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## Green chemistry approach towards diversified polyheterocycles via [4+2] cyclo addition reaction

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An effective utilization of green chemistry aspects in particular with the avoidance of solvent and catalyst towards complex heterocyclic frameworks represents an important endeavor in modern synthetic chemistry. Multicomponent reactions (MCRs) constitute an appealing convergent strategy in which three or more substrates are put together towards the formation of complex target molecules with the inclusion of significant portions of all substrate components. MCRs facilitate the assembly of three or more starting materials together in a single operational step with high bond-forming efficiency and atom economy, thereby enhancing the structural diversity in a rapid manner. Heterocyclic frameworks, especially nitrogen and oxygen containing five or six membered heterocycles are most prevalent class of compounds in which quinolines, chromenes and benzofuran tethered architectures are well known for their interesting biological properties. Therefore, the establishment of new synthetic protocols towards the construction of nitrogen and oxygen based polyheterocycles through a novel multicomponent reactions represents one of the fastest growing areas of organic synthesis. In fact the polyheterocyclic compounds are integral part of many natural products and biologically active compounds. Our research group is focussed on the synthesis of polyheterocyclic frameworks via [4+2] cycloaddition through a domino reaction concept in an environmentally benign manner. In this regard, the author would like to present our recent works emphasizing more on the application of domino Knoevenagelintramolecular hetero-Diels-Alder reaction (IMHDA) for the construction of diversified nitrogen, oxygen tethered polyheterocyclic frameworks.

### Biography

Manickam Bakthadoss obtained his PhD degree in Synthetic Organic Chemistry from University of Hyderabad in the year 2000 and held Postdoctoral position at the University of Texas, USA during 2002-2005 after taking a Faculty position in the Department of Organic Chemistry, University of Madras in the year 2000. At present he is an Associate Professor in the Department of Chemistry, Pondicherry University. His research interests include the synthesis of heterocyclic frameworks via multicomponent reactions and domino reactions. His research group is also involved in C-H activation and asymmetric synthesis. He is a recipient of Welch Postdoctoral Award and a Life member of Chemical Research Society of India (CRSI).

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