

Developing new catalysts for palladium chemistry

Heck reaction has become a very useful tool in organic synthesis. We have improved this reaction in the several aspects recently. They include a) regioselective reactions of terminal olefins with high terminal selectivity; b) selective formation of conjugated products from cyclic olefins; c) asymmetric reaction of cyclic olefins and related cascade reactions; d) asymmetric Heck reaction using benzylic electrophiles. We have also developed asymmetric arylation reactions of enolates to produce tertiary stereocenters, which were considered to be a challenge in palladium catalysis previously. The enolates can be derived from esters and ketones.

Z. Huang, Z. Liu and J. R. Zhou, *J. Am. Chem. Soc.* **2011**, 133, 15882.

