



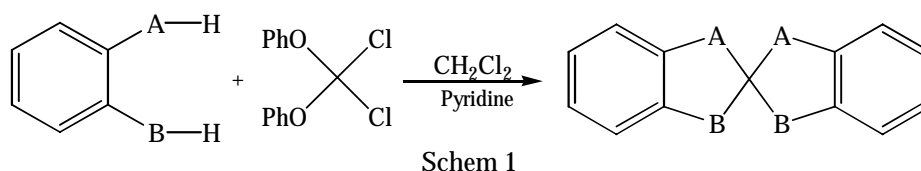
**Title :** Synthesis of new derivatives with oxa and azaspiro systems

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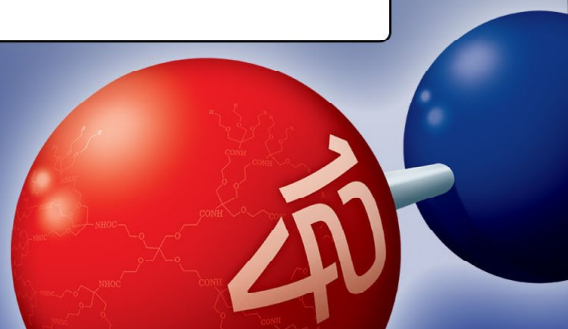
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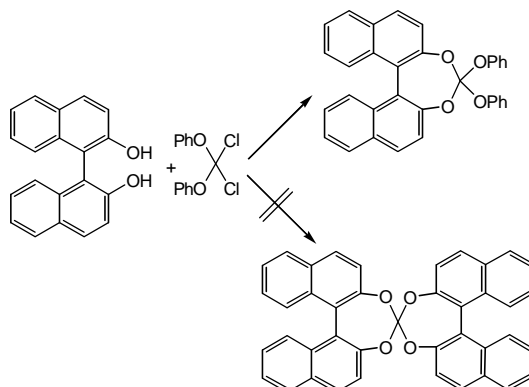
Spiroorthocarbonates are useful monomers that show no shrinkage in volume on polymerization. They are important in the field of materials such as precision materials, adhesives, dental composites and so on [1]. Although there are some methods for the synthesis of spiroorthocarbonates but most of them have some disadvantages.[2-4] So the search for the efficient methods are still in demand. However, one of the best method reported so far, is the one pot synthesis using dichlorodiphenoxymethane(1) and dinucleophils [5].We have chosen this method for the synthesis of new derivatives of oxa and aza systems.

Dichlorodiphenoxymethane(1) was prepared from the reaction of diphenylcarbonate and phosphorus pentachlorid[5]. Various dinucleophiles like salicylic acid (2), phthalic acid(3), anthranilic acid(4) and 1,8-diaminonaphthalene(5) were used to synthesize 2,2'-spirobi[benzo[1,3]dioxin-4-one](7), 3,3'-spirobi [benzodioxepine-1,5-dione](8), 2,2'-spirobi[1,2-dihydro-4H-3,1-benzoxazin-4-one](9) and Spirobi[2,3-dihydro-1H-perimidine](10),respectively.(Scheme1)



However, for the reaction of 1,1'-binaphthyl-2,2'-diol(6) with (1) a tetraoxaspiro compound did not formed and the reaction stopped at the first step and gave 2,2'-diphenoxydinaphtho[2,1-d.1,2-f][1,3]dioxepine(11).(Scheme2)





Scheme2

References:

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- 3-Sakai S., Kobayashi Y., Itoh K., Ishii Y.; J. Org. Chem.; 1971, 36, 1176.
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