

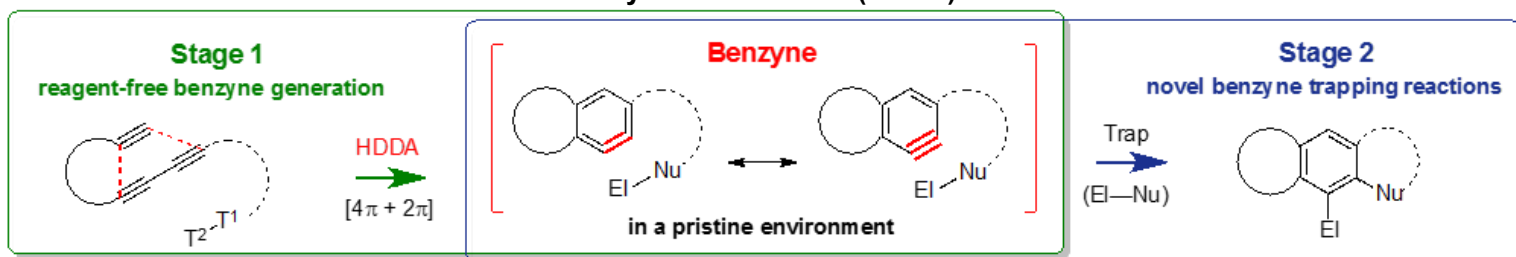
CHEMISTRY COLLOQUIUM



Professor Thomas Hoye
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Wednesday, October 17th, 12:00pm
Lander Auditorium
140 Hutchison Hall
University of Rochester
Department of Chemistry

The hexadehydro-Diels–Alder (HDDA) cascade



Title: “The (ongoing) evolution of the hexadehydro-Diels-Alder (HDDA) reaction”

Abstract:

Since mid-2011 we have been advancing the generality of a process that we call the hexadehydro-Diels–Alder (HDDA) reaction. This net [4+2] cycloisomerization produces an *o*-benzyne derivative, which is then rapidly captured in a subsequent trapping event. The HDDA reaction is a rare example of a transformation that generates a highly reactive intermediate by way of a highly exergonic (ca. $-50 \text{ kcal}\cdot\text{mol}^{-1}$) reaction! This two-stage, **benzyne generation-trapping** cascade results in the rapid assembly of structurally complex benzenoid products. This chemistry is both preparatively valuable and mechanistically instructive. It also can serve as a platform for altogether new modes of reactivity.

In this lecture I will emphasize some of the more recent aspects of our studies. These might include:

- three-component reactions
- the photochemical HDDA reaction
- the pentadehydro-Diels-Alder reaction¹¹
- the aza-HDDA reaction
- natural product synthesis⁷ and derivatization reactions
- new organic light-emitting diode (OLED) materials
- the domino HDDA reaction¹²
- BF_3 -promoted carbenic reactivity

Host: Professor Alison Frontier • Email: frontier@chem.rochester.edu

