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Acid–promoted transformations of aryl substituted diphenylphosphoryl allenes

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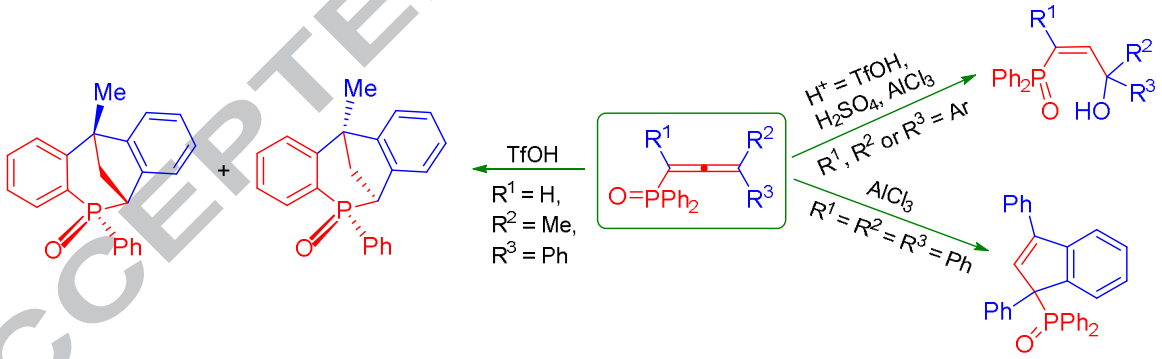
Graphical Abstract



Abstract

1–(Diphenylphosphoryl)alka–1,2–dienes, bearing aryl substituents at the allene system, under the action of Brønsted (TfOH, H_2SO_4) or Lewis ($AlCl_3$) acids gave rise to 3–hydroxyalk–2–en–1–yl–diphenylphosphine oxides (diphenylphosphoryl allyl alcohols) in yields of 57–98%. In some cases, the formation of (diphenylphosphoryl)indenes and phosphaheterobicyclic structures was observed.

Allenes are widely used in organic synthesis[1] and the electrophilic reactions of allenes have been explored for the synthesis of various carbo– and heterocycles.[2] Recently[3] we showed that 1–