Title:	Synthesis of Substituted Fluorene Derivatives and Related Natural Products from para-Quinone Methides
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Abstract:	Abstract: Fluorene-based small molecules have often been employed in organic electronics over the past few decades due to their excellent optoelectronic properties. Moreover, substituted fluorene and benzofluorenes are often found as an integral part of natural and unnatural significant molecules and possess various therapeutic properties such as anti-inflammatory, anti-cancer, anti-estrogen, etc. Many research groups have been inspired to develop multiple synthetic approaches to access substituted fluorene because of the broad spectrum of biological activity and structural complexity. However, alternative strategies are indeed required for the synthesis of these molecules. The main focus of this thesis work is on the inter- and intramolecular nucleophilic 1,6-conjugate addition reactions of suitably modified p-quinone methides (p-QMs) to access substituted- fluorenes and fluorene-based biologically significant natural products. The thesis is divided into three Chapters. Chapter 1 briefly introduces the reactivity of various p-QMs toward different nucleophiles and the annulation reactions of p-QMs leading to various carbocycles. Chapter 2 is divided into two sections: Part A and Part B. Part A describes the synthesis of 9-arylfluorenes by TfOH-catalyzed intramolecular 1,6 annulation of 2-aryl phenyl p-QMs in a continuous flow microreactor. Part B deals with the synthesis of 9,9-disubstituted fluorene & substituted dihydrobenzo[a]fluorene derivatives through a silver catalyzed intermolecular 1,6-addition followed by electrophilic cascade cyclization. Chapter 3 deals with the total synthesis of recently isolated fluorene-based natural products.
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