The role of palladium nanoparticles in catalytic C–C cross-coupling reactions.

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This review describes the recent advances in understanding of the mechanism of palladium catalyzed C–C cross-coupling reactions. The discussion is focused on the role of palladium nanoparticles (Pd NPs) inthe catalytic process. In most cases, Pd NPs are not the only form of palladium present in the system, butthey contribute in product formation together with other species forming ‘‘cocktail of catalysts”. The mix-ture of catalytically active species can be formed from two types of precursors, namely Pd NPs or Pd(II)complexes. To characterize catalytic systems based on pre-made Pd NPs we selected catalysts immobi-lized of MOF materials. The other part of review is devoted to the catalytic systems in which Pd NPsare formedin situfrom molecular complexes. The role of non-phosphorus ligands in stabilization of PdNPs was presented and discussed.

Słowa kluczowe

palladium, nanoparticles, catalysis, C-C cross-coupling, Ligand-free, MOF

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