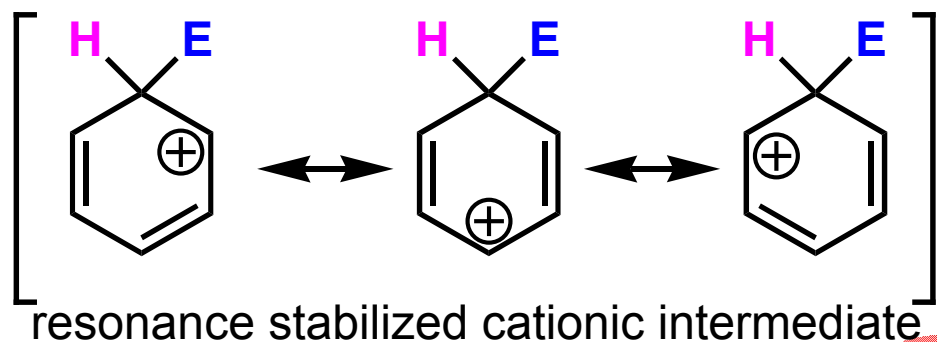
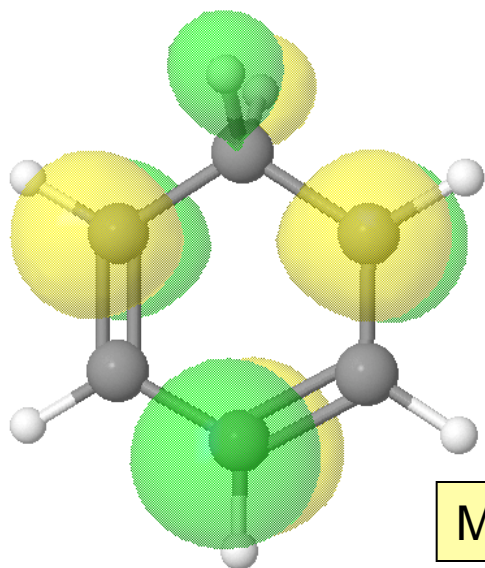
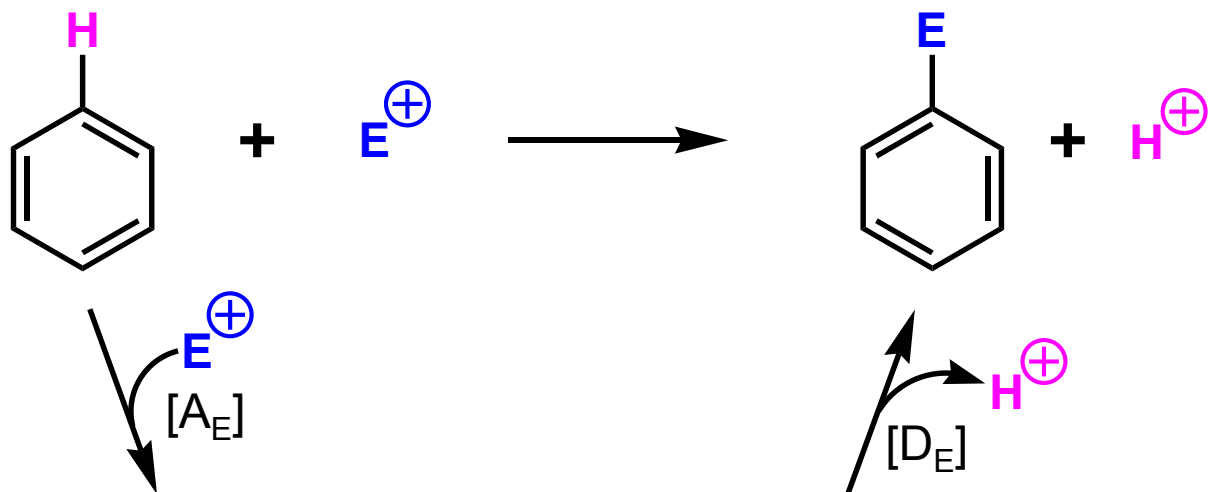


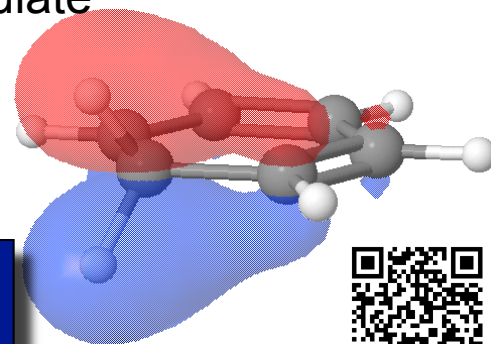
Four Mechanistic Pathways for Aromatic Substitution: I. Electrophilic Aromatic Substitution



MO pictures of the cationic intermediate

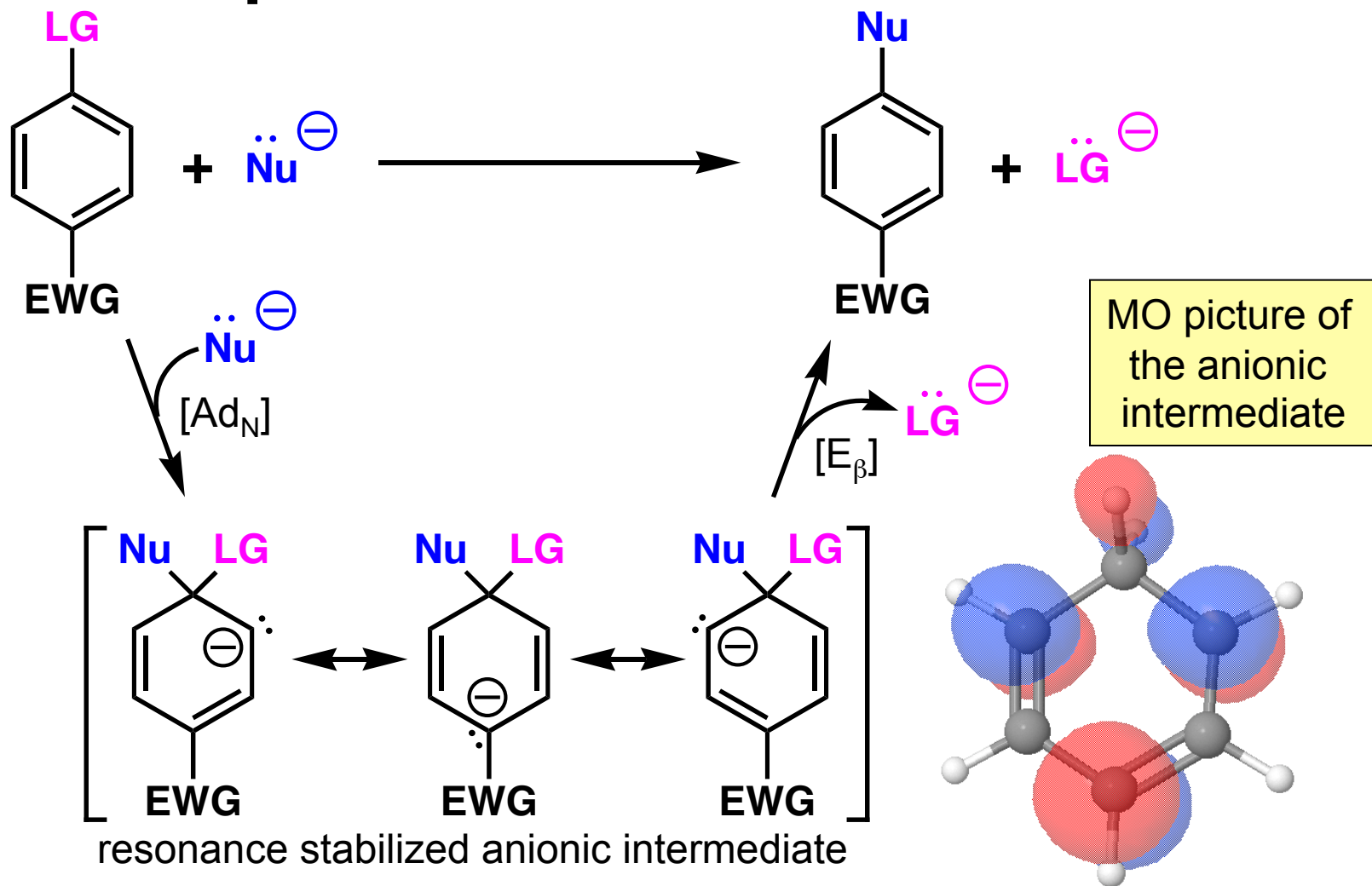
The LUMO shows positions of electron deficiency

this filled orbital shows a $\sigma \rightarrow a \pi$ -type interaction



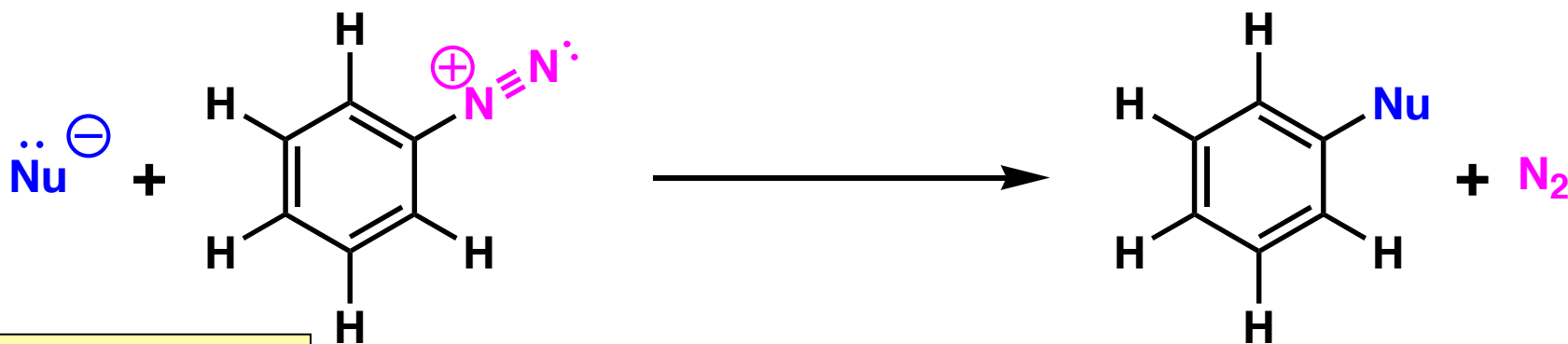
Four Mechanistic Pathways for Aromatic Substitution:

II. Nucleophilic Aromatic Substitution

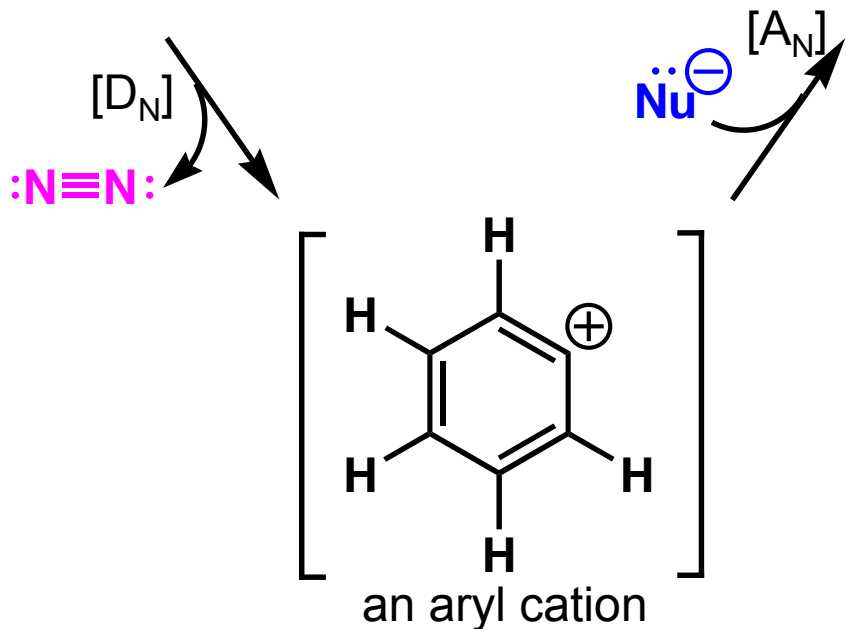
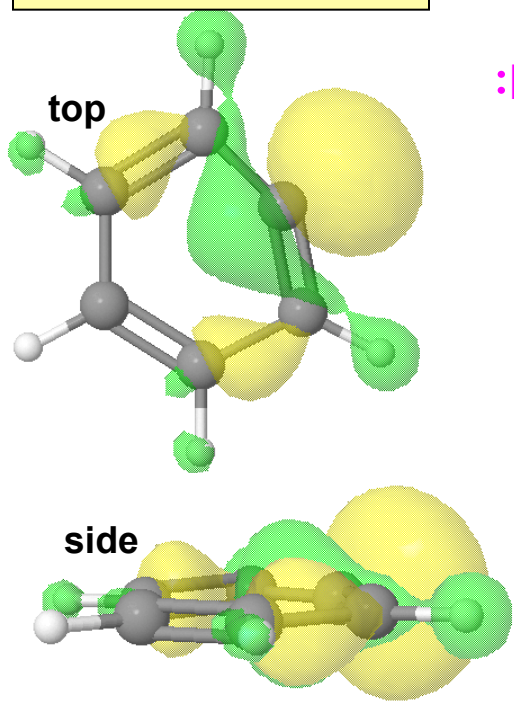


The HOMO shows positions of surplus electron density

Four Mechanistic Pathways for Aromatic Substitution: III. Substitution via Arenediazonium Ion



Two views of the aryl cation's LUMO



The LUMO shows positions of electron deficiency

the unsubstituted carbon of the aryl cation approaches *sp* hybridization and distorts the ring's geometry

Four Mechanistic Pathways for Aromatic Substitution: IV. Substitution via Benzyne Intermediate

