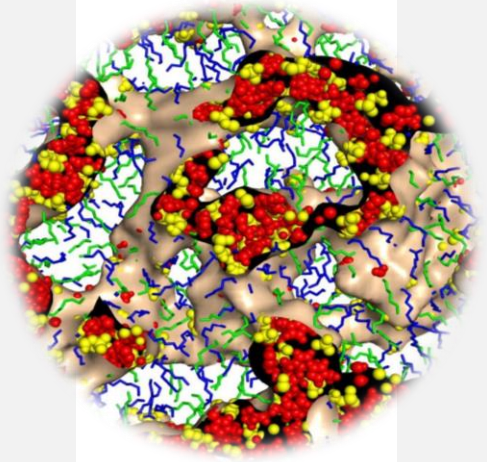

Inverse-Electron Demand Diels-Alder Reaction in Structured Solvents

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INTRODUCTION

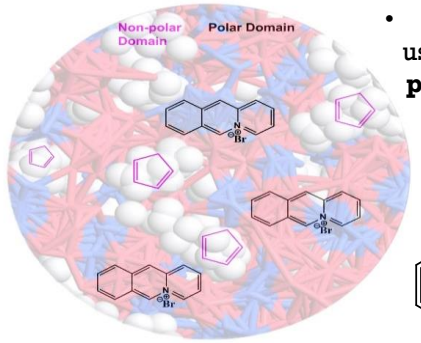
- The **presence of at least one amphiphilic ion/ molecular component** and **strong cohesive interactions** between ions can **cause some ILs and DESs** to **develop dichotomous, amphiphilic nanostructures**.[1]
- The **segregated polar domains** contain the **charged moieties**, while **non-polar regions** are made up of **alkyl chains.**
- Such anisotropic, **structured**, soft matter **systems** can **place electronic or steric constraints** on reactants, transition states and products, directly **affecting organic reactivity and reaction rates.**

OBJECTIVE

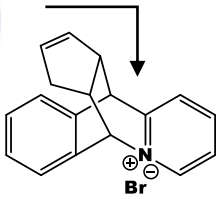
To study the **kinetics** of a DA_{inv} **reaction** in different nanostructured **ILs** and **DESs** to understand the effect of the inherent domains on reactivity.[2]

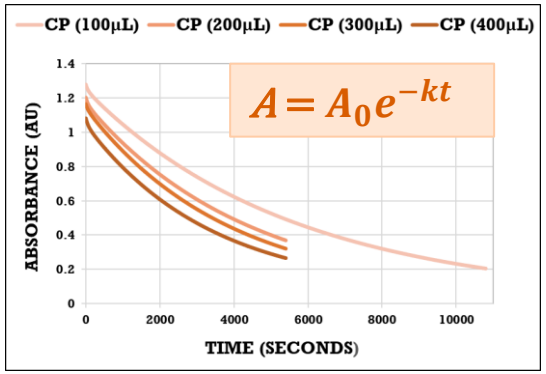
METHODS

- **Acridizinium Bromide** (electron-rich Dienophile)
- **Cyclopentadiene** (electron-poor Diene)

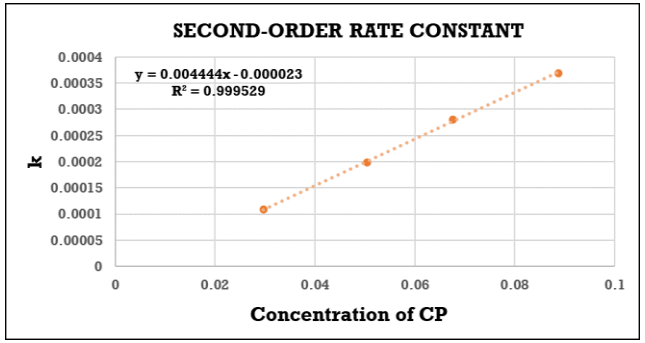


- DA_{inv} monitored using **UV-Vis** under **pseudo-first order** conditions

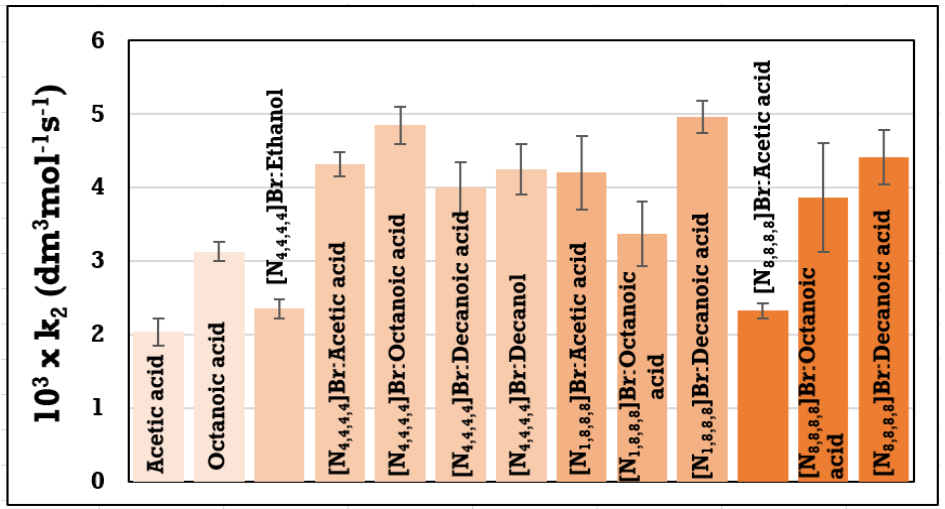




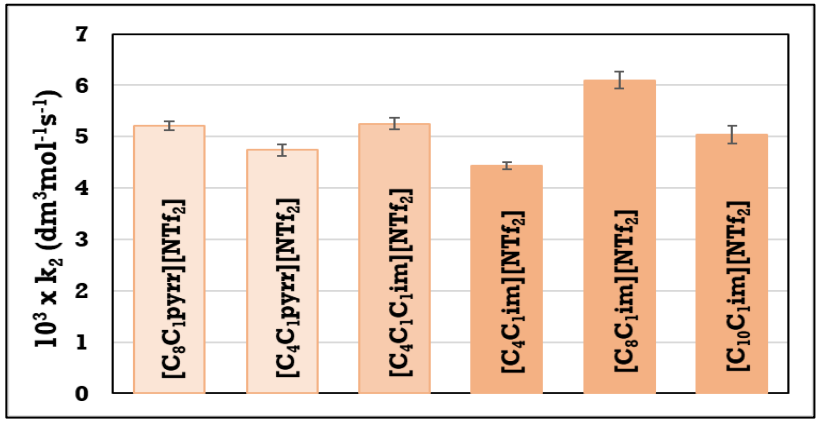
$$k_{obs} = k_2[CP]$$



RESULTS



Second-order rate constants obtained for DA_{inv} in several ILs, DESs and Organic solvents at 25°C.



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2. Van der Wel, G. K.; Wijnen, J. W.; Engberts, J. B. F. N. *J. Org. Chem.* **1996**, *61*, 25, 9001-9005.

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