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Category

Synthesis of Materials and Unnatural Products

Key words

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Ring Expansion Alkyne Metathesis Polymerization

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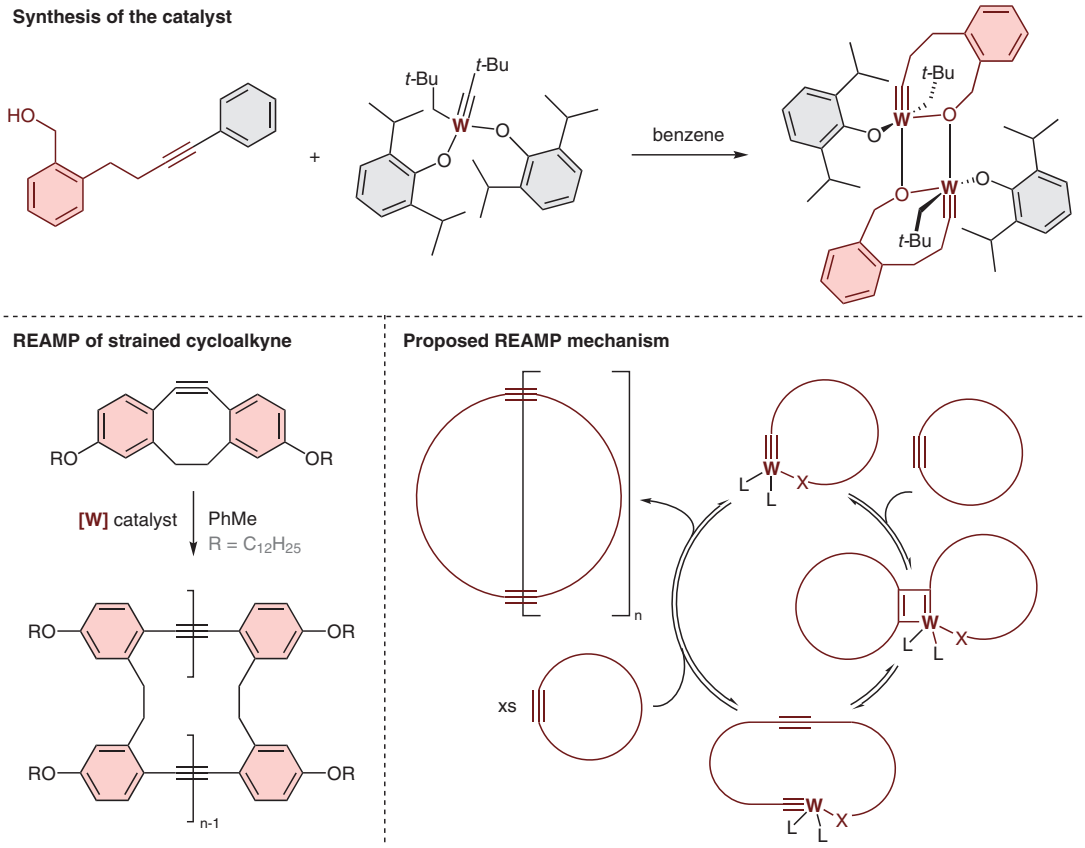
Ring Expansion Polymerization via Alkyne Metathesis



Significance: Many properties of cyclic polymers are distinct from their linear counterparts, making their challenging preparations worthy of exploration and study. Herein, an elegant design of alkylidyne dimer successfully achieves the transformation of strained cyclic alkynes to cyclic polymers through the mechanism of ring-expansion alkyne metathesis polymerization (REAMP).

Comment: The tethered alkylidyne dimer complex is obtained from a key yne-ol proligand and complex W(C*t*-Bu)(CH_2*t*-Bu)(*O*-2,6-*i*-$Pr_2C_6H_3$)$_2$.The ring strain of the specially designed alkylidyne is pivotal to its catalytic activity for REAMP. The high molecular weight and cyclic structure of the produced cyclic polymers are confirmed by the SEC and intrinsic viscosity measurements.

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