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## Studies on Ptc-Wittig Reaction of Diphenyl Ylids

Wenfang Huang<sup>a</sup>; Xiaoru Chen<sup>a</sup>; Min Fan<sup>a</sup>

<sup>a</sup> Institute of Organic Synthesis, Central China Normal University, Wuchang Hubei, P.R.C.

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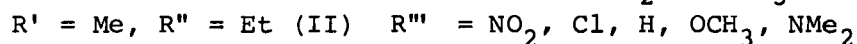
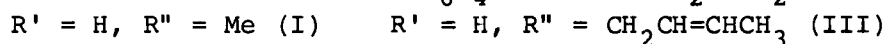
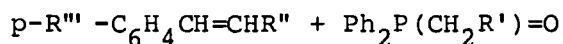
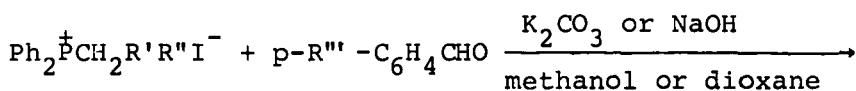
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## STUDIES ON PTC-WITTIG REACTION OF DIPHENYL YLIDS

WENFANG HUANG, XIAORU CHEN, and MIN FAN  
 Institute of Organic Synthesis, Central China Normal  
 University, Wuchang Hubei, P.R.C.

The phase transfer catalyzed (PTC) Wittig reaction has the advantage of not requiring additional catalyst due to the catalytic property of phosphonium salt itself. This report presents the studies on such a reaction of diphenyl-, dialkyl- and methyl-2-butenyl phosphonium ylids which are produced in situ from the corresponding phosphonium salts.



We found that the solvent effect on the reaction rate of dialkyl diphenyl ylids is quite different from that of methyl 2-butenyl ylid. In the protic solvent methanol the rates are higher than in the aprotic solvent dioxane, when  $\text{R}'' = \text{CH}_2\text{CH=CHCH}_3$ . But when  $\text{R} = \text{Me}$  or  $\text{Et}$ , the PTC-Wittig reaction can take place only in aprotic solvent, such as dioxane. Besides, both reactions of (II) and (III) are E-stereoselective. For (III) E-selectivity is higher in methanol than in dioxane with the exceptions of p-nitro-benzaldehyde and p-N,N dimethyl amino benzaldehyde. As for (II), the same tendency was observed. The solvent effect also plays a role on E-selectivity. The increasing order is benzene, dioxane, tetrahydrofuran, dichloromethane. All the above described results are related to the mechanism of the Wittig reaction, which for a long time has been research object in our laboratory.