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(54) Title: NOVEL FERROCENE-BASED UNSYMMETRICAL LIGANDS BEARING BULKY DI(ADAMANTYL)PHOSPHINO MOTIF AND THEIR METAL CATALYSTS

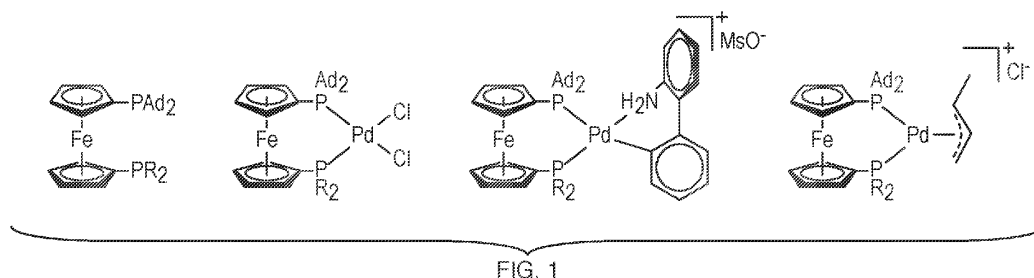


FIG. 1

(57) Abstract: Ferrocenyl-based unsymmetrical ligands containing di(1-adamantyl)phosphino groups with general formula, Fc(Ad₂P)(R₂P) and corresponding metal complexes, include metal halide complexes, N-biphenyl metal cationic complexes and R-allyl metal cationic complexes, useful in catalysis. The ligands and complexes overcome problems with conventional catalysts, providing new routes to previously challenging cross-coupling reactions, including C-P coupling, C_{sp2}-C_{sp3} coupling and other conventional cross-coupling applications, while being scalable so that they can be provided in sufficient quantity and purity for industrial applications.

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