Complimentary and personal copy



www.thieme.com

SYNFACTS Highlights in Chemical Synthesis

This electronic reprint is provided for non-commercial and personal use only: this reprint may be forwarded to individual colleagues or may be used on the author's homepage. This reprint is not provided for distribution in repositories, including social and scientific networks and platforms.

Publishing House and Copyright: © 2024 by Georg Thieme Verlag KG Rüdigerstraße 14 70469 Stuttgart ISSN 1861-1958 Any further use only by permission

of the Publishing House



Category

Synthesis of Materials and Unnatural Products

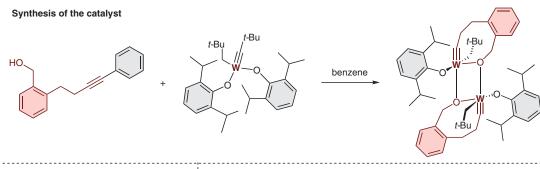
Key words

ring expansion polymerization alkyne metathesis tethered alkylidyne cyclic polymers A. M. BEAUCHAMP, J. CHAKRABORTY, I. GHIVIRIGA, K. A. ABBOUD, D. W. LESTER, A. S. VEIGE* (UNIVERSITY OF FLORIDA, GAINESVILLE, USA)

Ring Expansion Alkyne Metathesis Polymerization

J. Am. Chem. Soc. 2023, 145, 22796-22802, DOI: 10.1021/jacs.3c08717.

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(Ct-Bu)(CH₂t-Bu)(O-2,6-i-Pr₂C₆H₃)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.

SYNFACTS Contributors: Dahui Zhao, Yao Wei Synfacts 2024, 20(02), 0136 Published online: 16.01.2024 **DOI:** 10.1055/s-0043-1763875; **Reg-No.:** S02424SF