

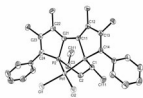
## Chirality Control in 2,2'-biphosphole Ligands leading to Enantio-pure Complexes

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The use of stereochemically dynamic 2,2'-biphosphole (BIPHOS), after spontaneous resolution by crystallization and complexation on Pd center, proved to be as effective as well known chirally rigid diphosphines in asymmetric allylic substitution<sup>1</sup>. In order to generalize the use of 2,2'-biphosphole type ligands in asymmetric catalysis, the control of chirality could be achieved in two steps : selective formation of diastereoisomers by using a chiral controller and enantiomer-selective coordination on a metal center. The partial chirality control of the 2,2'-biphosphole framework as only 3 diastereoisomers are obtained among the six expected. The relative configurations of these diastereoisomers as stereorigid disulfides derivatives have been confirmed by X-ray diffraction analysis.



By complexation on Pd<sup>2</sup> or Pt, a metal dynamic resolution occurs leading to enantio and diastereomerically pure 2,2'-biphosphole complexes as confirmed by X-ray diffractions studies. Applications of these complexes in asymmetric catalysis are currently underway.



[1] Tissot O., Gouygou M., Dallemer F., Daran J.-C., Balavoine G.G.A., *Angew. Chem. Int. Ed.*, 2001, **40**, 1076-1078. [2] Ortega C., Gouygou M., Daran J.-C., *Chem Comm.*, 2003, 1154-1155.

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