 2106–2113,* ***[3]*** *T.-B. Tsao, S.-S. Lo, C.-Y. Yeh, et al., Polyhedron, 2007, 26, 3833–3841*



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