Preface

During past several decades, organosulfur compounds have attracted the attention of synthetic organic chemists as potential intermediates for construction of molecules with diverse structural features. Their ease of preparation and synthetic versatility makes them ideal precursors for the preparation of natural products as well as compounds of immense pharmaceutical and industrial applications. This thesis presents the results of our studies on the synthetic manipulations employing organosulfur intermediates like α-oxoketene dithioacetals, β-oxodithioesters and β-oxothioamides. Our studies on the structure-reactivity relationship of bis(cinnamoyl) ketene dithioacetals has led to a facile intramolecular [2+2] photochemical reaction, induced by the push-pull nature of the 1,3-dithiolan moiety, the results of which are presented in Chapter Two of the thesis. In continuation of an ongoing project on the base-induced fragmentation reactions of functionalized ketene dithioacetals, we have developed a one-pot strategy towards synthesis of functionalized thiopyran-4-ones. The results of these studies are presented in Chapter Three of the thesis. Chapter Four describes the results of our synthetic investigations on β-oxothioamides derived from β-oxodithioesters, which on alkylation with 1,2-bielectrophiles like phenacyl bromide and ethyl bromoacetate afforded 5-aminothiophene derivatives. Functionalized ketene dithioacetals are excellent precursors for 1,3-carbonyl transposition methodologies. While exploring the synthetic utility of α-oxoketene dithioacetals as precursors for carbonyl group transposition strategies, we have observed an intramolecular 1,5-shift of one of the methylthio groups thereby leading to substituted 2,4-pentadienethioates. The results of these studies are presented in Chapter Five of the thesis.