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**Title:** Exploring the Vinylogous Conjugate Addition Reactions of para-Quinone Methides to Access Fused N-Heterocycles, Diarylmethanes and Related Natural Products

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**Abstract:** The research work carried out in this thesis is mainly focused on the 1,6-conjugate addition of carbon, nitrogen and sulphur nucleophiles to the p-quinone methides (p-QMs) under conventional batch processes and also under continuous-flow conditions. Under conventional conditions, p-quinone methides have been utilized as synthons to access structurally complex and therapeutically active 1,2,3-triazole-fused isoindolines, cyclohepta[b]indoles and highly substituted indene derivatives. In fact, one of the protocols has been elaborated to the total synthesis of a resveratrol based natural product called ( $\pm$ )-isopaucifloral F. In addition, the 1,6-conjugate addition reactions of p-QMs with zinc alkyls and thiols have been explored under continuous-flow conditions using microreaction technology to access unsymmetrical diaryl methane derivatives. The results will be discussed in the talk.


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