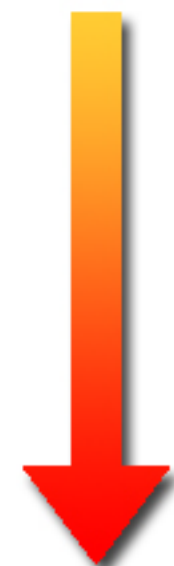


# Acidity Table

Compound	Conjugate Base	Hybridization	s Character	pK <sub>a</sub>
$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{H}-\text{C}-\text{C}-\text{H} \\   \quad   \\ \text{H} \quad \text{H} \end{array}$	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{H}-\text{C}-\text{C} \ominus \\   \quad   \\ \text{H} \quad \text{H} \end{array}$	<i>sp</i> <sup>3</sup>	25%	50
$\begin{array}{c} \text{H} \quad \quad \text{H} \\ \diagdown \quad / \\ \text{C}=\text{C} \\ / \quad \diagdown \\ \text{H} \quad \quad \text{H} \end{array}$	$\begin{array}{c} \text{H} \quad \quad \quad \ominus \\ \diagdown \quad / \\ \text{C}=\text{C} \\ / \quad \diagdown \\ \text{H} \quad \quad \quad \text{H} \end{array}$	<i>sp</i> <sup>2</sup>	33%	44
<i>:NH</i> <sub>3</sub>	<i>:NH</i> <sub>2</sub> <sup>-</sup>	(ammonia)		35
$\text{H}-\text{C}\equiv\text{C}-\text{H}$	$\text{H}-\text{C}\equiv\text{C} \ominus$	<i>sp</i>	50%	25
<i>R-OH</i>	<i>R-O</i> <sup>-</sup>	(alcohols)		16-18

Weakest acid

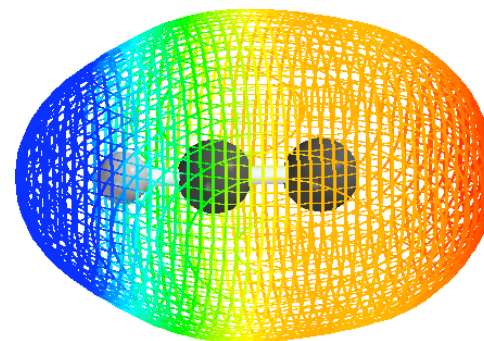
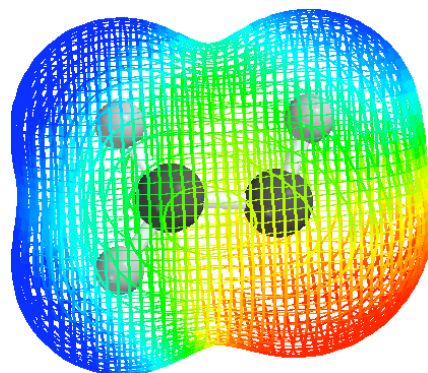
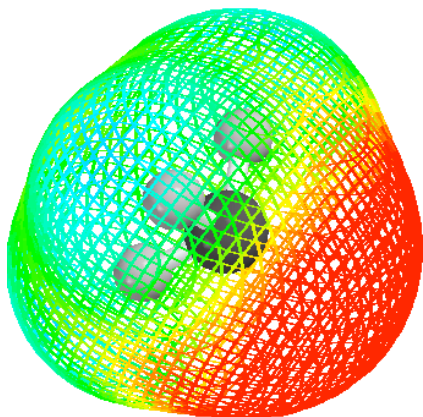
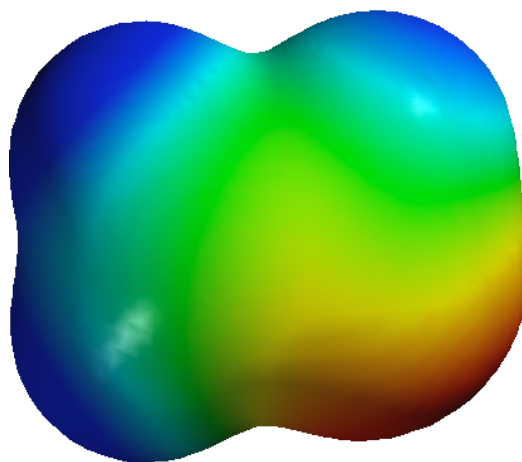
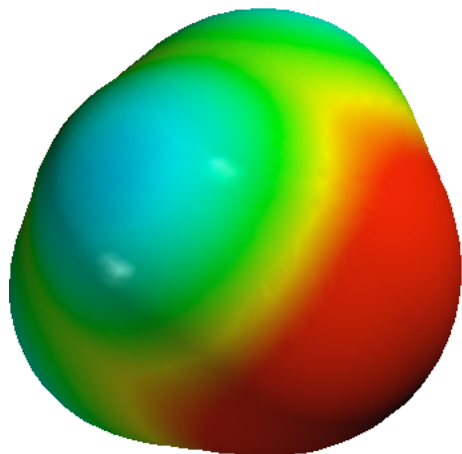
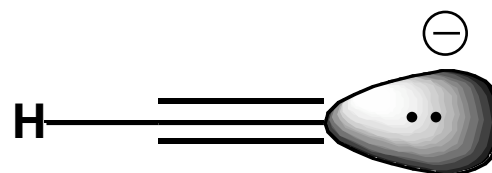
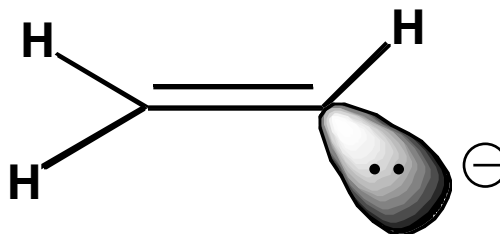
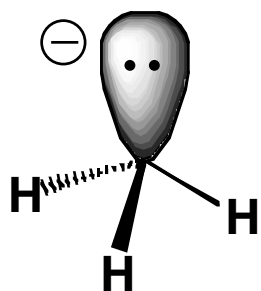


Stronger acid

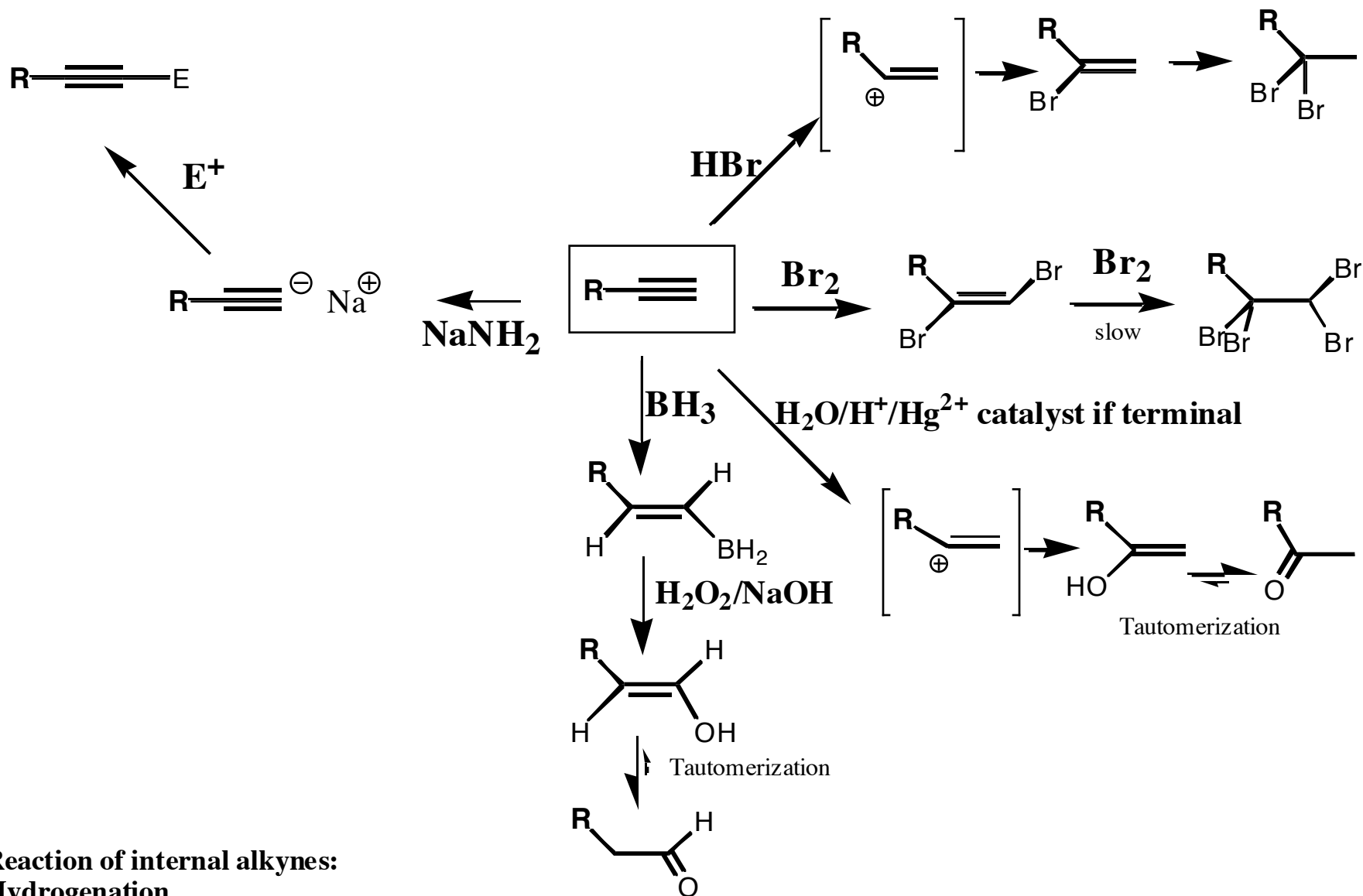


# ELECTROSTATIC POTENTIAL MAPS OF CARBANIONS

Derived computationally provide an indication of charge localization -  
RED = NEGATIVE      BLUE = POSITIVE



# SUMMARY OF ALKYNE CHEMISTRY



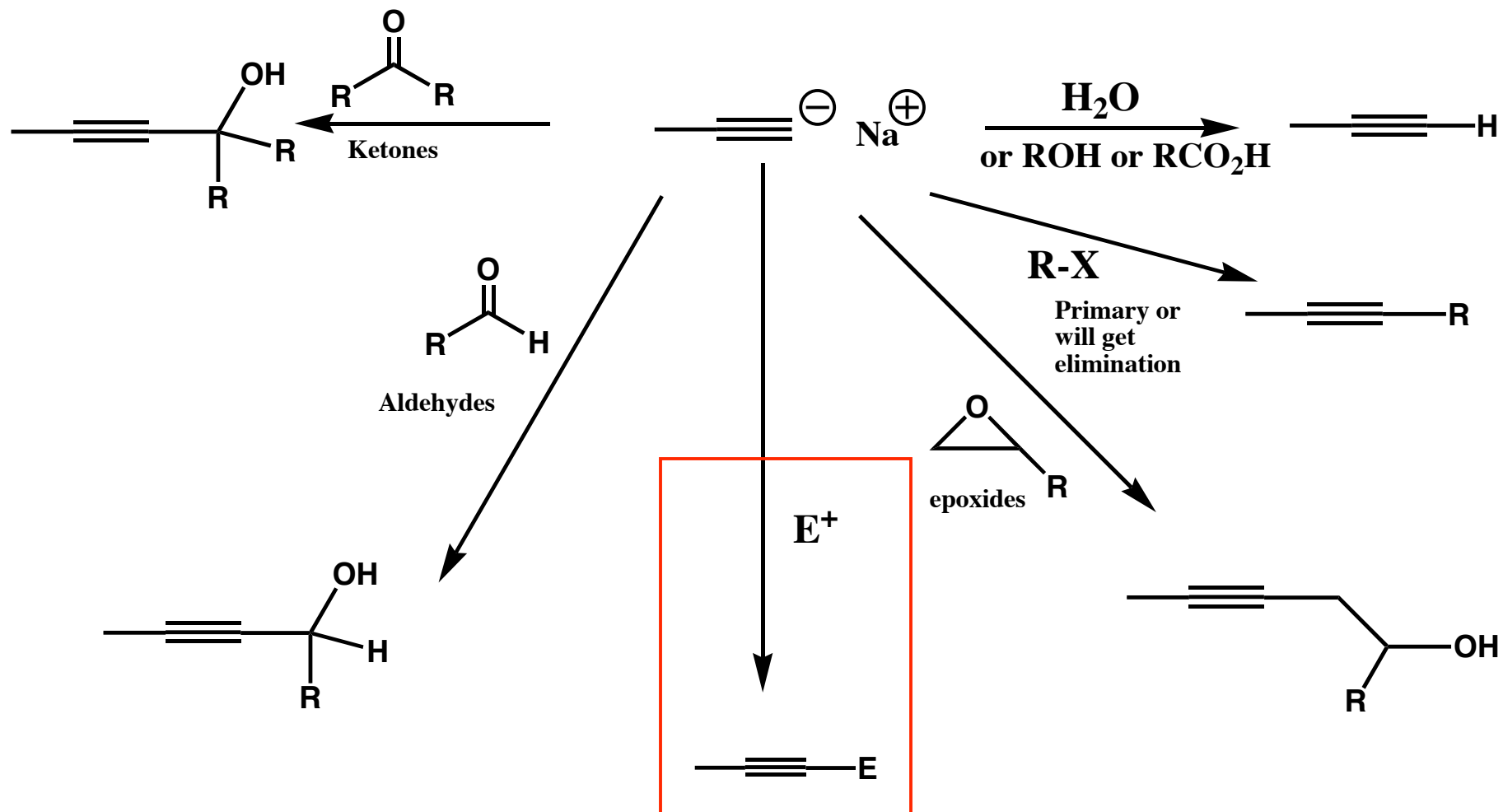
**Reaction of internal alkynes:**

**Hydrogenation**

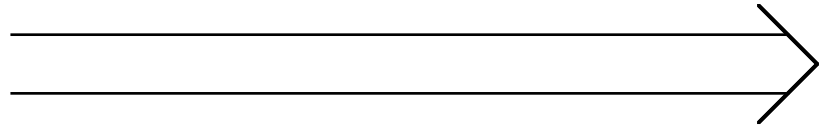
**SYN** addition of  $H_2$  -  $H_2/Pd/C$ , quinoline poison to afford **Z** alkene

**ANTI** addition of  $H_2$  -  $Na/NH_3$  to afford **E** alkene

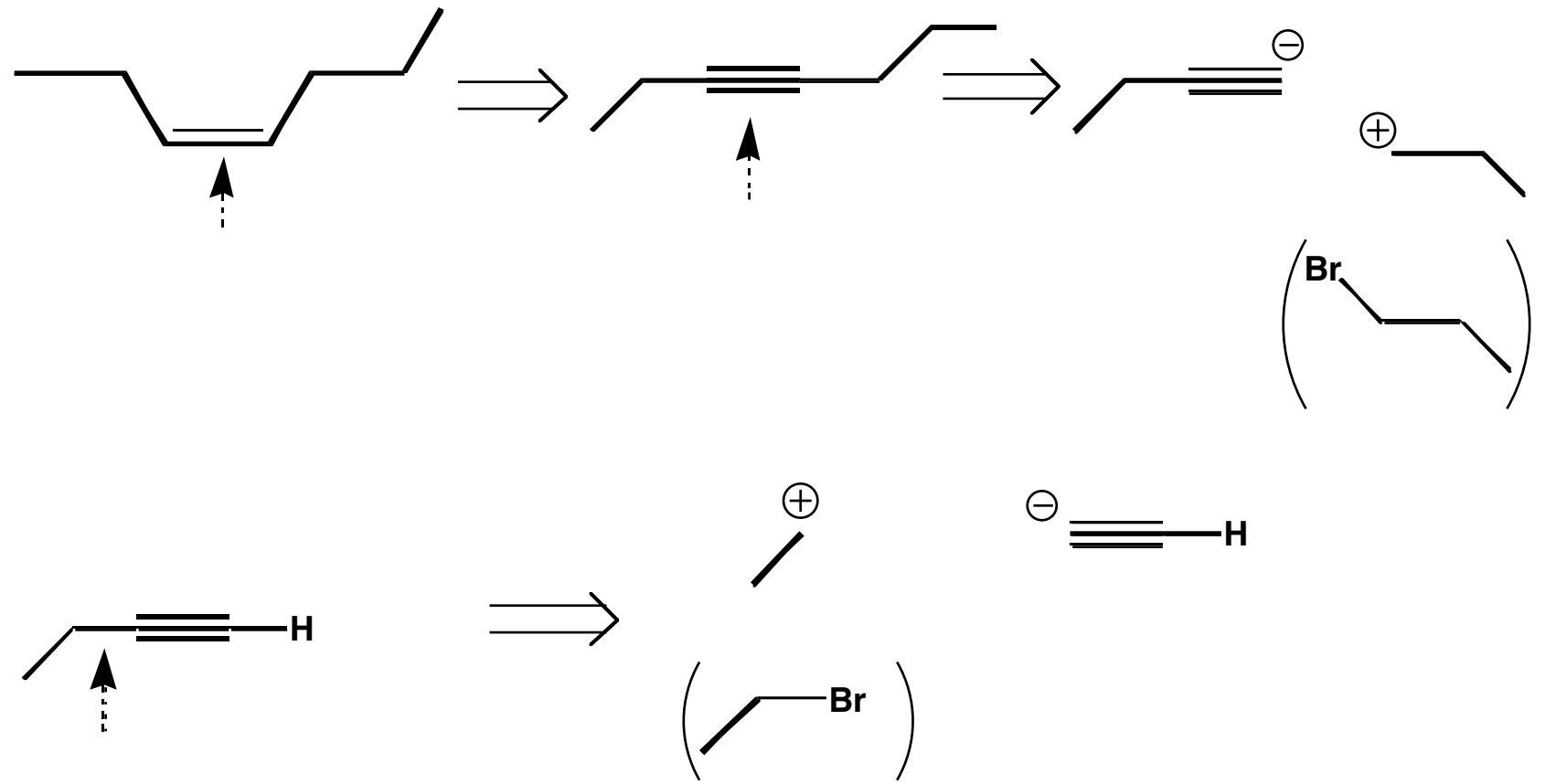
# REACTION OF ACETYLIDE ANIONS WITH ELECTROPHILES



# RETROSYNTHETIC ANALYSIS



A process of reasoning backwards from a target molecule to a suitable set of starting materials



# SYNTHESIS

