

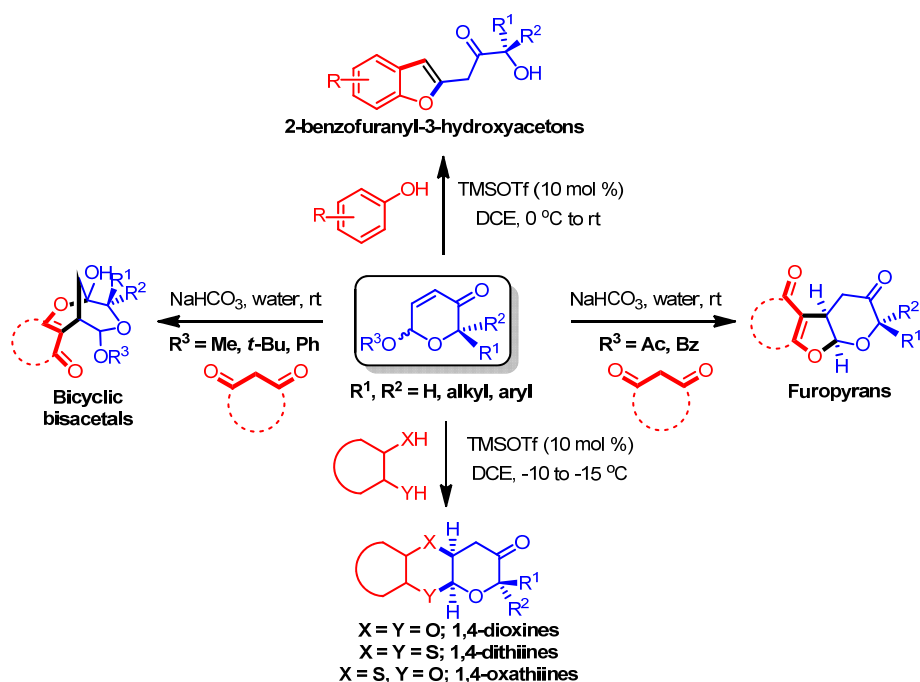
Novel Transformations Leading to the Synthesis of O,S-Containing Heterocycles

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Abstract:

Heteroannular acetals are important structural motifs present in several biologically active compounds. Benzofurans are another class of privileged scaffolds in drug discovery. Considering their imperative properties, we have developed potentially green and diversity-oriented approaches towards the synthesis of unprecedented heteroannular acetals and O,S-containing polycycles starting from pyranone acetals. Pyranone acetals and 1,3-dicarbonyl compounds under mild aqueous basic conditions undergo Michael addition followed by cycloacetalization to provide access to furopyranones and bicyclic ethers.¹ On the other hand, pyranone acetals with 1,2-dinucleophilic systems via cascade Michael addition-cycloacetalisation (CMAC) generated advanced molecular architecture such as 1,4-dioxines, dithiines and oxathiines.² The scope of pyranone acetals was further elaborated for the synthesis of benzofurans via an acid catalysed Transacetalisation/Fries-type O→C rearrangement/Michael addition/ring opening aromatisation cascade.³



References:

1. S. Kasare, S. K. Bankar, S. S. V. Ramasastry, *Org. Lett.* **2014**, *16*, 4284.
2. S. K. Bankar, R. Shirke, S. S. V. Ramasastry, *Adv. Synth. Catal.* **2015**, *357*, 3284.
3. S. K. Bankar, J. Mathew, S. S. V. Ramasastry, *Chem. Comm.* **2016**, *52*, 5569.