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Titolo	Synthesis of Medium-Sized Cycloalkenes via Fused-Cyclobutenes [[electronic resource] /] / by Tomohiro Ito
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Nota di contenuto	Introduction -- Synthesis of Functionalized Medium-Sized trans-Cycloalkenes by 4 Electrocyclic Ring Opening Alkylation Cascade -- Synthesis of -Aryl Medium Sized Cyclic Enones by 4 Electrocyclic Ring Opening Heck Matsuda Arylation Sequence -- Asymmetric Organocatalytic [2+2] Cycloaddition Affording Bicyclo[n.2.0]alkenes -- Conclusion -- Experiments.
Sommario/riassunto	This book explains the existence of the intermediate using two approaches: computational chemistry and coordination chemistry. In this book, the author has developed new methods for synthesizing medium-sized cycloalkenes by utilizing the 4-electrocyclic reaction of fused-cyclobutenes. The fundamental and most important strategy and feature of the work are as follows: first, cyclobutene is used as a readily available raw material with high-strain energy to generate more strained medium-sized cis,trans-cycloalkadiene molecules. Second, by judiciously selecting the reaction conditions, the short-lived intermediate (medium-sized cis,trans-cycloalkadiene) can be converted

to medium-sized cis- or trans-cycloalkenes. For the former, the generation of the medium-sized cis,trans-cycloalkadiene intermediate is greatly affected by the substituent on the cyclobutene, and there are few examples of its generation confirmed at room temperature. Regarding the latter, the synthesis of trans-cycloalkenes is noteworthy in terms of establishing a new synthetic methodology and providing one of the few asymmetric synthesis methods, which has not been achieved before. Readers of this book can gain novel insights into strained molecules involved not only in small-sized cycloalkenes but also in medium-sized ones.
