

Abstract

A general method for the synthesis of azo derivatives of active methylene compounds through the in situ generation of arenediazonium salts followed by reacting them with a compound containing active methylene group has been developed. The advantages of these reactions are milder condition, cheaper starting material and simpler execution with high yields apart from many functionalization possibilities. Azo coupling of arenediazonium ion with aliphatic compounds are sensitive reaction so reaction conditions have been optimised by trying different conditions. Azo compound are robust photoswitchable molecules, which can be switched between trans and cis isomers. Due to this photoisomerization, azo molecules will get a significant geometrical change in their molecular structure. Due to the presence of two electron withdrawing groups, few different tautomeric structures are also possible for these systems. Through this work, synthesis, tautomerism and switching behavior have been studied in detail.