Title:	Transition-metal Free Approaches Toward Synthesis of Diaryl-and Triarylmethanes from para-Quinone Methides
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Abstract:	Abstract In recent years, para-quinone methides (p-QMs) chemistry is very well explored for the synthesis of various heterocycles, carbocycles, diaryl- and triarylmethane derivatives which exhibit great importance in medicinal chemistry and material science. The objective of this work is to develop the transition-metal-free approaches for various synthetic transformations using p-QMs as synthetic precursors to access diaryl- and triarylmethane derivatives. A part of this thesis work deals with a Lewis/Brønsted acid mediated/catalyzed 1,6- conjugate addition reactions of N-containing nucleophiles (such as carbamate, carbazole etc.) to para-quinone methides; which demonstrates the tropylium salt-mediated 1,6-vinylogous aza- Michael addition of unactivated amines to para-quinone methides which provides an access to diastereoselectively pure α,α'-diarylmethyl carbamates, and HBF 4 -catalyzed 3,6-bis- diarylmethylation of carbazole derivatives. Another part of this work describes the visible light- mediated photocatalytic transformations of para-quinone methides which involves transition- metal-free photoredox approach towards 1,6-conjugate addition of indoles to para-quinone methides and organo-photocatalytic reductive dimerization of para-quinone methides.
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