

A novel Palladium(II) complex of α -keto arsonium ylide: Synthesis, characterization, and application in the Suzuki–Miyaura cross-coupling reaction

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A new Palladium(II) complex having α -keto stabilized arsonium ylide ligand with the general formula $[\text{Pd}(\mu\text{-Cl})(\text{Ph}_3\text{AsCHC}(\text{O})\text{C}_{10}\text{H}_7)]_2$ was synthesized and applied as a performance catalyst to achieve palladium (II)-catalyzed Suzuki-Miyaura reaction of arylboronic acid with aryl bromides. This complex was characterized by CHN analysis, FT-IR and multinuclear (^1H and ^{13}C) NMR spectroscopic techniques. For more than 30 years, Pd-catalyzed homogeneous bonding reactions have been used in C-C coupling reactions such as Heck, Sonogashira, Suzuki, Kumada, Negishi, Hiyama, etc. [1–3]. Suzuki-Miyaura reactions are environmentally benign, have a high tolerance to different functional groups, are easily available, have high stability of used substrates, and are widely used to form natural products, biologically active pharmaceuticals, and agrochemicals [4]. Based on this, we decided to evaluate and compare the catalytic activity of catalyst synthesized by Suzuki-Miyaura cross-coupling reactions. This catalyst showed high catalytic activity in the C-C cross-coupling reaction.

Keywords: Arsonium ylide, Homogenization, Pd(II) complex, Suzuki-Miyaura reactions

References

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