Selected Publications


Patents


The research projects pursued by my research team involve catalytic asymmetric hydroamination and hydrophosphination reactions, insertion and coupling reactions, asymmetric synthesis of phosphines and heterocycles and development of chiral metal complexes for asymmetric catalysis. We are particularly interested in the synthesis of enantiomerically pure tertiary phosphines and diphosphines containing both the stereogenic phosphorus centres and some selected functionalities. Most of the products of these catalytic processes can then be converted as catalysts for other reactions.

Furthermore, the new functionalized phosphines are applied to the synthesis of new anti-cancer gold drugs. Thus far, preliminary biological tests indicate that when ester and other functional groups are incorporated into these new drugs exhibit high activity towards various human cancerous diseases with minimal side effects. The catalytic properties of these newly generated chiral phosphines are also being investigated.