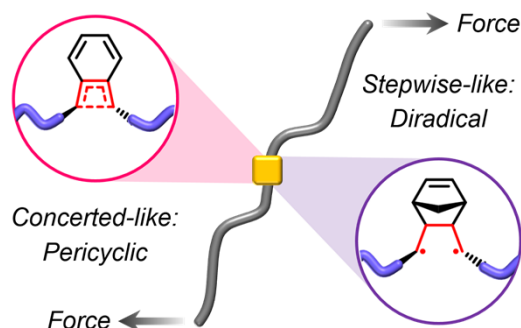


## Pathway Selection for Force-activated Ring Opening of Mechanophores: Aromatic vs Aliphatic Cyclobutenes

Yun Liu and Jeffrey S. Moore

Mechanical force is a universal stimuli in nature. Force-transducing functional groups, i.e., mechanophores, allows us to convert directional force into productive functional outcomes. However, our current understanding of force activation is still limited, preventing us from tailor-making mechanophores. Here, we show that the structural characteristics of cyclobutene mechanophores play a critical role in pathway selection for their force-activated ring opening. While the aromatic cyclobutenes undergo conventional pericyclic ring-opening, the aliphatic counterparts display significantly greater diradical character during their activation.



## A Soluble Base Enables Homogeneous, Anhydrous Suzuki-Miyaura Cross-Coupling of Boronic Esters

Connor P. Delaney, Vincent M. Kassel and Scott E. Denmark

The Suzuki-Miyaura reaction is a powerful tool that uses organoboron compounds for the construction of carbon-carbon bonds. Our group has previously demonstrated that certain boronic esters are capable of transmetalating over 20x faster than the parent boronic acid. Subsequently, we have developed anhydrous coupling conditions that take advantage of this rate increase while avoiding protodeboronation. Central to our advance is the use of potassium trimethylsilanolate, an oxyanionic base that is readily available and soluble in anhydrous THF. Our homogeneous conditions for the Suzuki-Miyaura reaction tolerate a variety of partners, are usually complete in under 5 minutes, operate at room temperature, and provide products in excellent yield.

