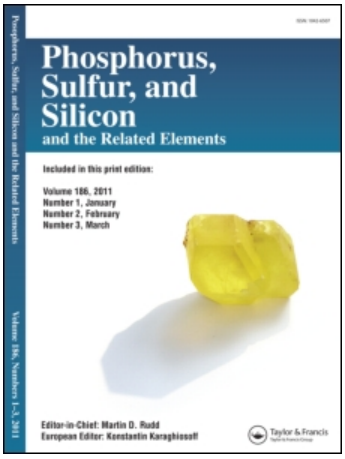

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A Conveniant Preparation of γ-Formylalkanephosphonates

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A Conveniant Preparation of γ-Formylalkanephosphonates

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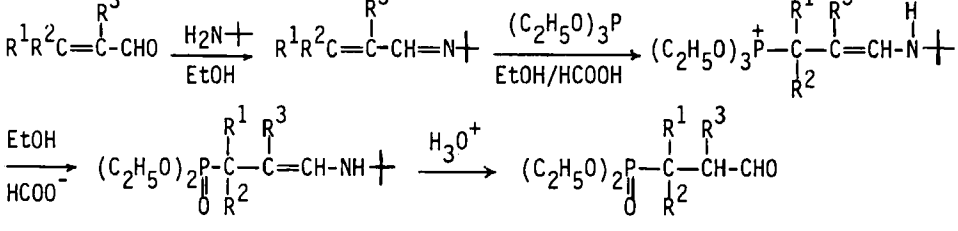
Despite their obvious potential as synthetic intermediate, relatively little attention has been directed to the preparation of γ-formylalkane phosphonates. Because of our interest in the possible utilisation of these compounds as starting materials for the preparation of aminophosphonic acids a new approach has been devised.

The most attractive and potentially most general route for the synthesis of such phosphonic aldehydes appeared to be the direct phosphonylation of protected α,β-unsaturated aldehydes. The synthesis can be achieved readily by treatment of imines with $(C_2H_5O)_3P$ in the presence of formic acid.



Most of the γ-formylalkanephosphonates are formed in acceptable yields (40-65%). The purification step is critical, its repetition demonstrates that there is a tendency for such compounds to undergo polycondensation type reactions.