Selective hydroformylation - acetalization of aryl alkenes in methanol catalyzed by RhCl₃-3H₂O - P(OPh)₃ system.
El Ali, Bassam; Tijani, Jimoh; Fettouhi, Mohammed. Chemistry Department, KFUPM, Dhahran, Saudi Arabia.

Abstract

Branched acetals R₁CHMeCH(OR₂)₂ (R₁ = Ph, 2-ClC₆H₄, 4-MeOC₆H₄, 2-naphthyl, etc.; R₂ = Me, Et, n-Pr, Me₂CH, n-Bu) were regioselectively formed under hydroformylation conditions of aryl alkenes R₁CH:CH₂ in alcs. R₂OH as solvents. The hydroformylation process is combined with acetalization in a one-pot reaction leading to acetals as final products. These reactions sequences were catalyzed by the simple rhodium catalyst RhCl₃-3H₂O. The effects of the addn. of different types and amts. of phosphine and phosphite ligands were carefully studied in order to improve the regioselectivity of the reaction.