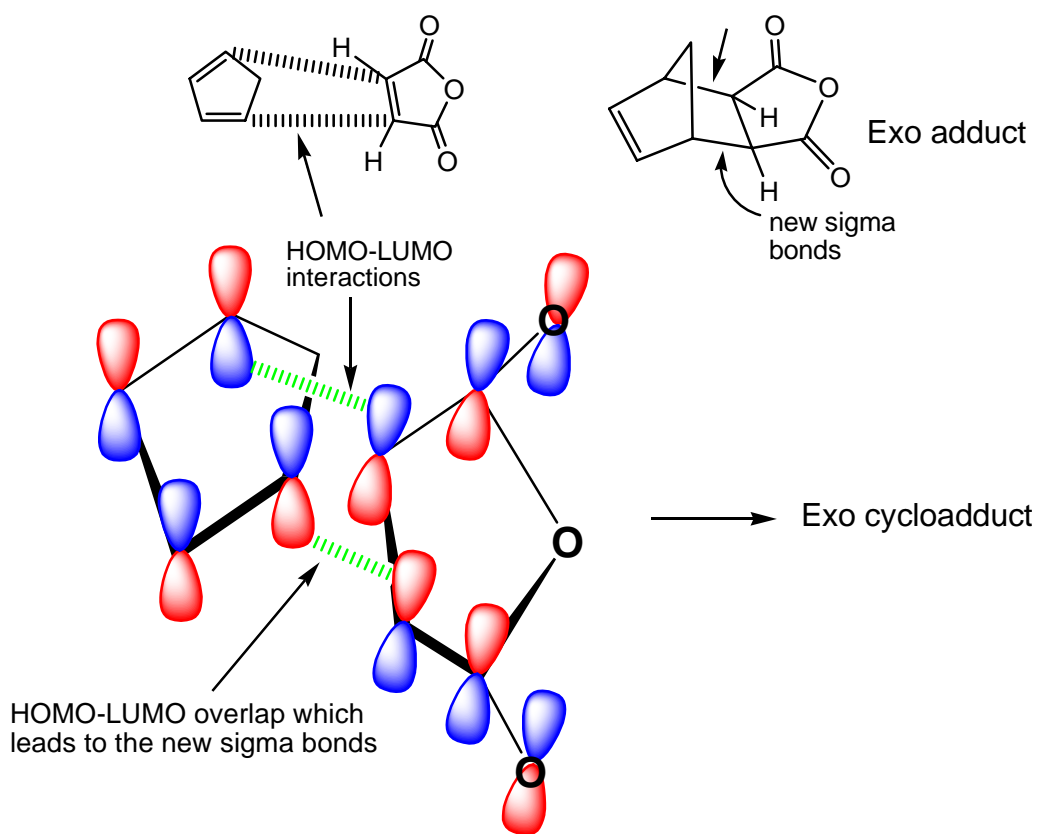


The HOMO of the diene (cyclopentadiene) and the LUMO of the dienophile (maleic anhydride) provide the HOMO-LUMO interaction which leads to the Diels-Alder cycloadduct. Shown here is the arrangement of diene and monoene which leads to the exo adduct.



The monoene can adopt a different angle of approach in which secondary orbital overlap occurs. This secondary overlap stabilizes the energy of the transition state (due to increased bonding interactions) and provides the endo cycloadduct.

