

Reactions Enabled by Alkyl Peroxides

by Professor Bao Hongli

Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences,
China

Host: Asst. Prof. Ge Shaozhong

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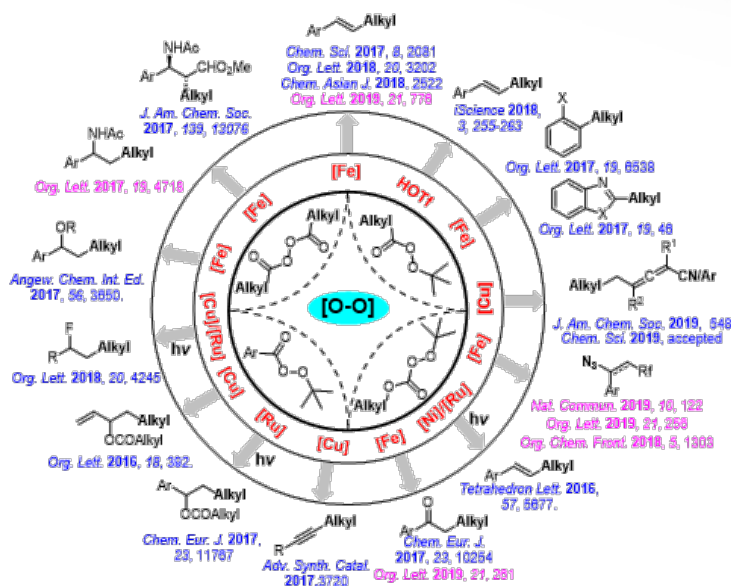
About Professor Bao Hongli



Professor Bao obtained her B.Sc. And Ph.D. in Chemistry from University of Science and Technology of China in 2003 and 2008 respectively. She continued her postdoctoral study at UT Southwestern Medical Center, U.S.A until 2013. Subsequently she joined the Fujian Institute of Research on the Structure of Matter as a Professor. Her research group focuses on the studies of peroxides with respect to different activation models and reactivities. Professor Bao has won several awards throughout her career such as UT Southwestern Medical Center, Chilton Award (2012), the Top-Notch Youth talent of Fujian Province (2014), Thieme Chemistry Journal Award (2016), Asian Core Program Lectureship Award to Singapore and Japan (2019), and many more.

Abstract

Peresters and diacyl peroxides are cheap chemicals commonly used in industry and academia as oxidants or radical initiators. Nevertheless, the utilization of peroxides as alkyl electrophiles was underexplored and there were very few documented examples. We systematically studied the reactivities of alkyl peroxides and the catalytic cracking modes of those compounds in the presence of different catalysts. We have developed several unique reactions in which alkyl peroxides serve as alkylating reagents, internal oxidants and functionality-activating reagents simultaneously. Meanwhile, these reactions disclosed many different and previously unknown interaction modes between alkyl peroxides and catalysts. Our work may shed some light on this area.



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