

DIENY A POLYENY



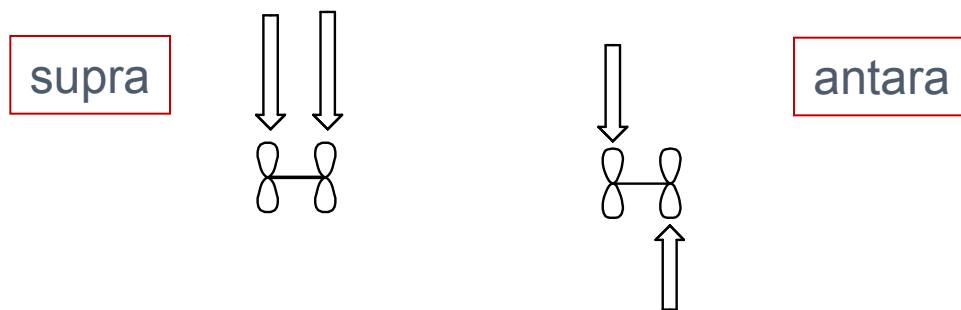
Pericyklické reakce

Woodward – Hoffmann

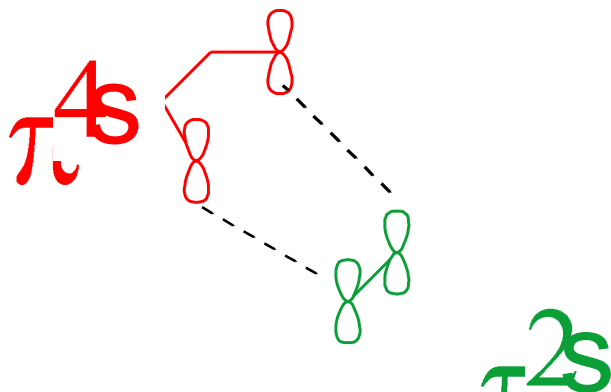
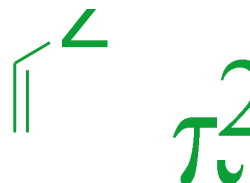
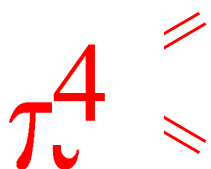
pravidla odvozena na základě korelace mezi molekulovými orbitaly reaktantů a produktů s využitím pravidla zachování orbitalové symetrie

$$(4q + 2)_s + (4r)_a$$

P. reakce je termicky povolena, je-li celkový počet suprafaciálně reagujících $(4q+2)$ elektronových komponent a antarafaciálně reagujících $(4r)$ elektronových komponent lichý (q, r jsou celá kladná čísla)



Pericyklické reakce



máme jednu $(4q + 2)_s$

Liché číslo



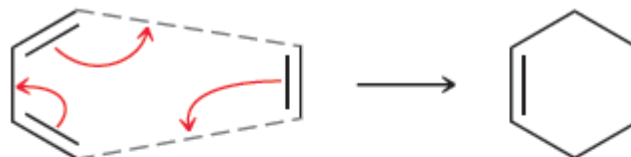
$(4q + 2)_s + (4r)_a$

nemáme žádnou $(4r)_a$



Pericyklické reakce

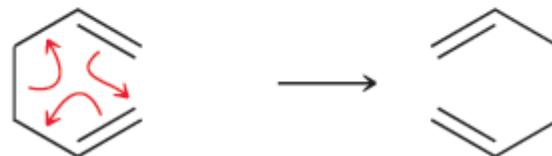
1) Cykloadiční reakce



2) Elektrocyklizační reakce

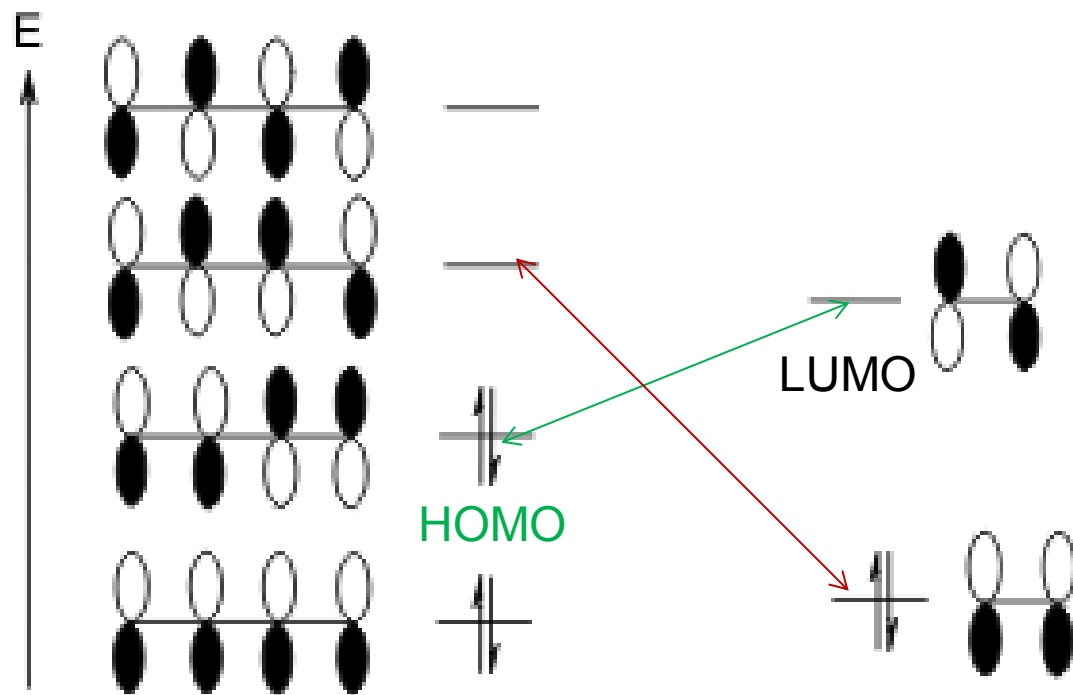
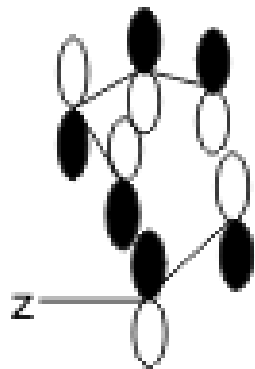


3) Sigmatropní přesmyky



σ vazeb	π vazeb
+2	-2
+1	-1
0	0

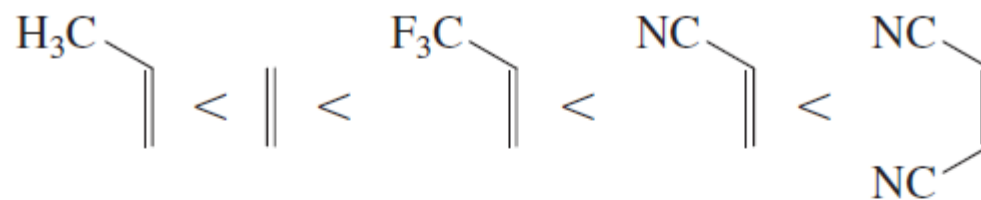




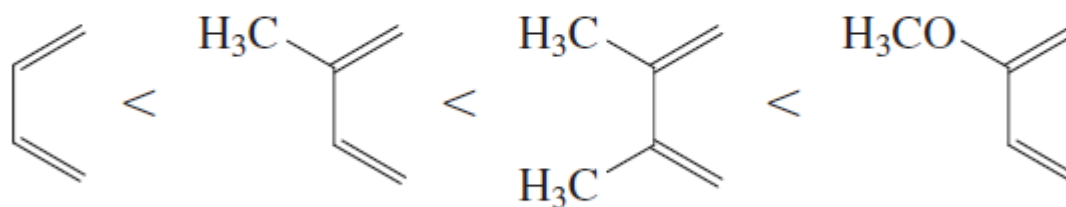
dien

dienofil






Dienophile

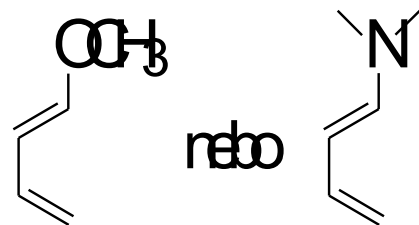
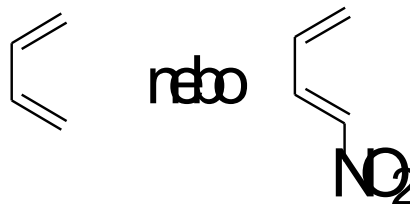


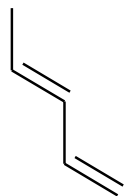
Diene

Increasing reactivity 



Který dien bude při D. - A. reakci s benzochinonem reaktivnější?



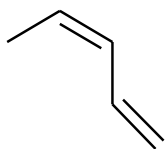


trans

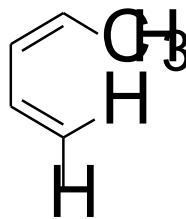


s-cis

reakcí konformace



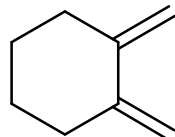
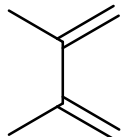
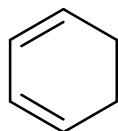
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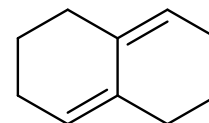
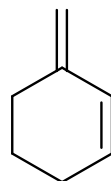
s-cis

reakcí konformace
části sterická zábrana

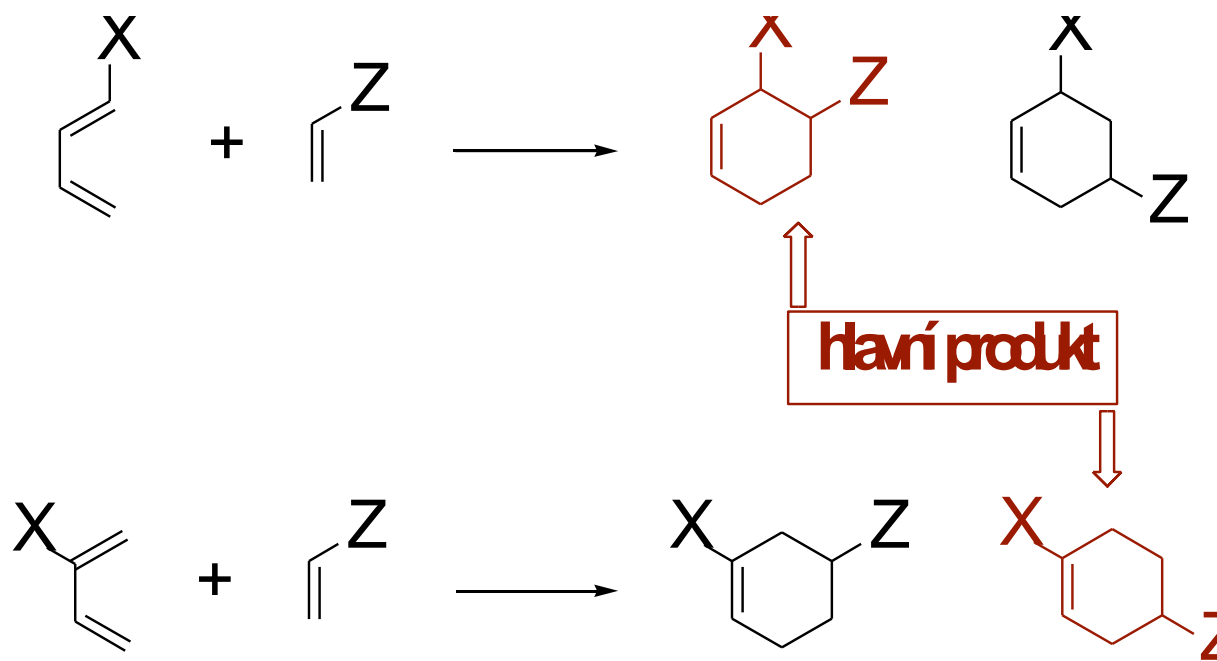
reaktivní dieny

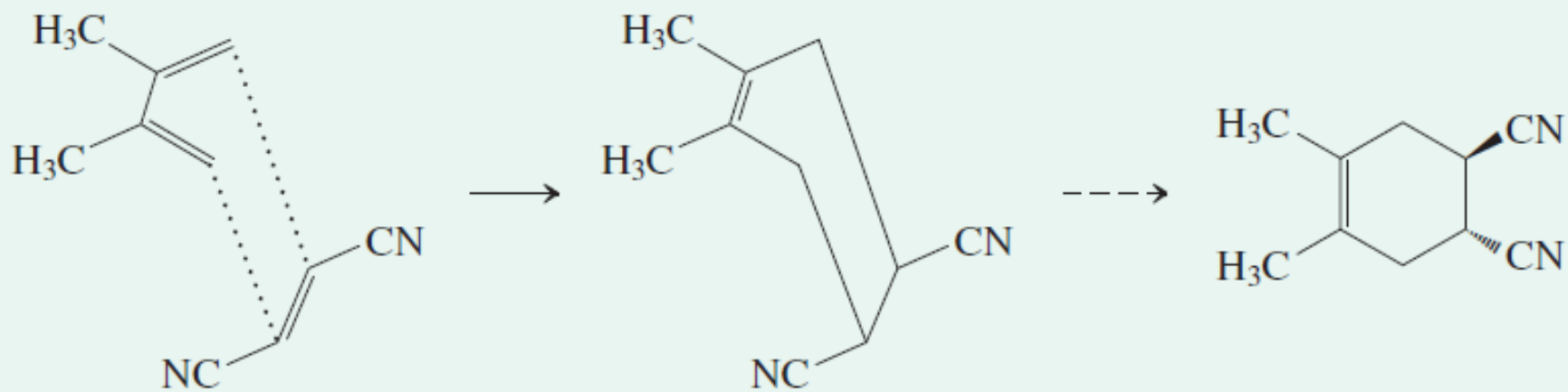
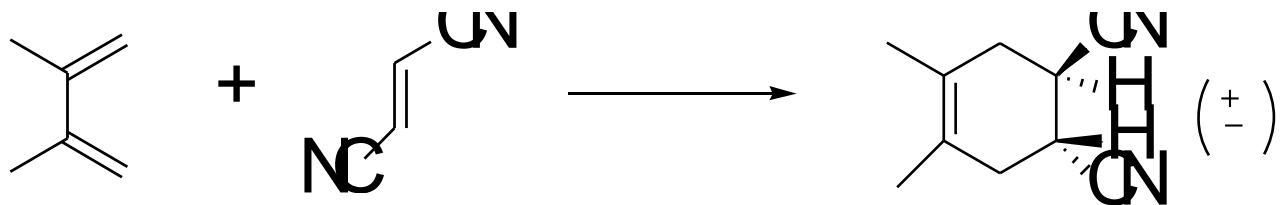


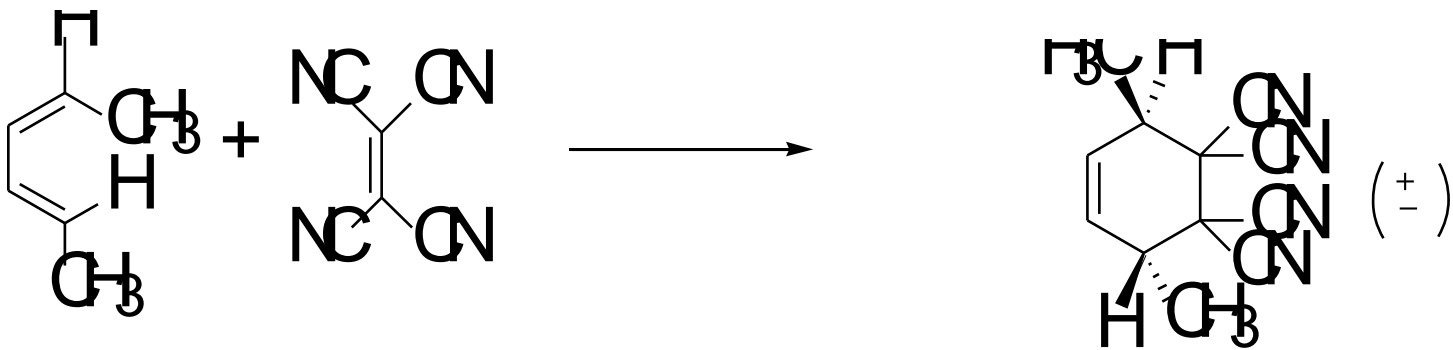
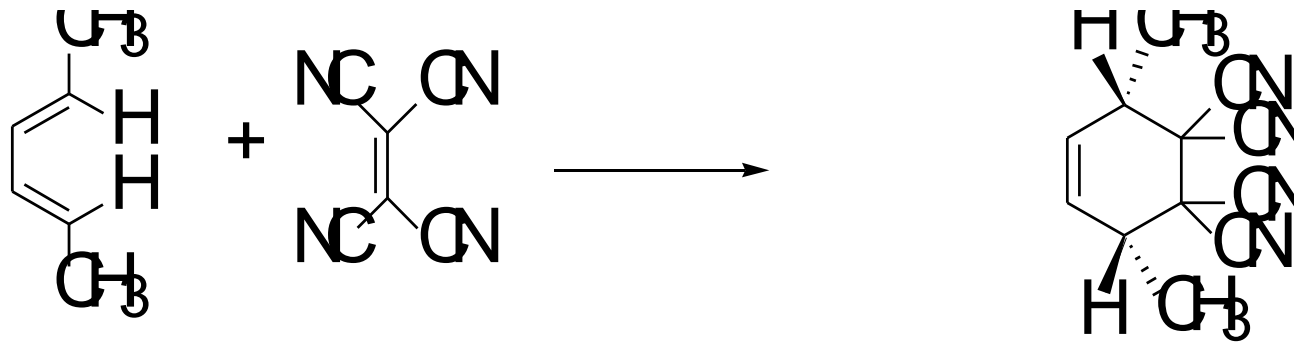
nereaktivní dieny

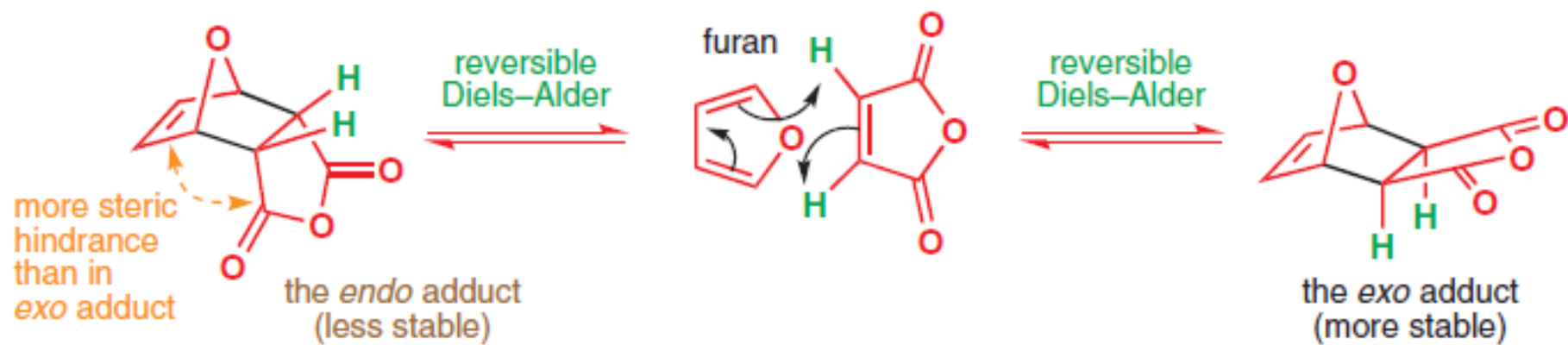


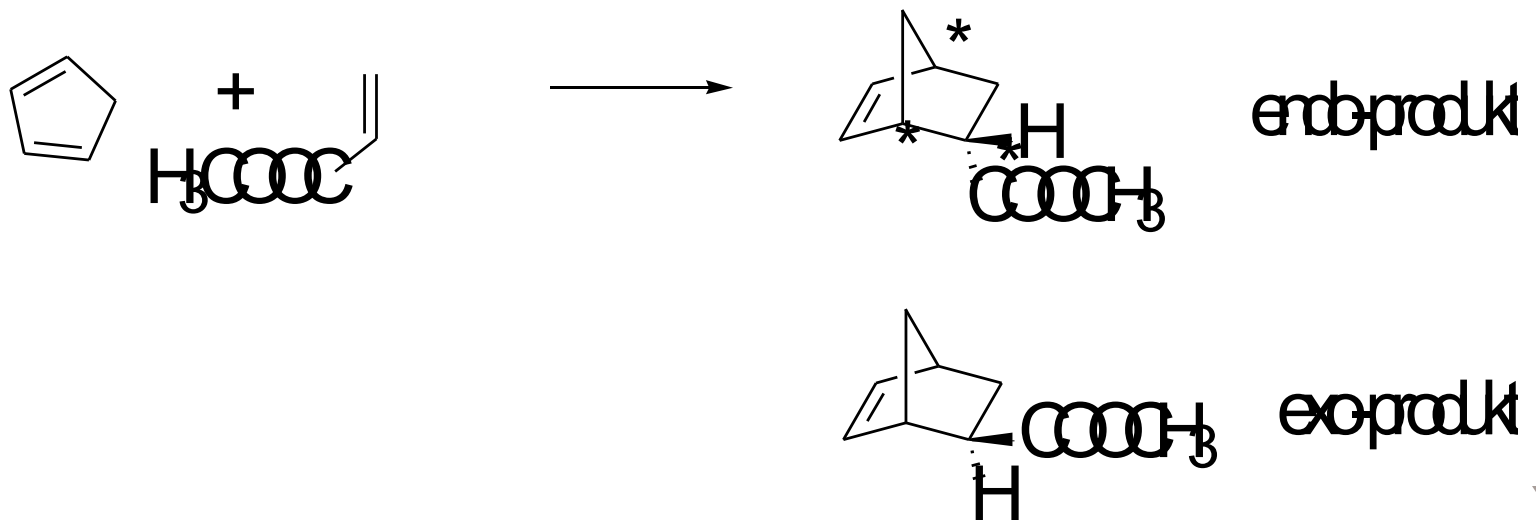
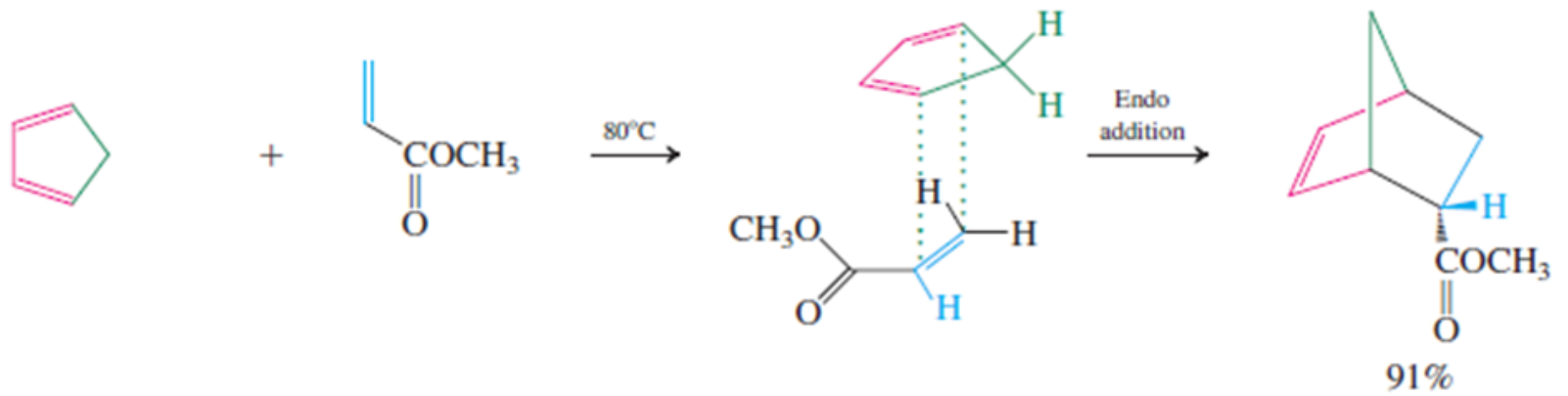
Regioisomery u Diels-Alderovy reakce



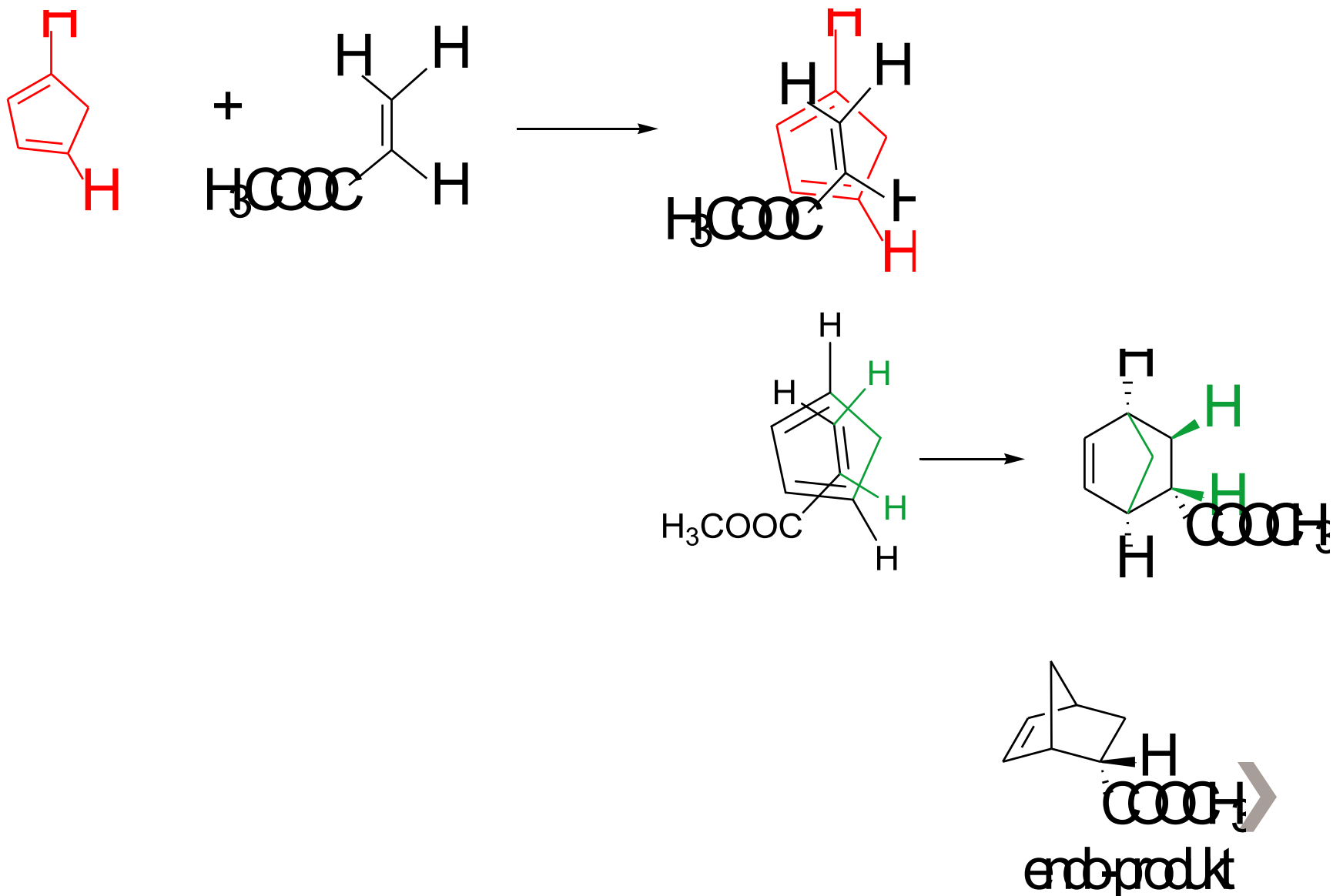


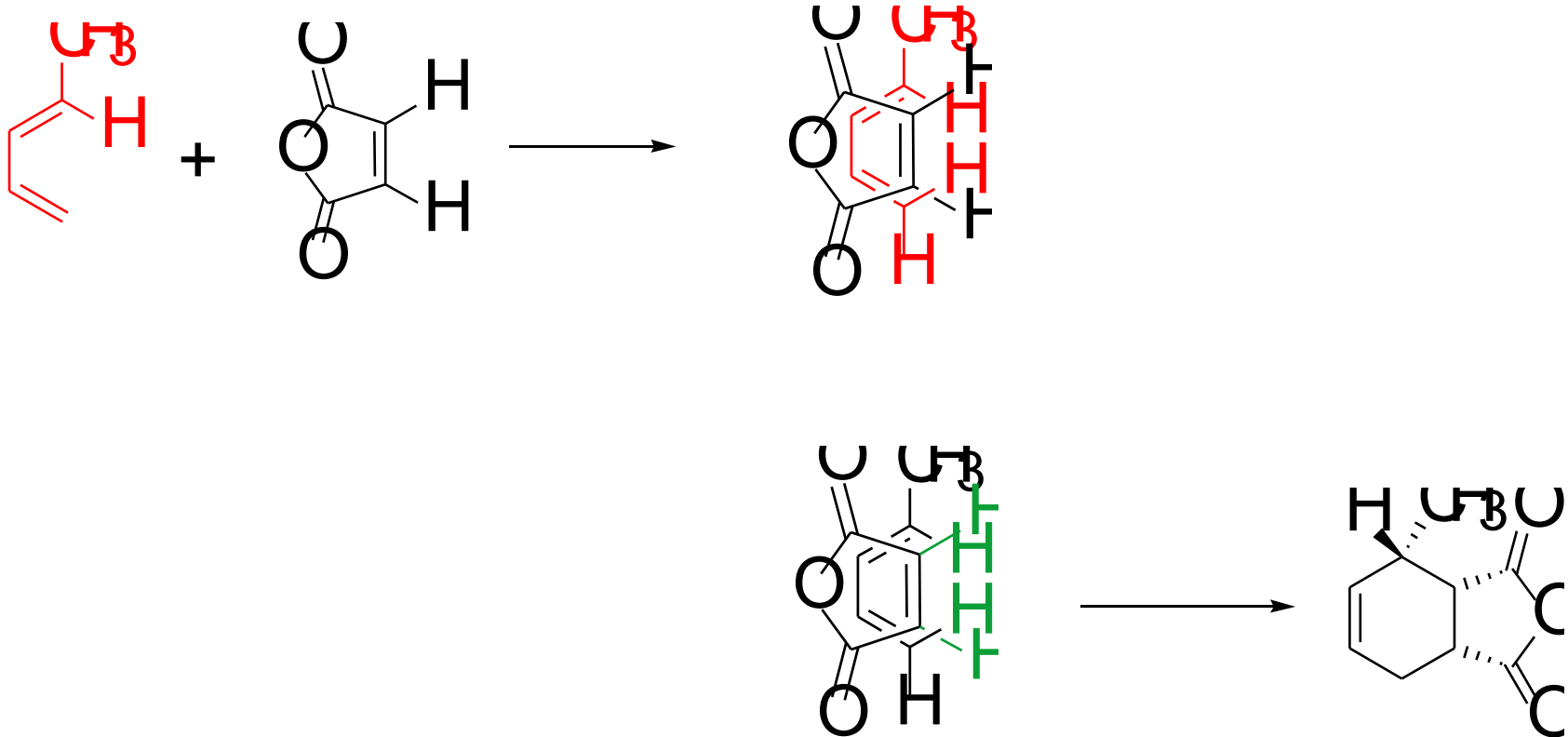


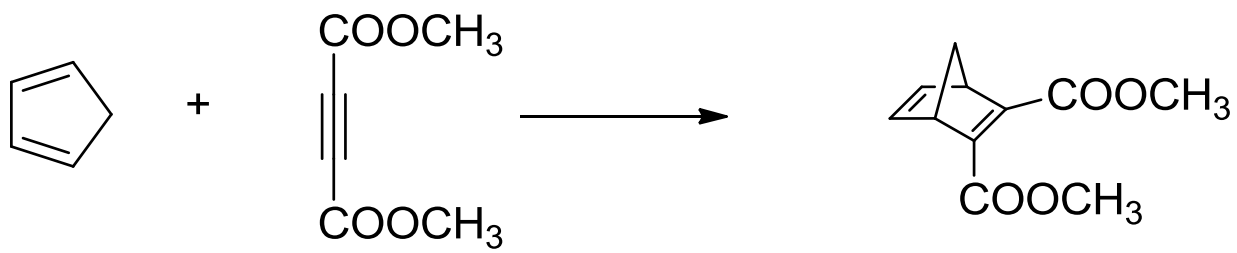


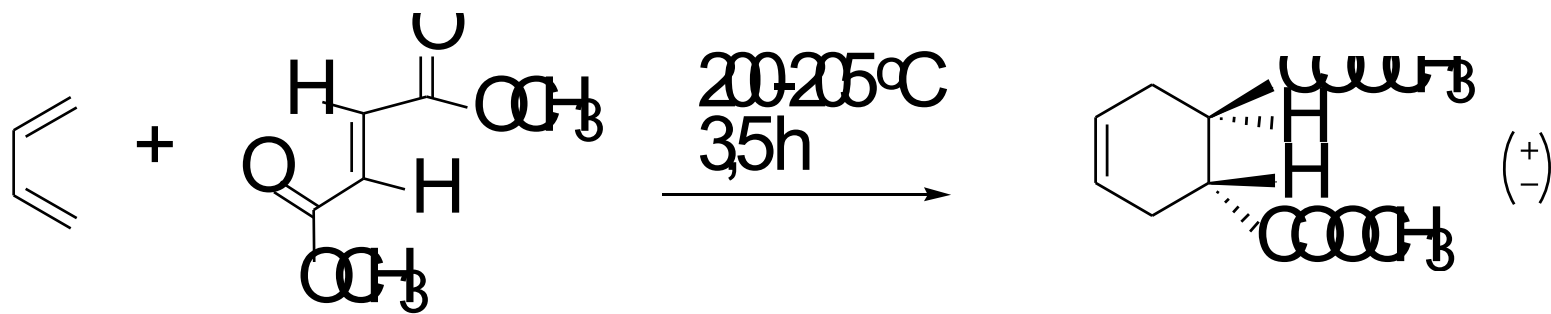
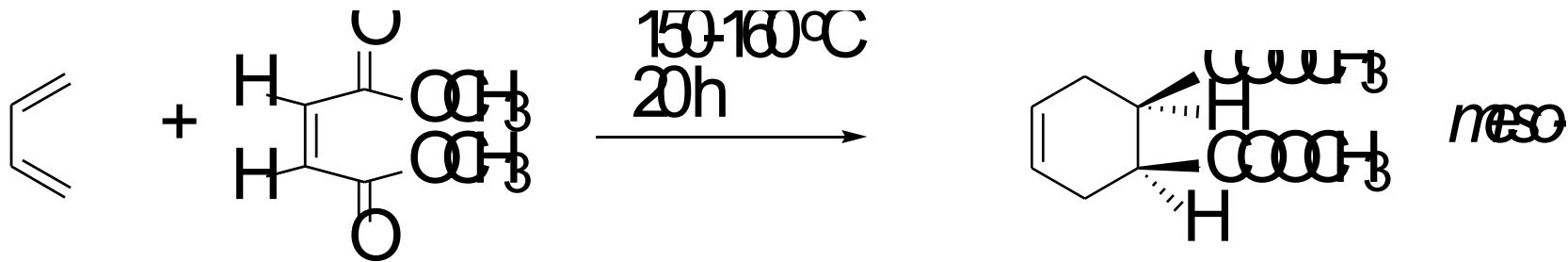


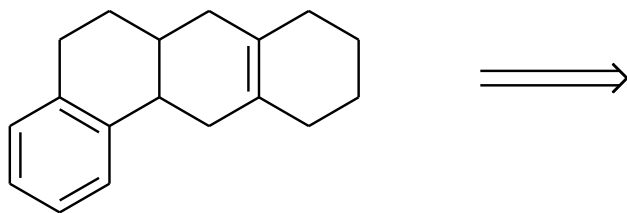
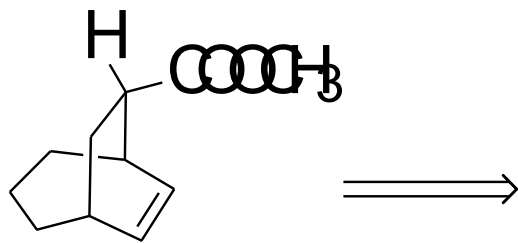
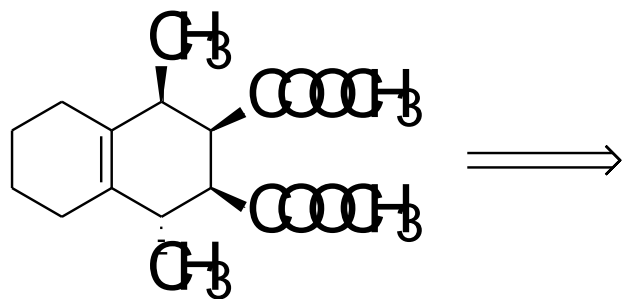
Jak nakreslit *endo* produkt

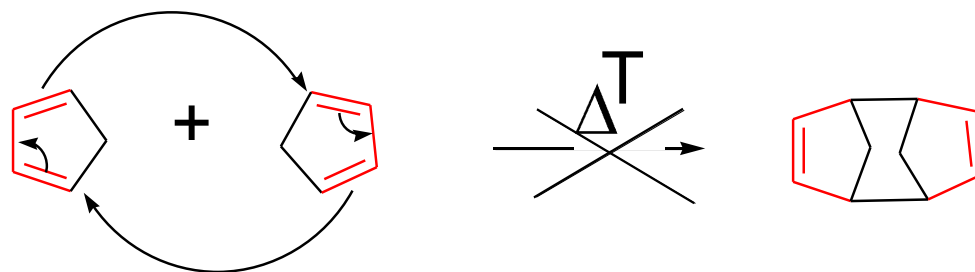


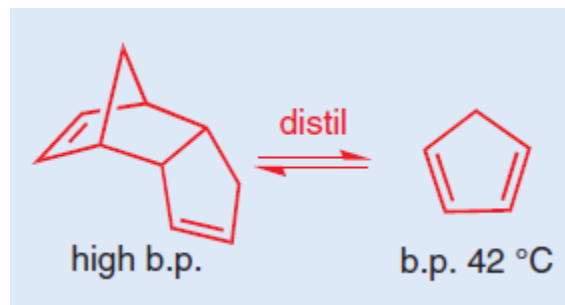
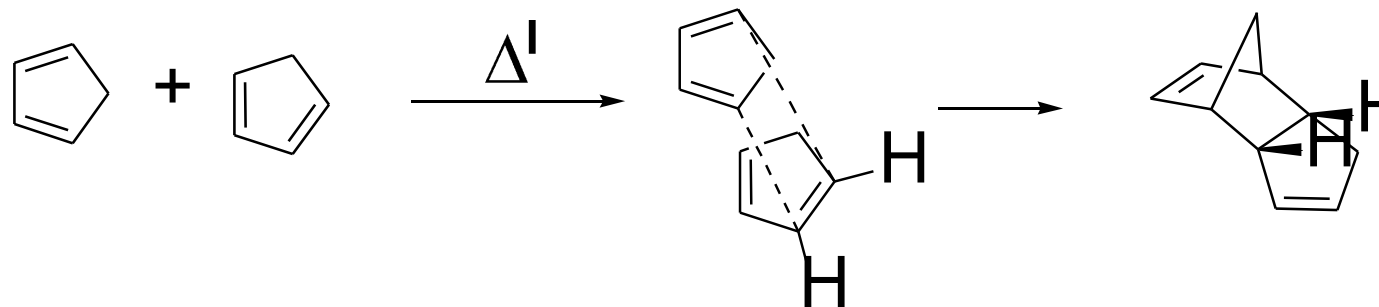


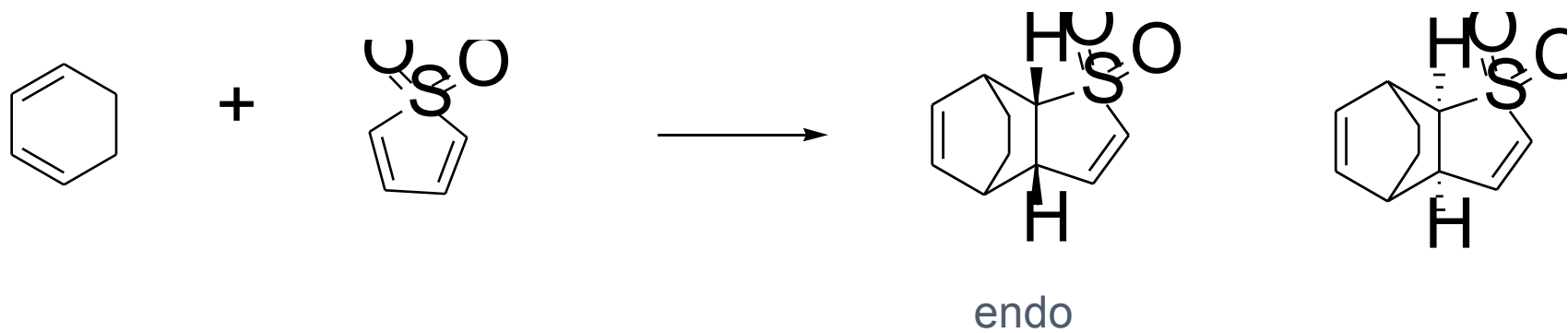
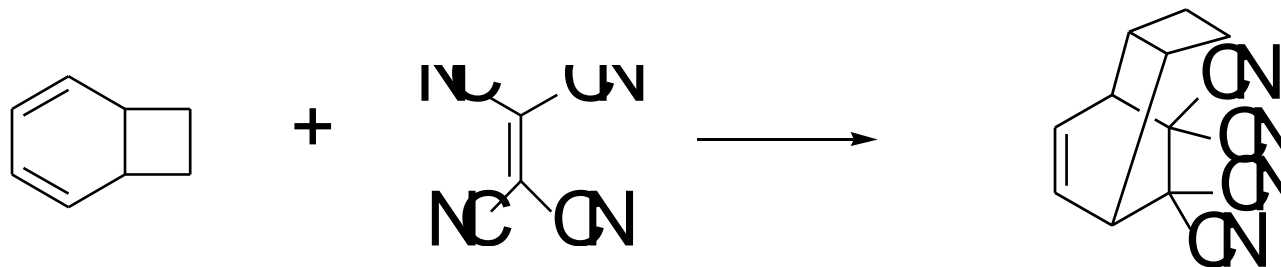


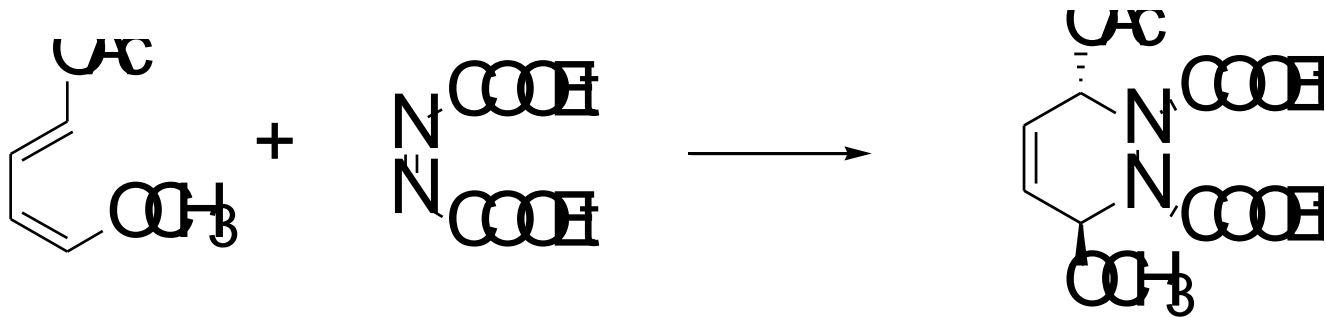


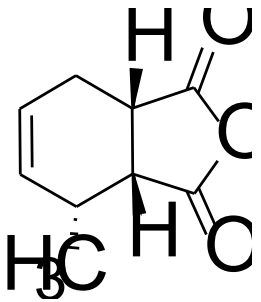
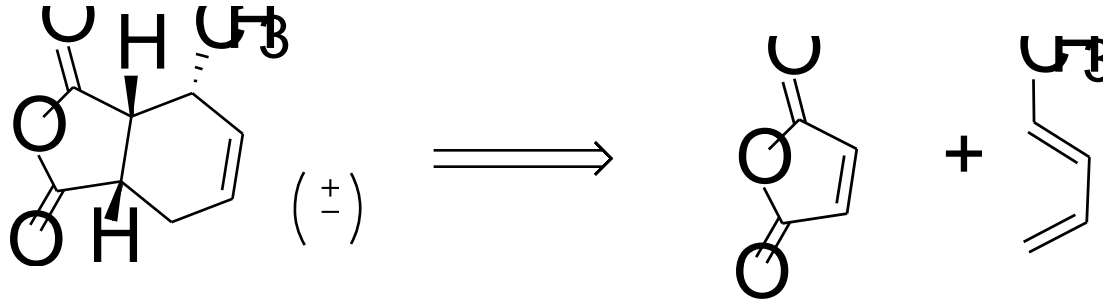


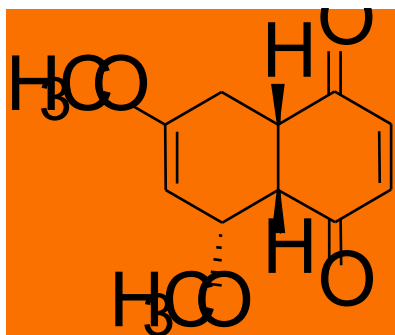
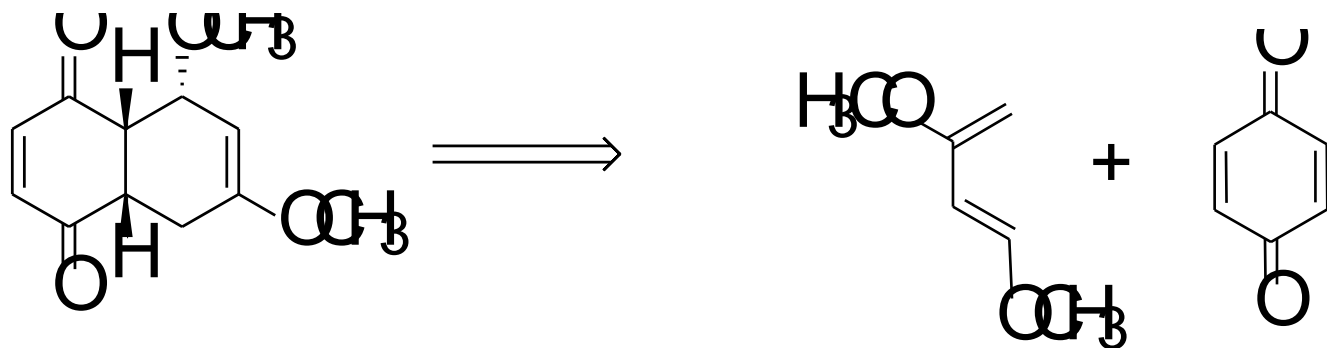
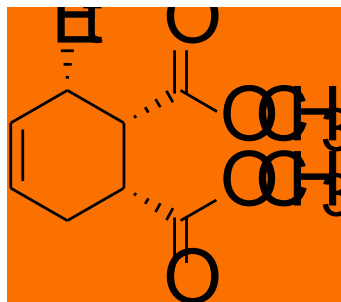
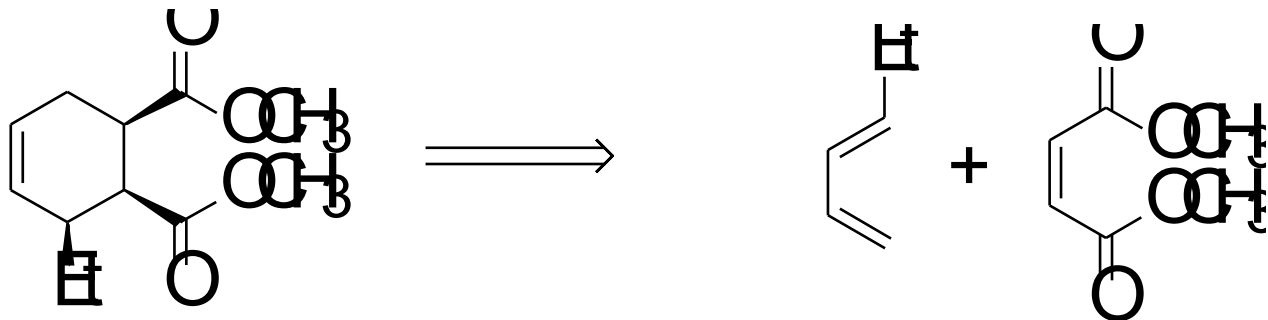




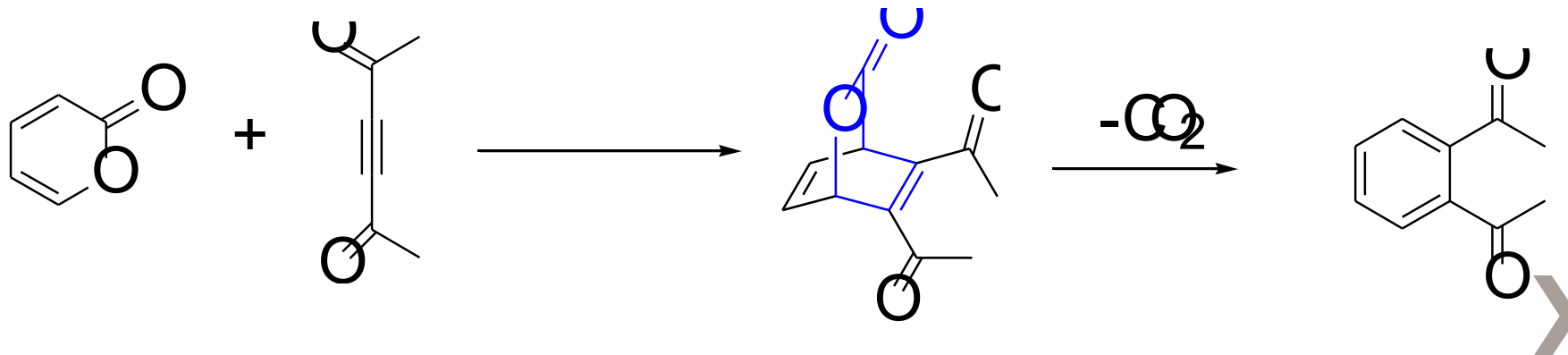
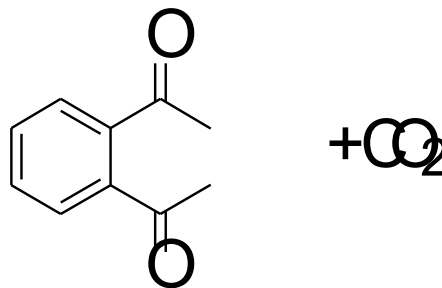
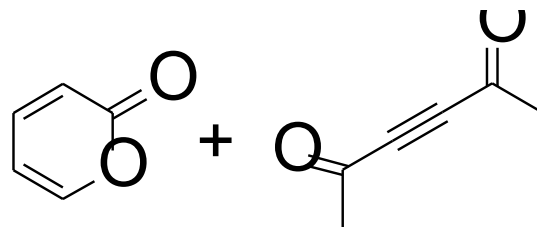








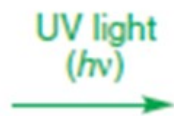
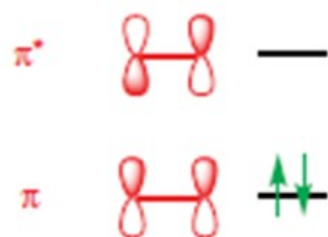
Vysvětlete a zapište mechanismus



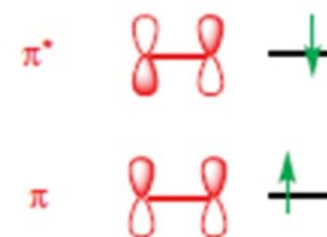
Cykloadiční reakce



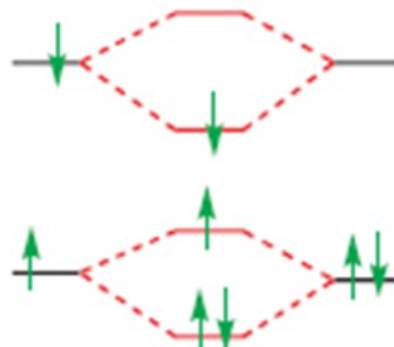
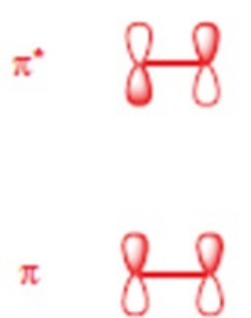
ground state of alkene



excited state of alkene



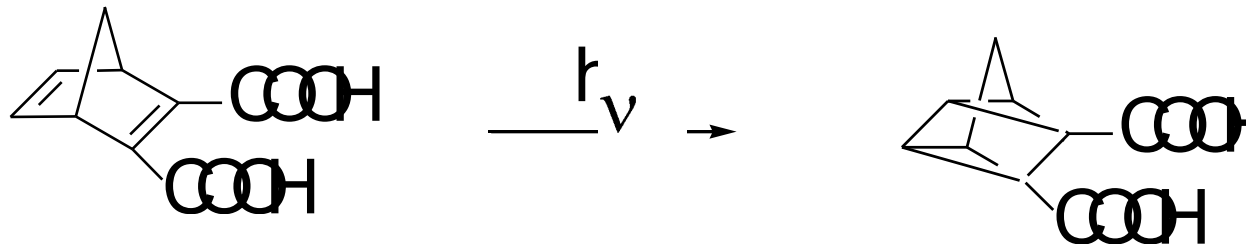
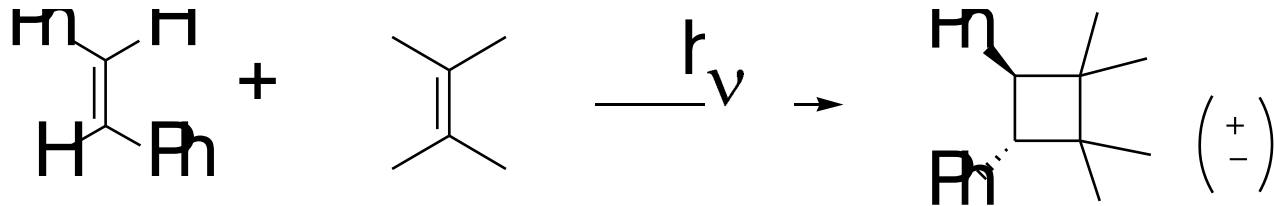
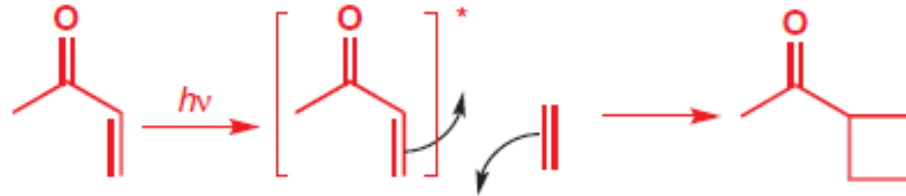
excited state of one alkene



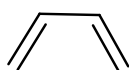
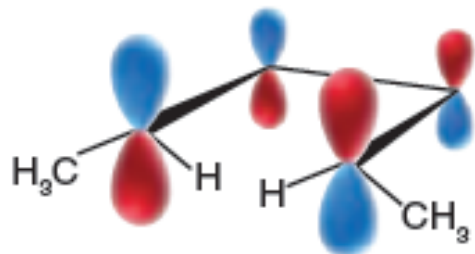
ground state of the other alkene



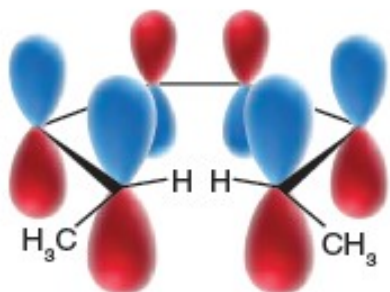
Cykloadiční reakce



Elektrocyclizační reakce



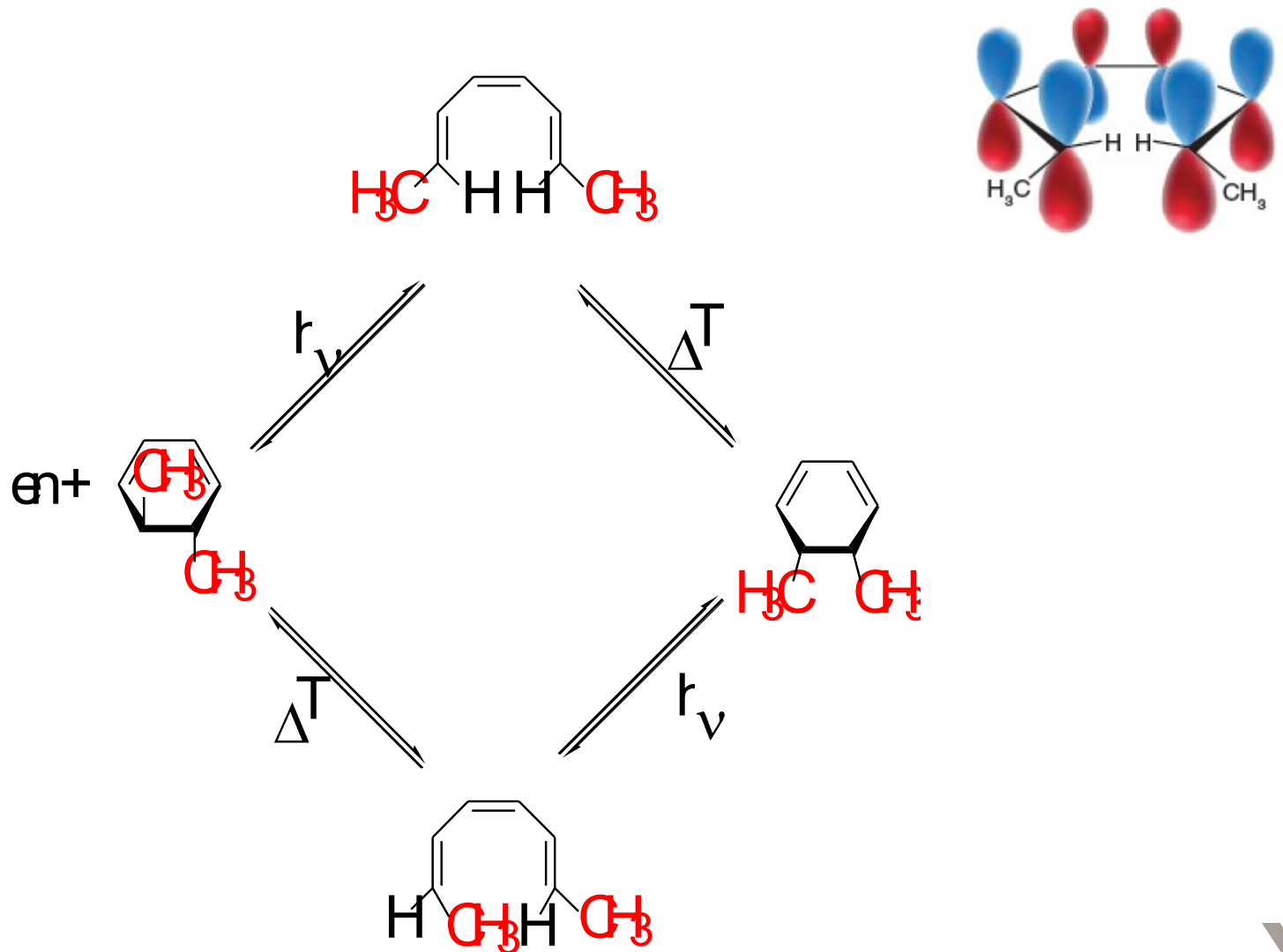
HOMO



	ΔT	$h\nu$
$4n$	konrotace antara	disrotace supra
$4n+2$	disrotace supra	konrotace antara

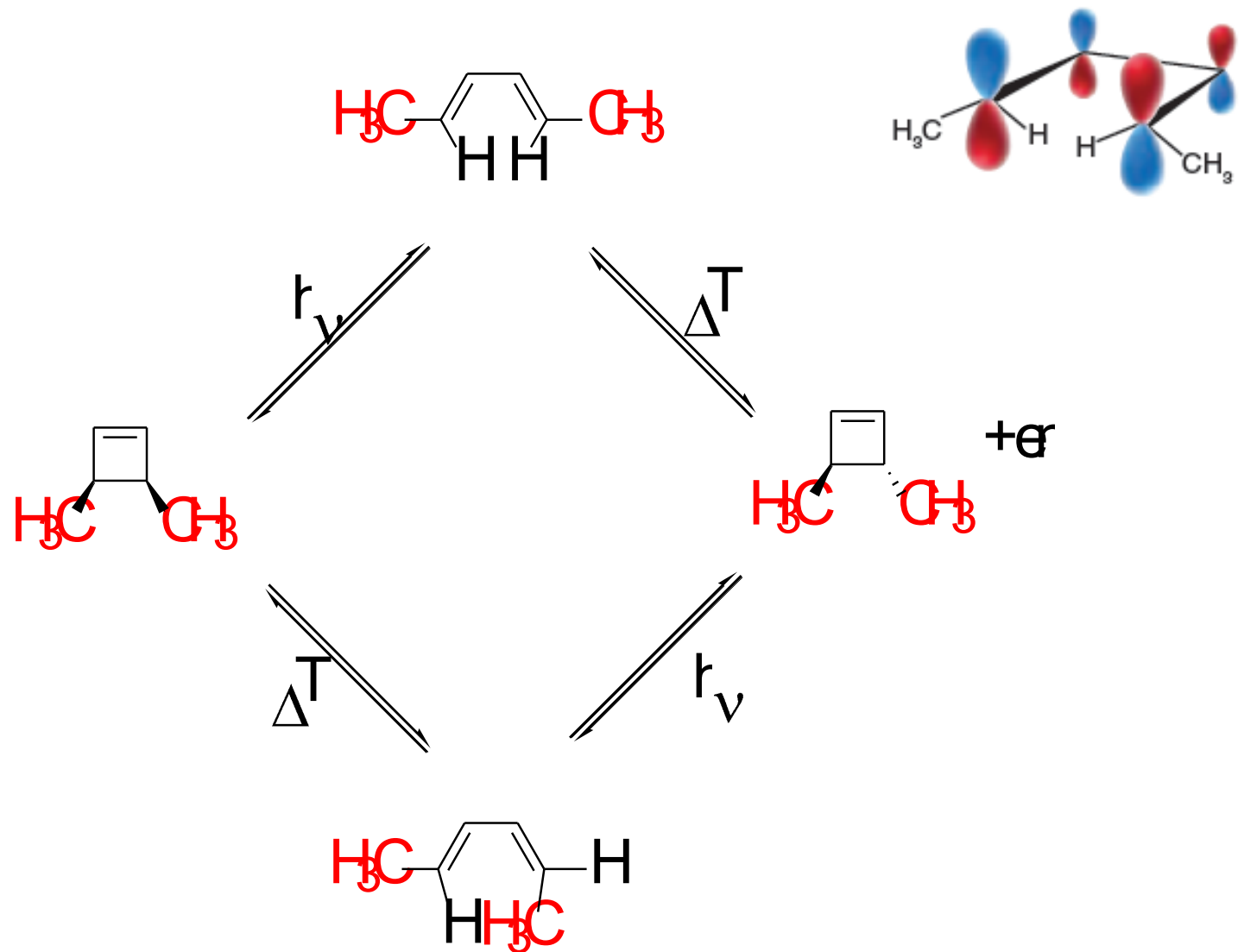


Elektrocyclizační reakce



preferance tvorby cyklického produktu

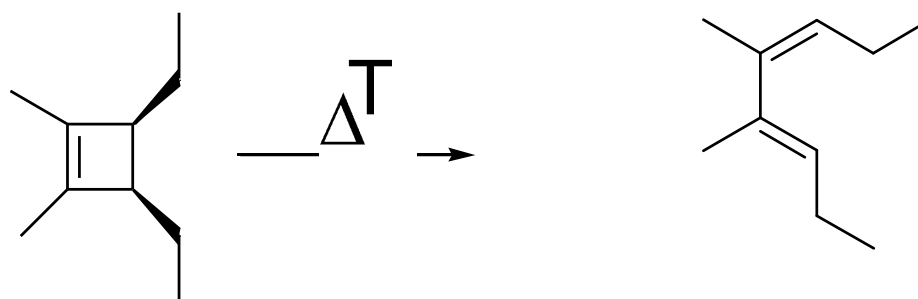
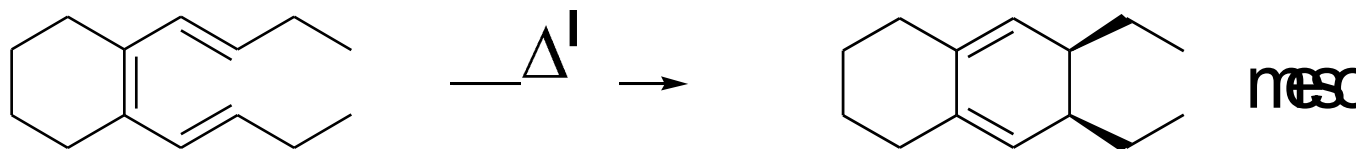




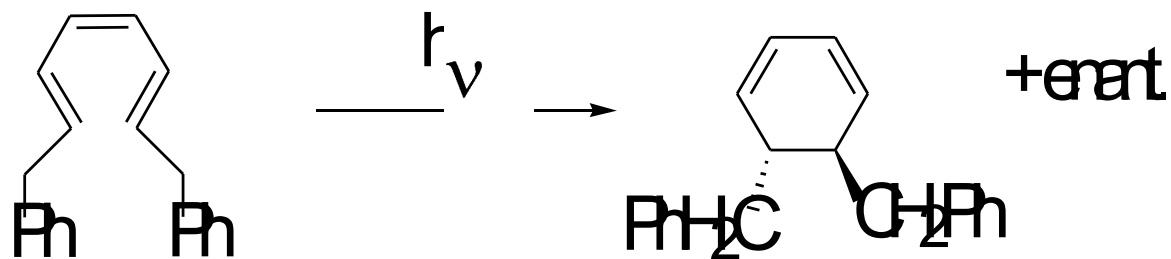
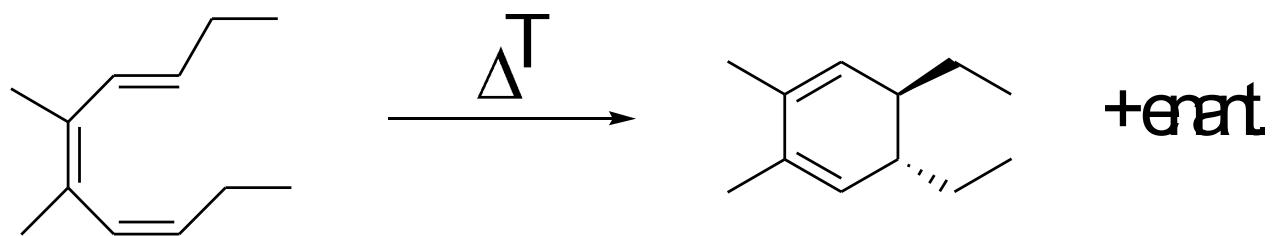
tvorba cyklického produktu není preferována z důvodu pnutí kruhu



	Δ^T	r_v
4n	konrotace	disrotace
4n+2	disrotace	konrotace

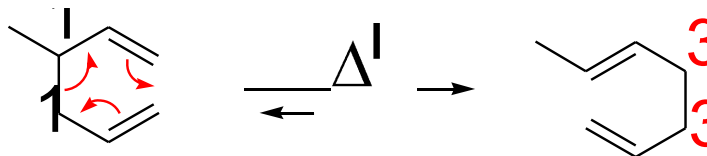


	Δ^T	r_v
$4n$	konrotace	disrotace
$4n+2$	disrotace	konrotace



Sigmatropní přesmyky

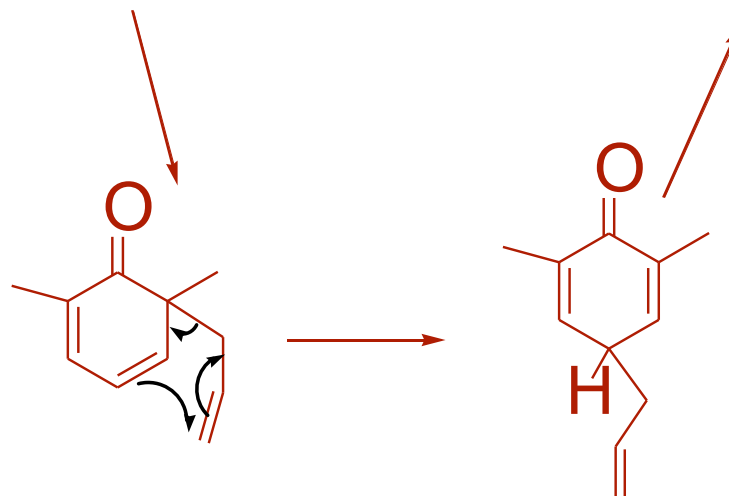
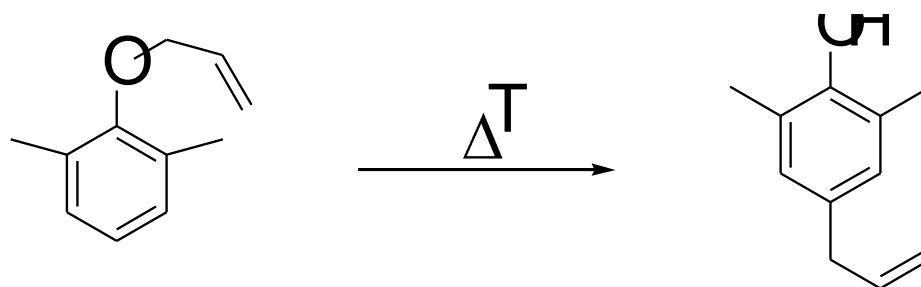
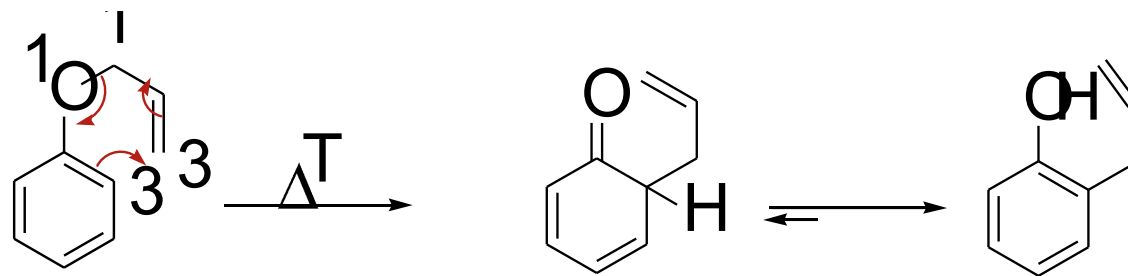
Copeho přesmyk

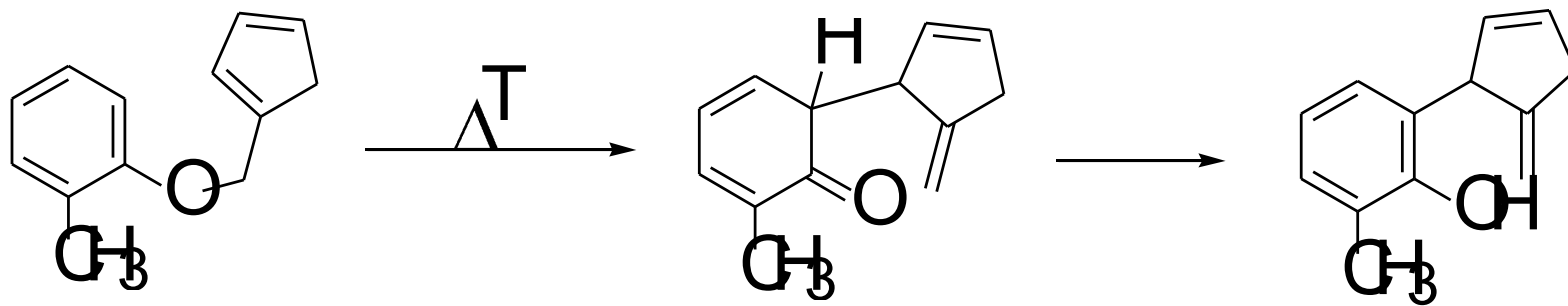
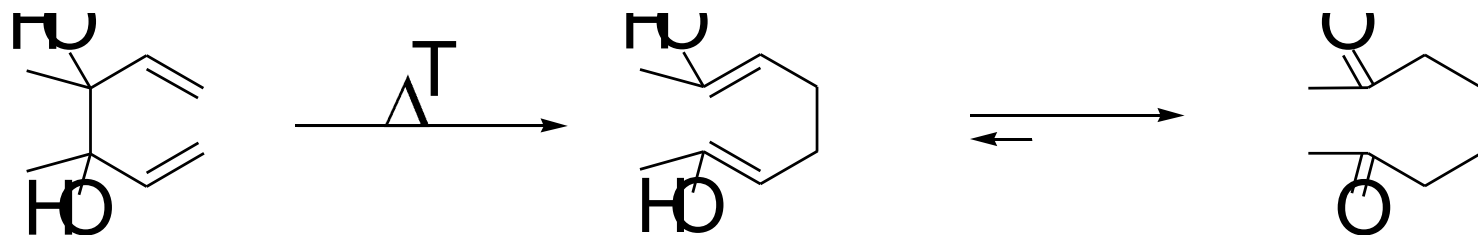


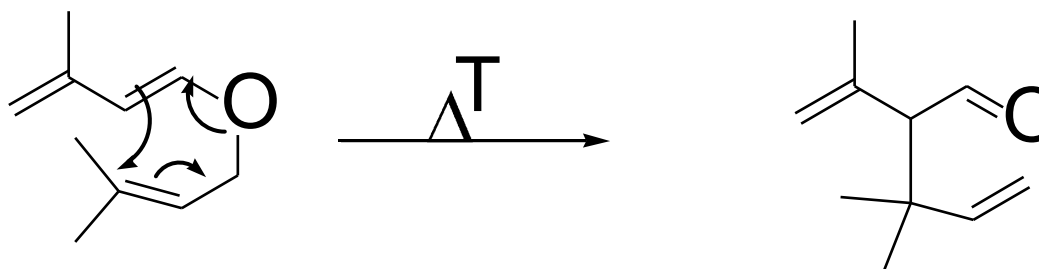
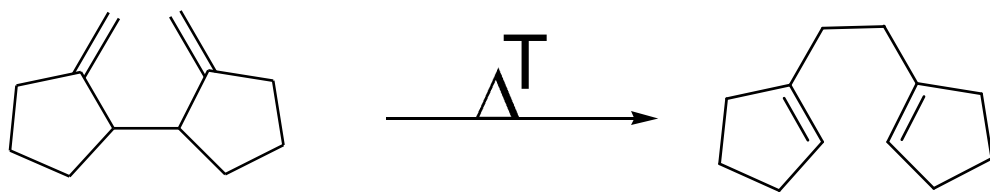
preferance více substituovaného alkenu



Claisenův přesmyk







Doplňte produkty reakcí

