

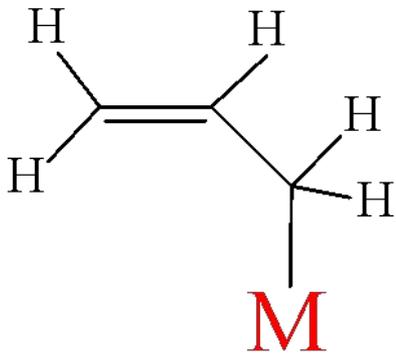
Теоретические основы органической ХИМИИ

Комплексы с 3-х, 4-х электронными лигандами

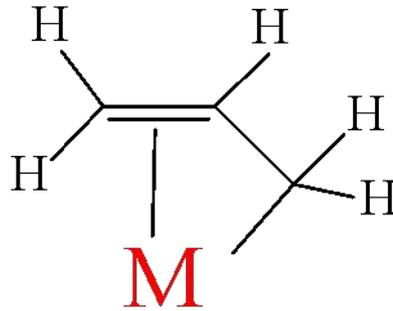
Лекция 17
(электронно-лекционный курс)

Проф. Бородкин Г.И.

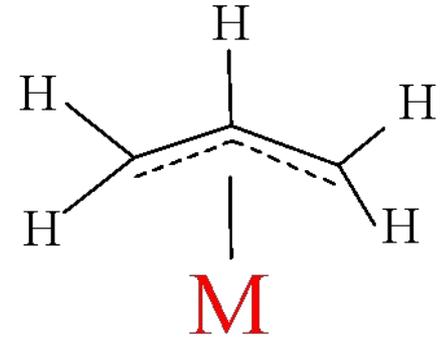
Комплексы с 3-х электронными лигандами



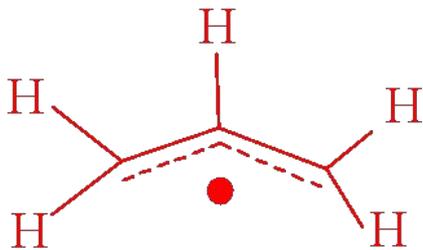
σ -комплекс



асимметричный
 π -комплекс

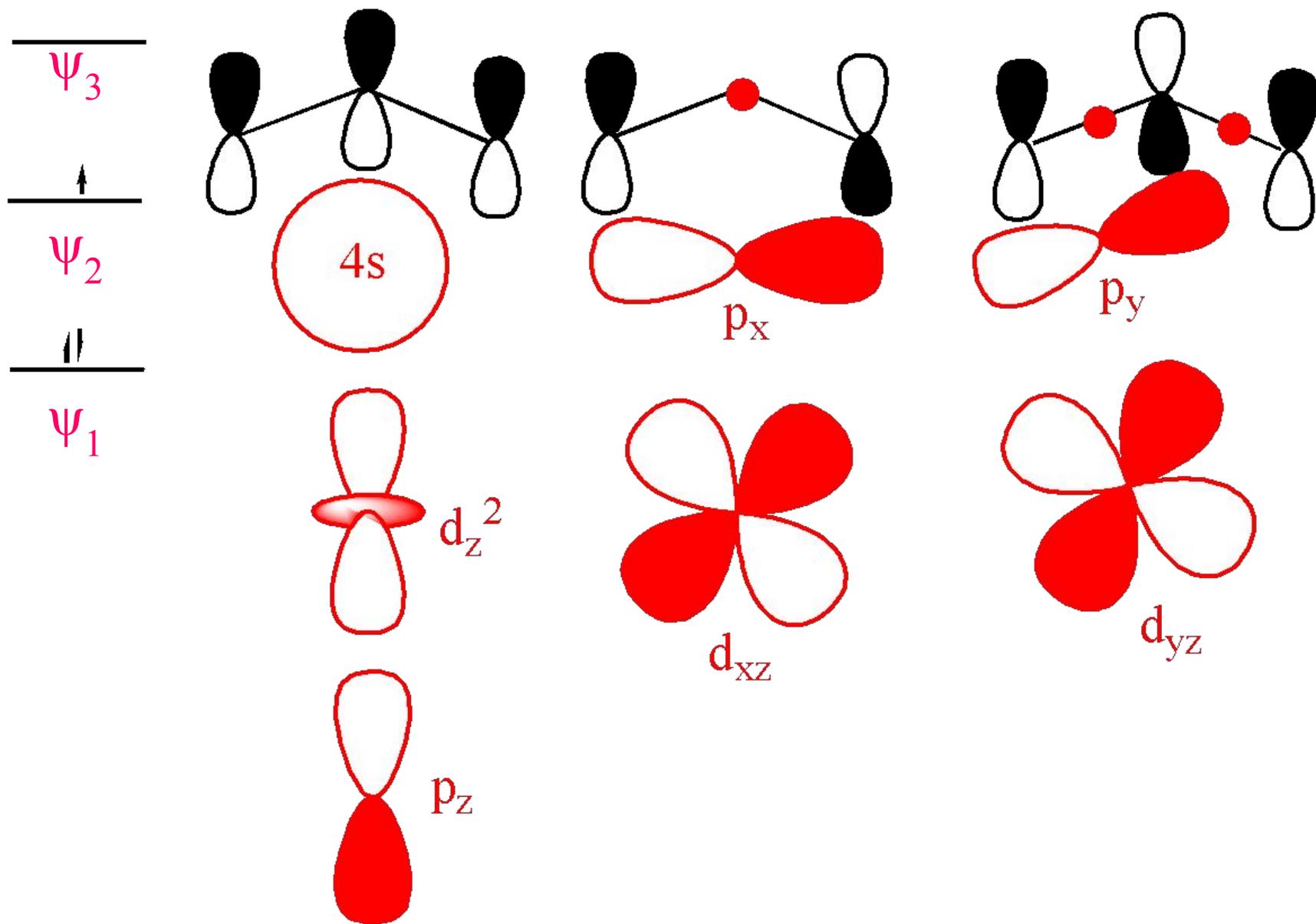


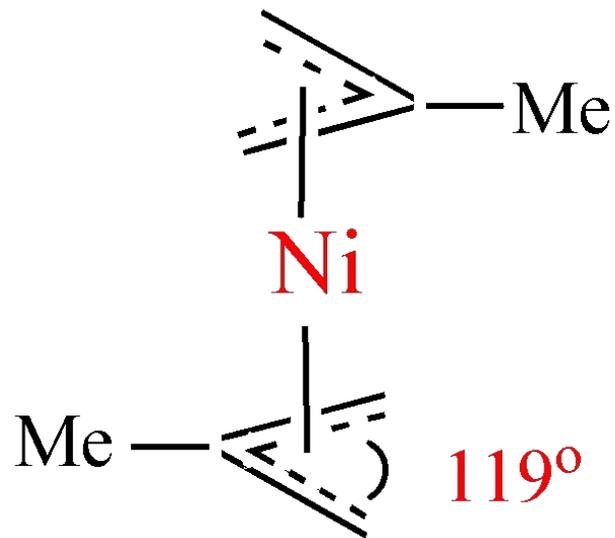
симметричный
 π -комплекс



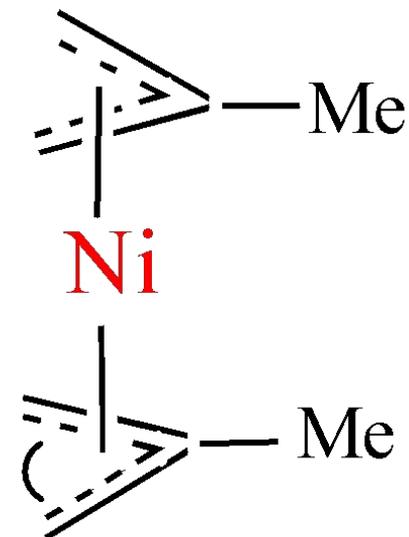
неустойчив

Катализаторы полимеризации
и др.

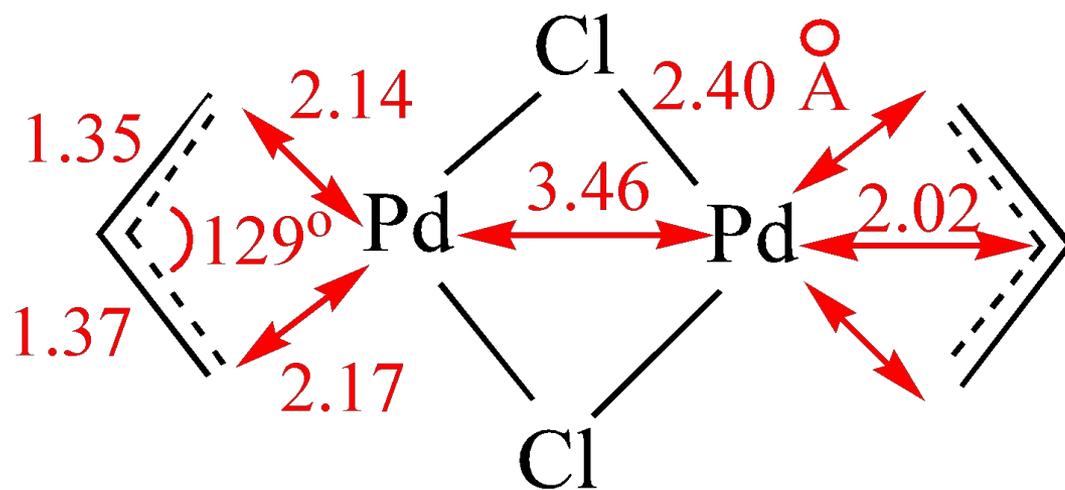


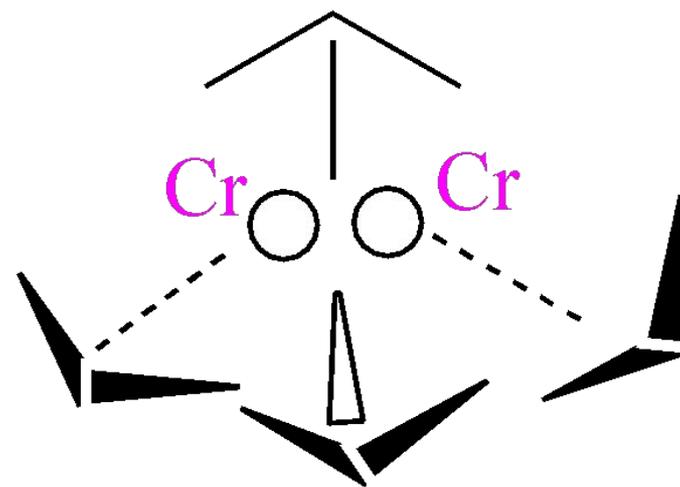
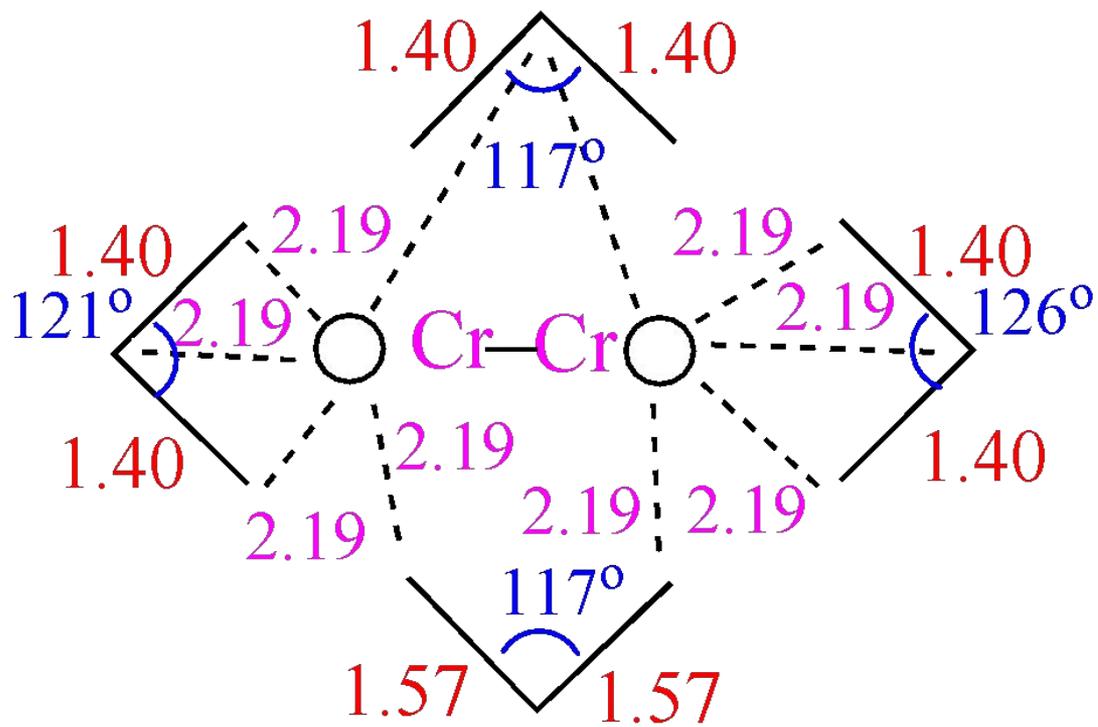


Транс-

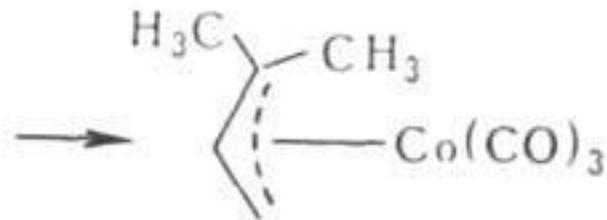
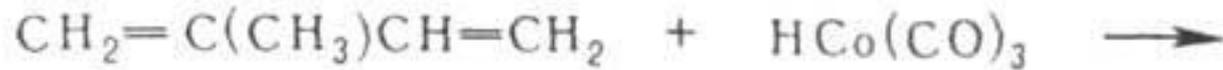
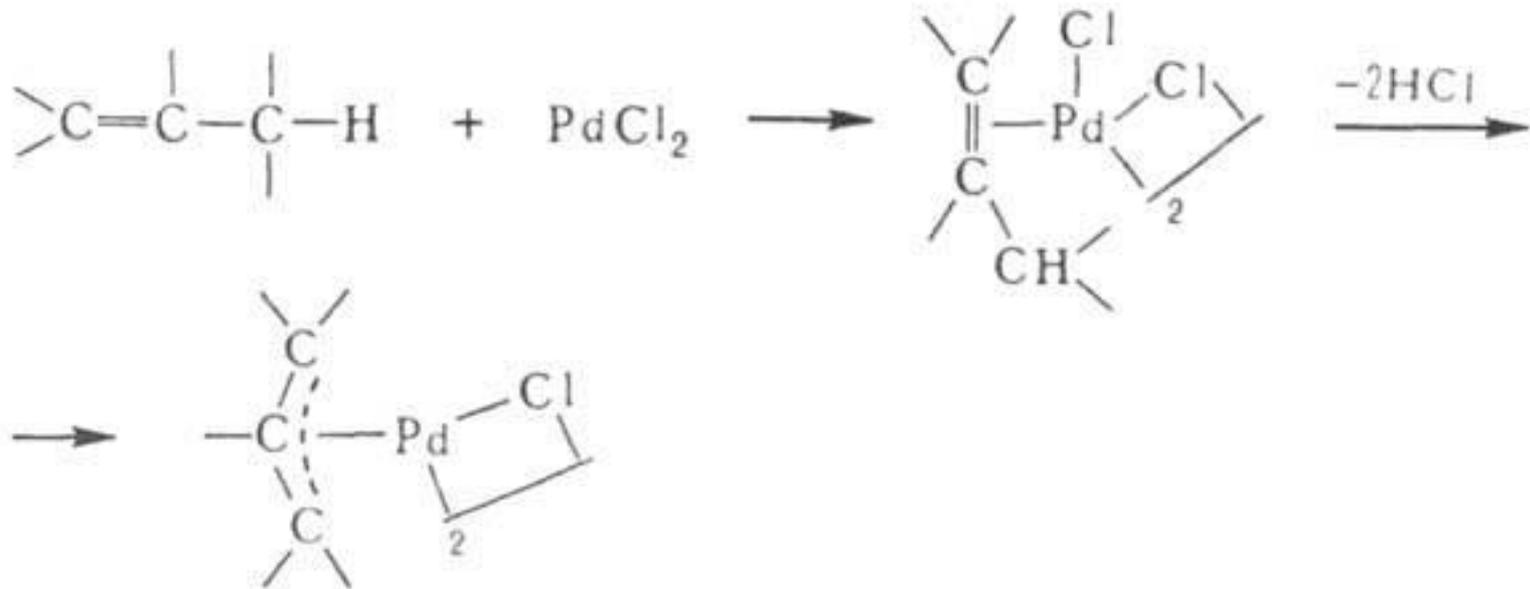


Цис-

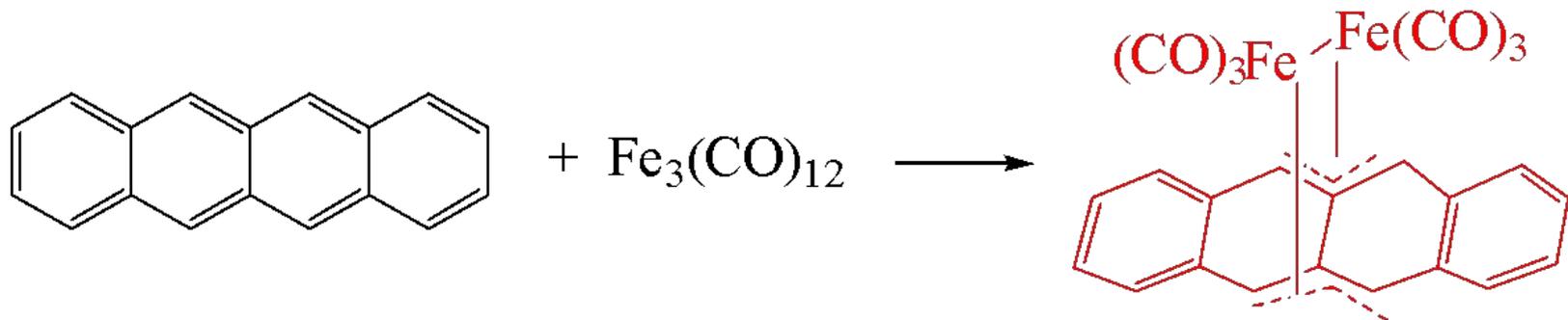
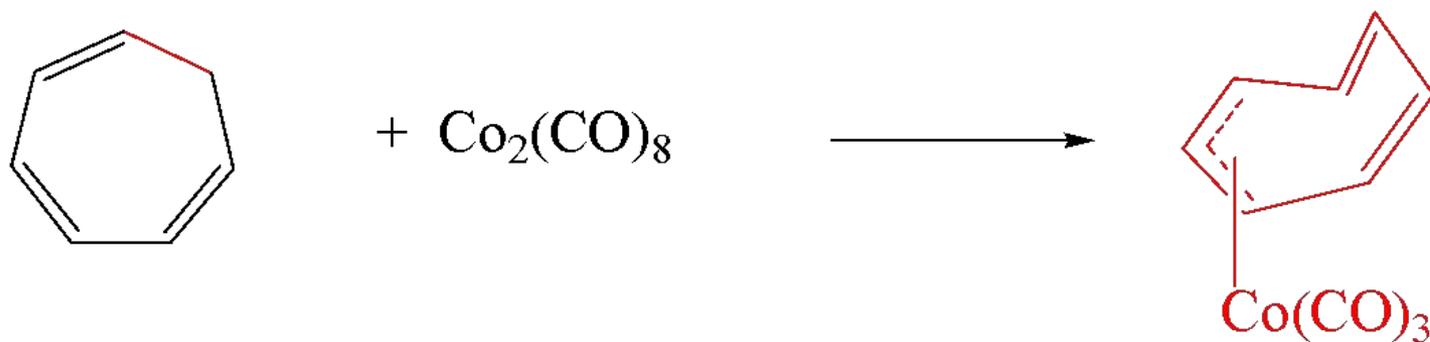
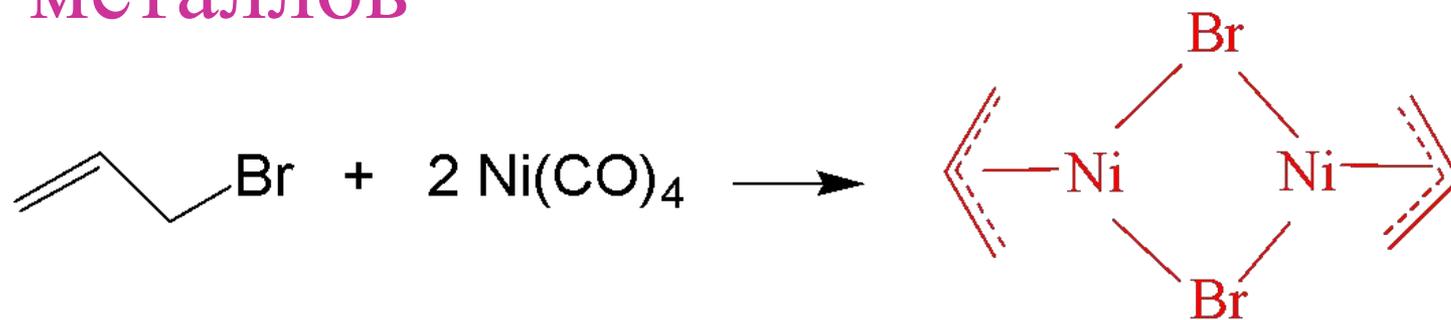




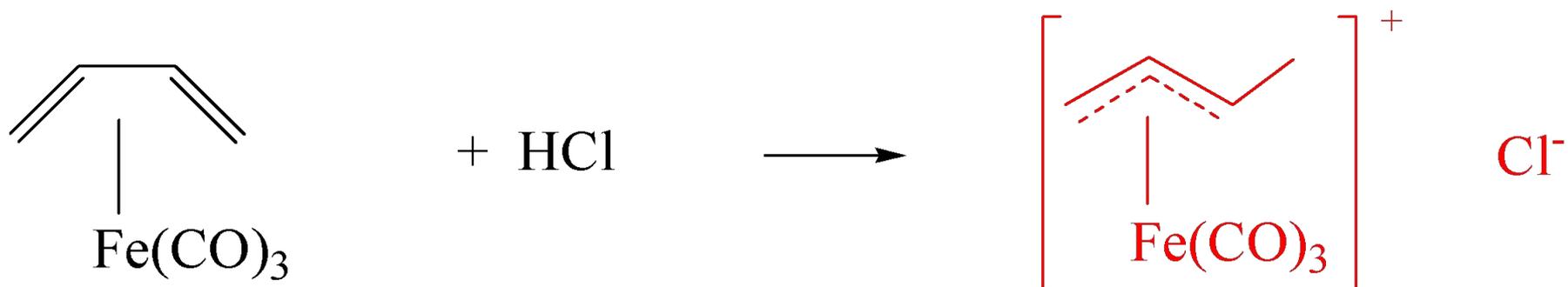
Взаимод. моно- или диолефинов с солями, карбонилами металлов



Синтез с использованием карбониллов металлов

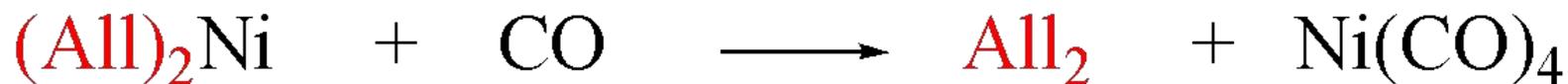
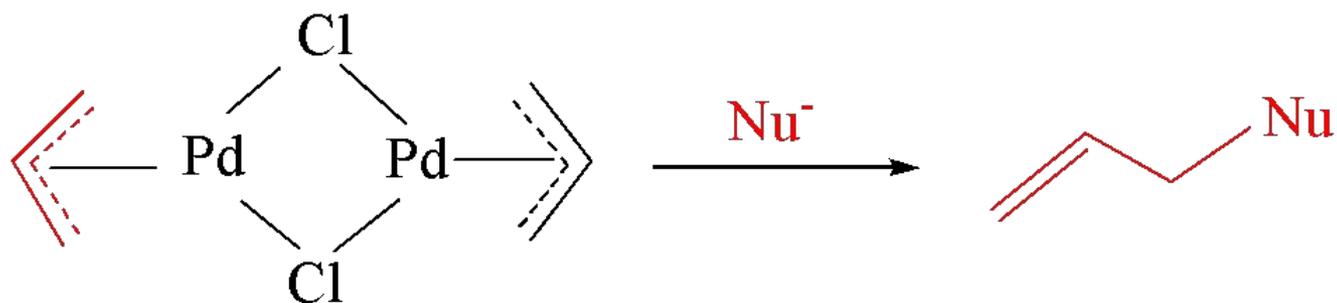


Протонирование диеновых комплексов

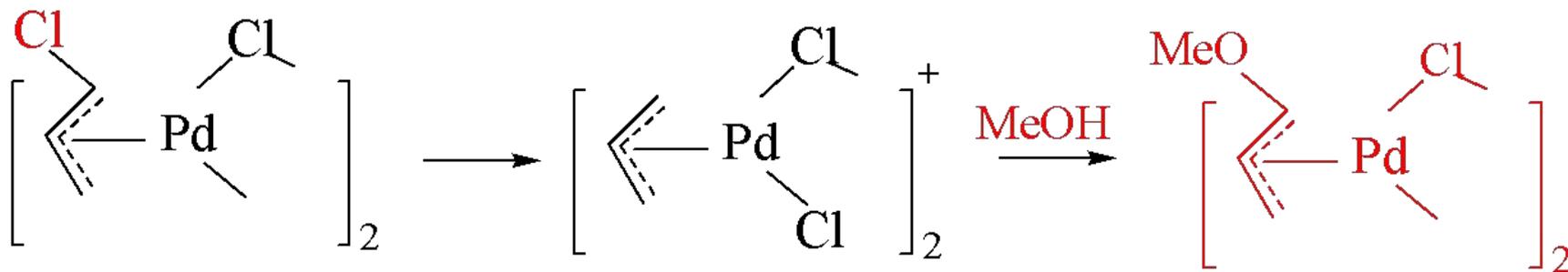


Свойства

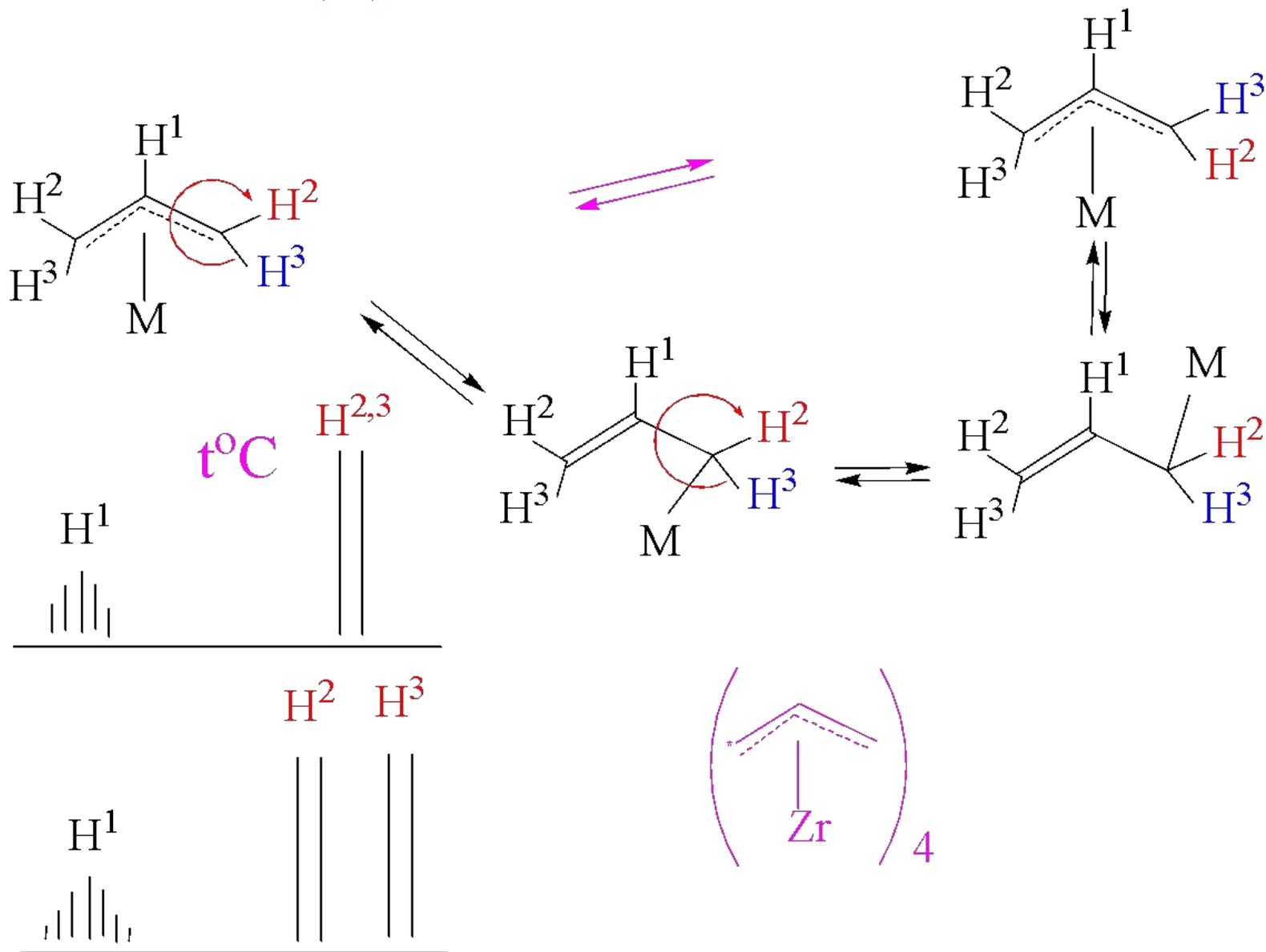
1. Нуклеофильные реакции



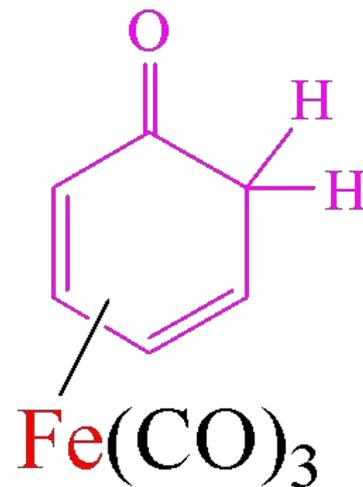
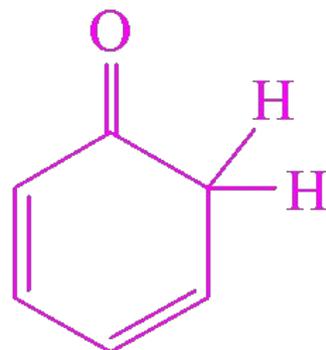
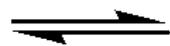
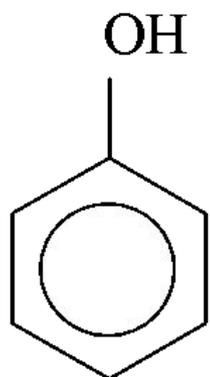
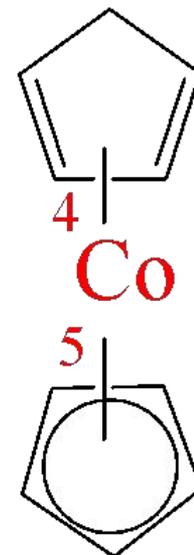
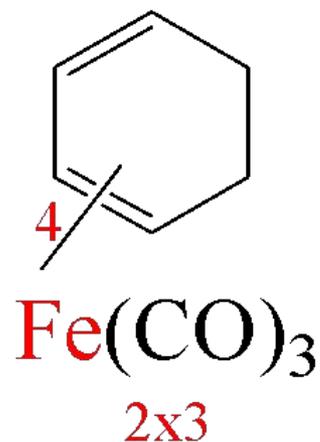
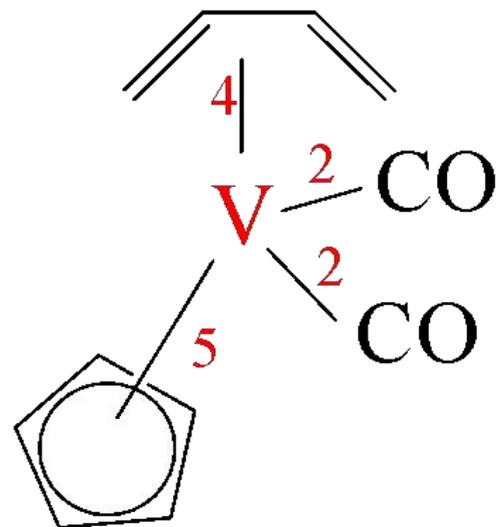
2. Сольволиз



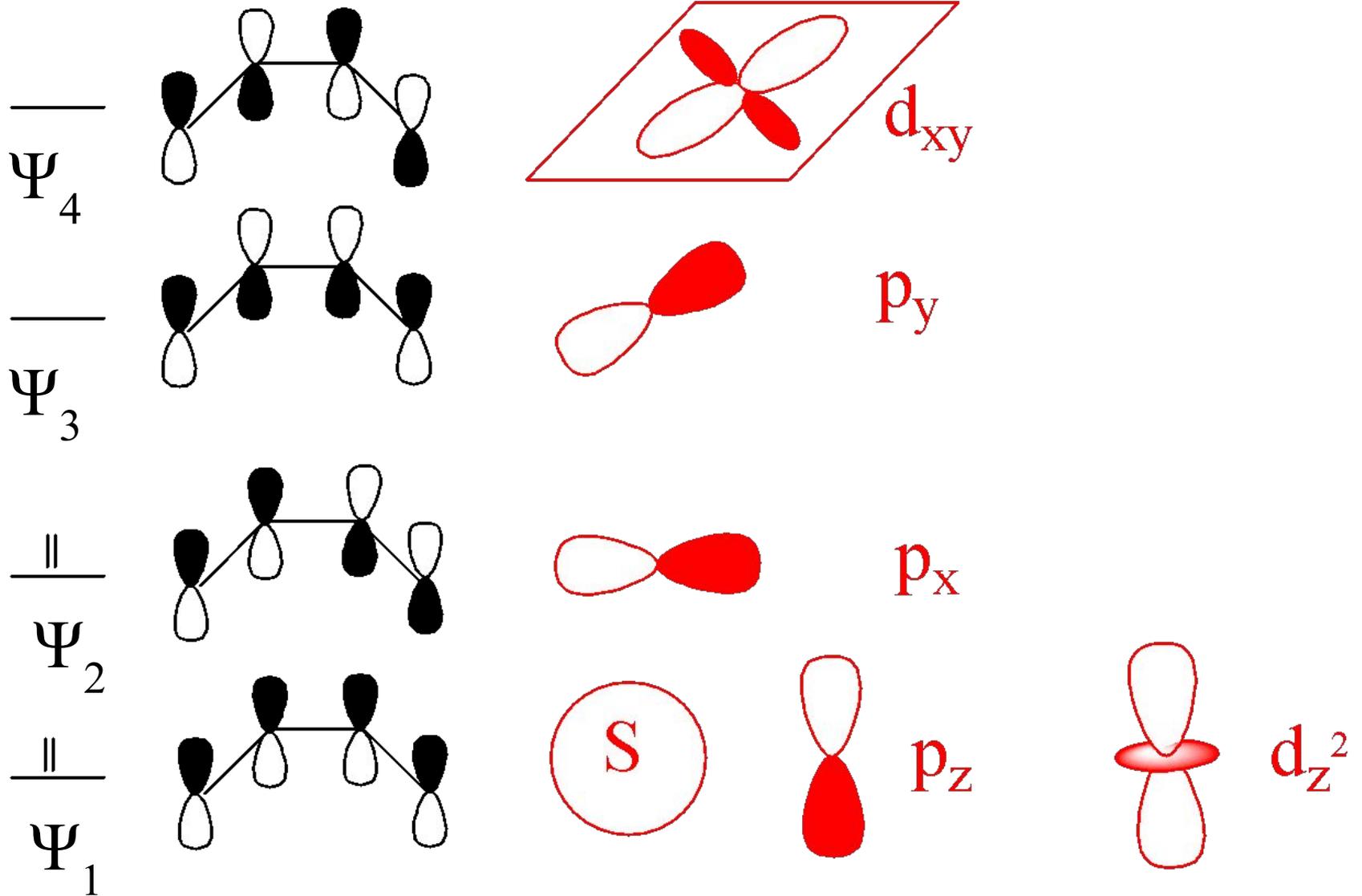
«Динамический аллил»

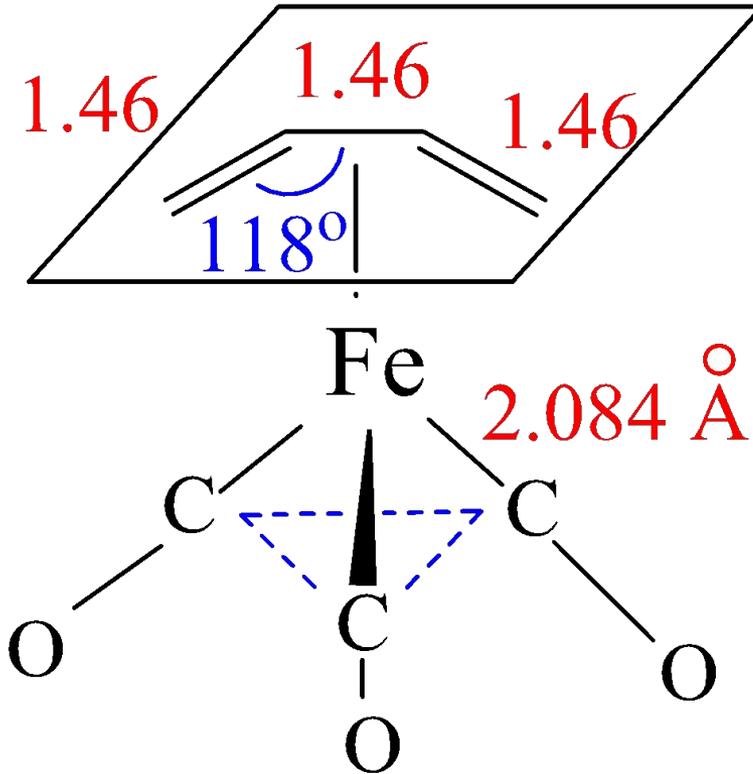


Комплексы с 4-х электронными лигандами



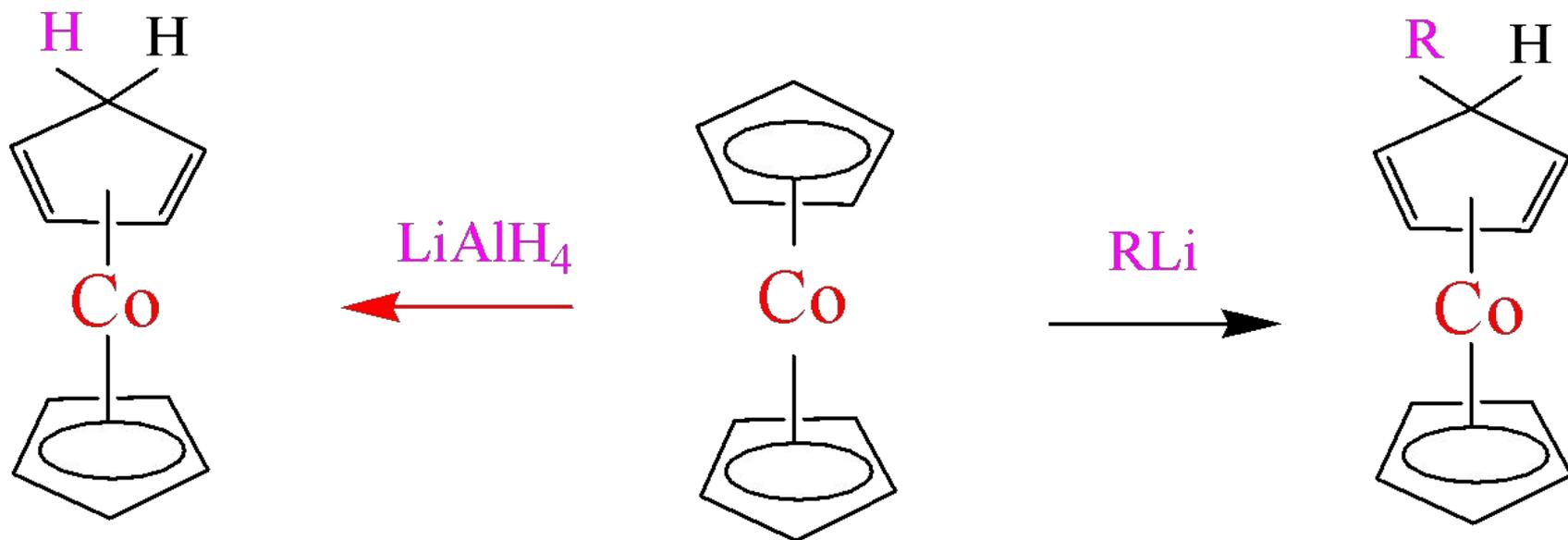
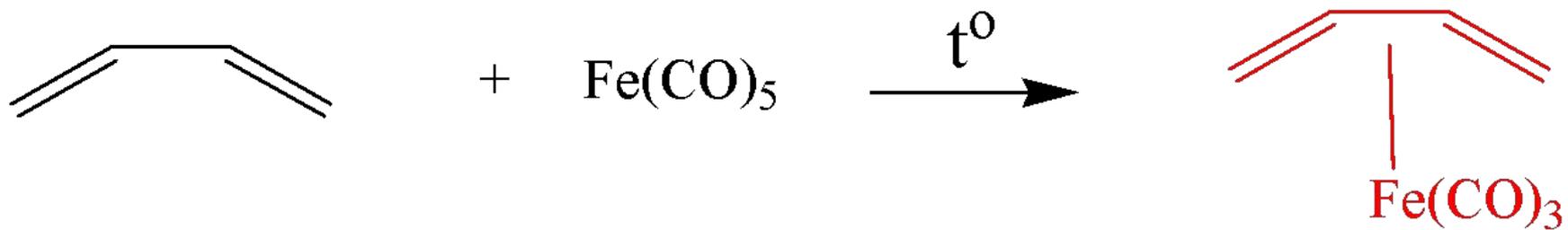
Природа связи





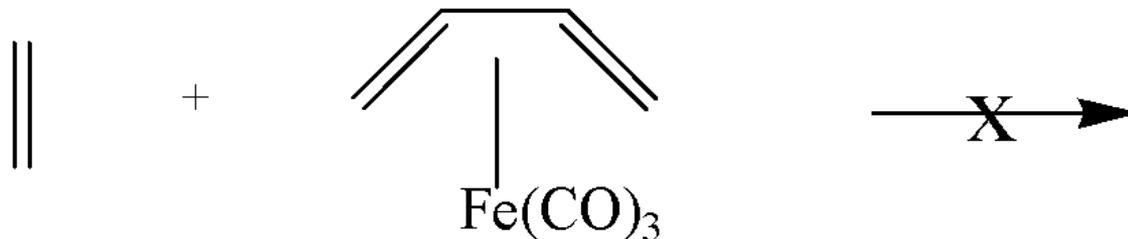
пирамида

Синтез

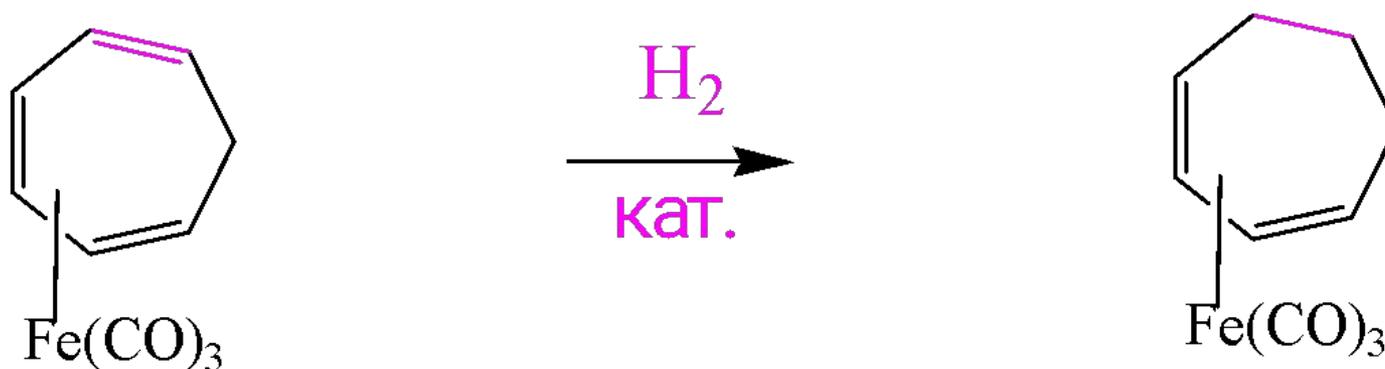


Свойства

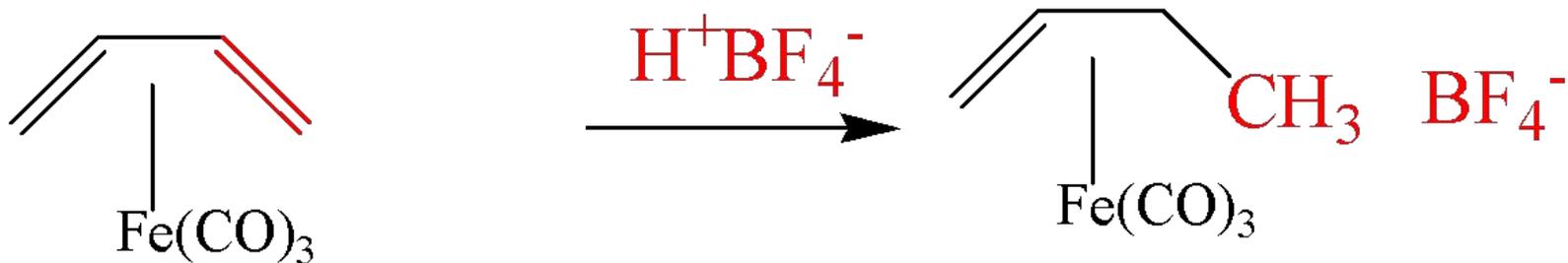
1. Дильса-Альдера



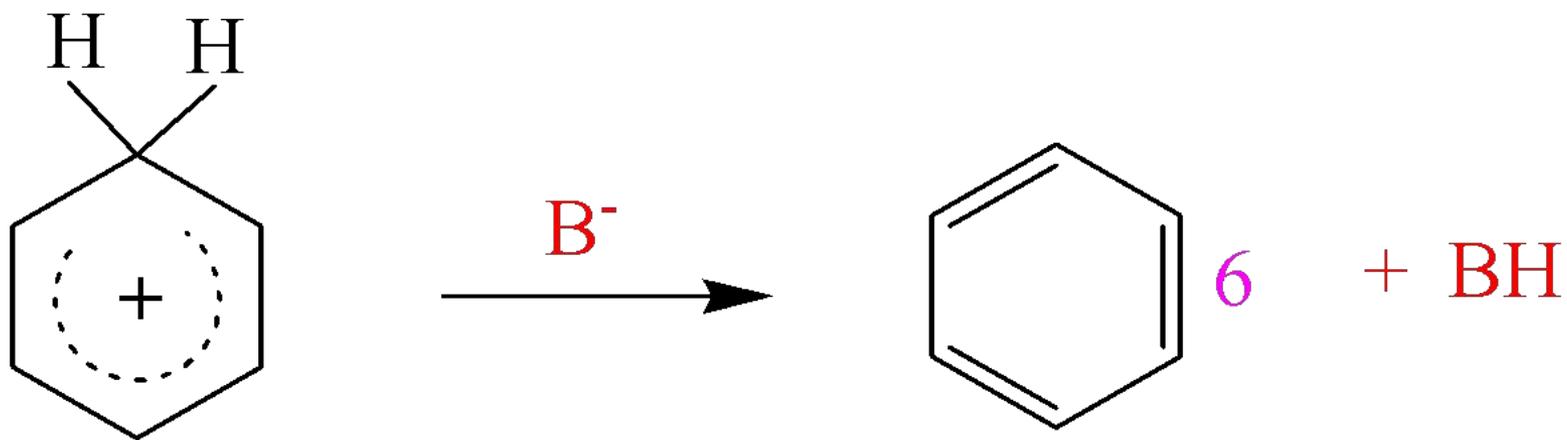
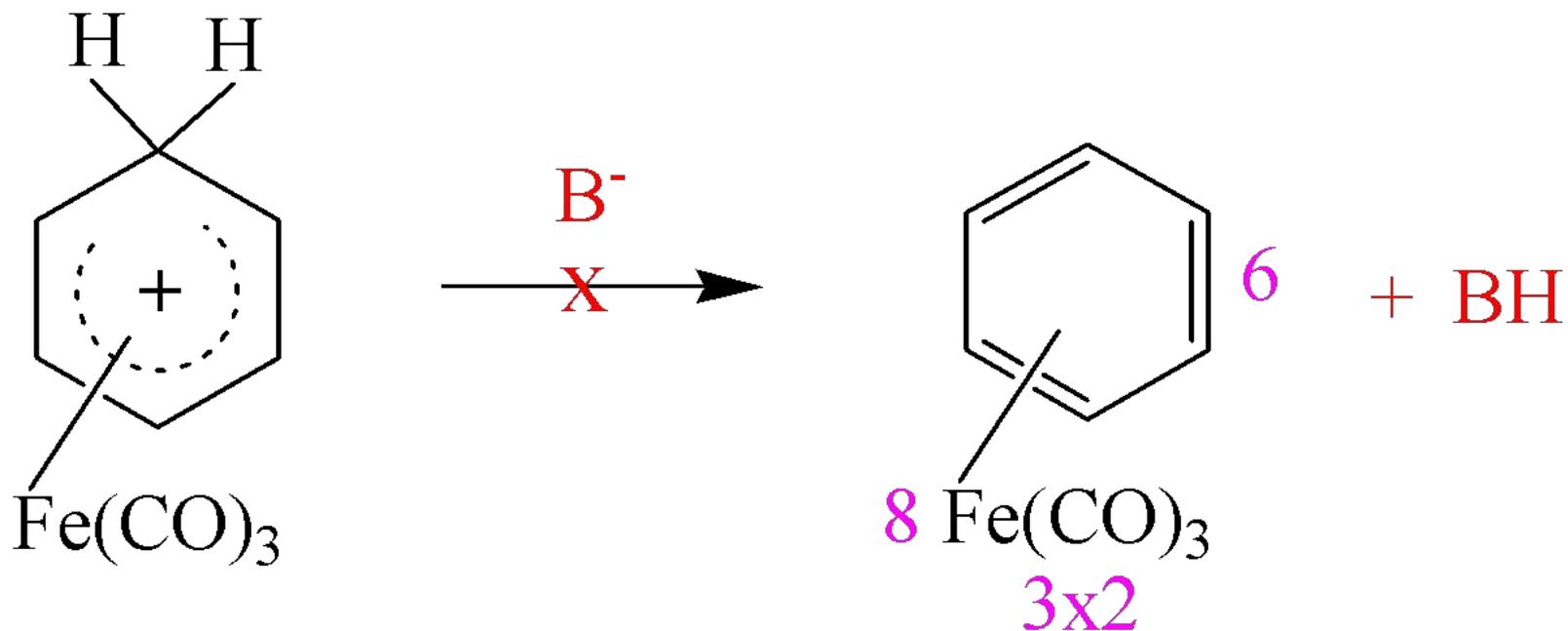
2. Гидрирование



3. Протонирование

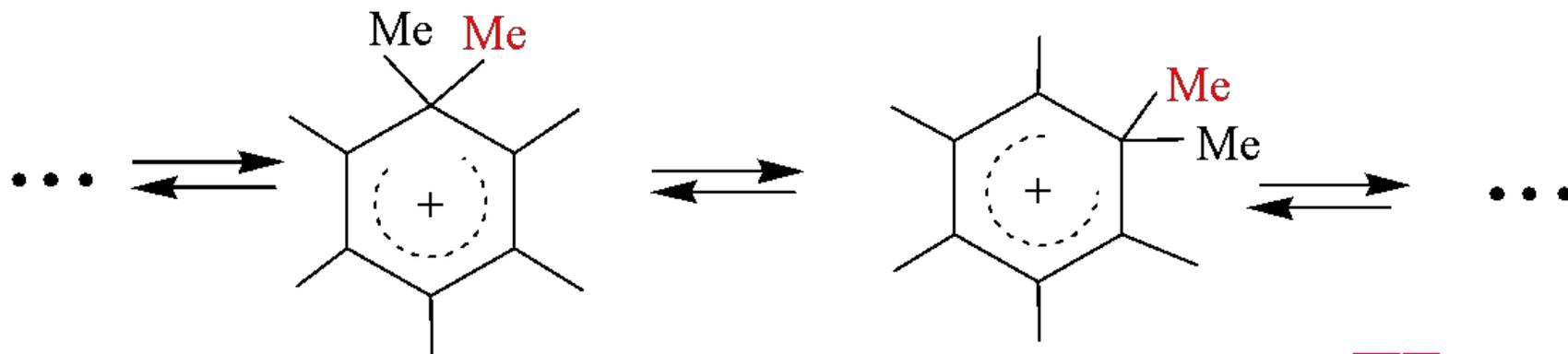
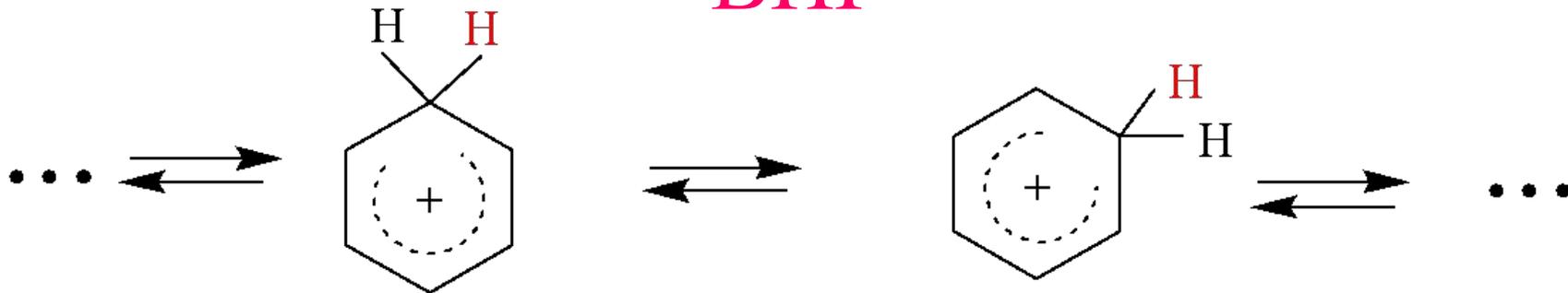


Понижена кислотность



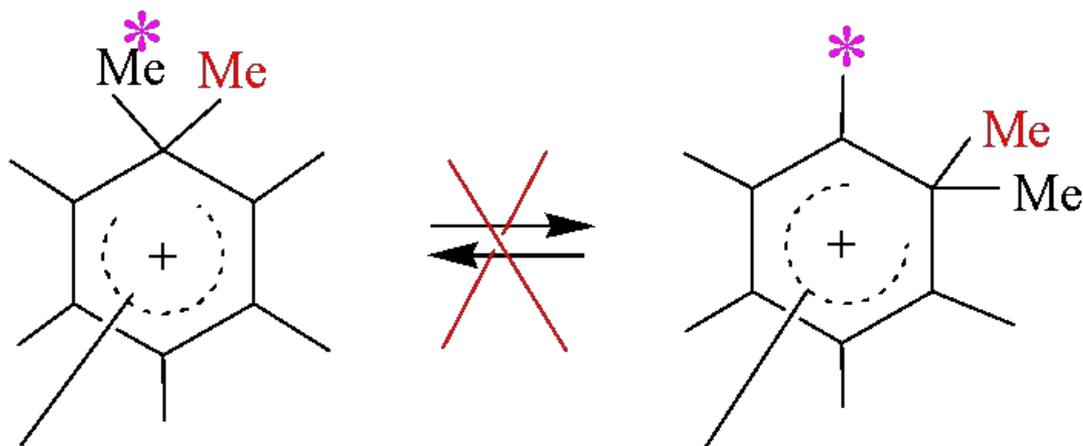
$\text{HSO}_3\text{F}, \text{H}_0 -13.6$

ВПГ



нет ПГ

130 ч., 85°C

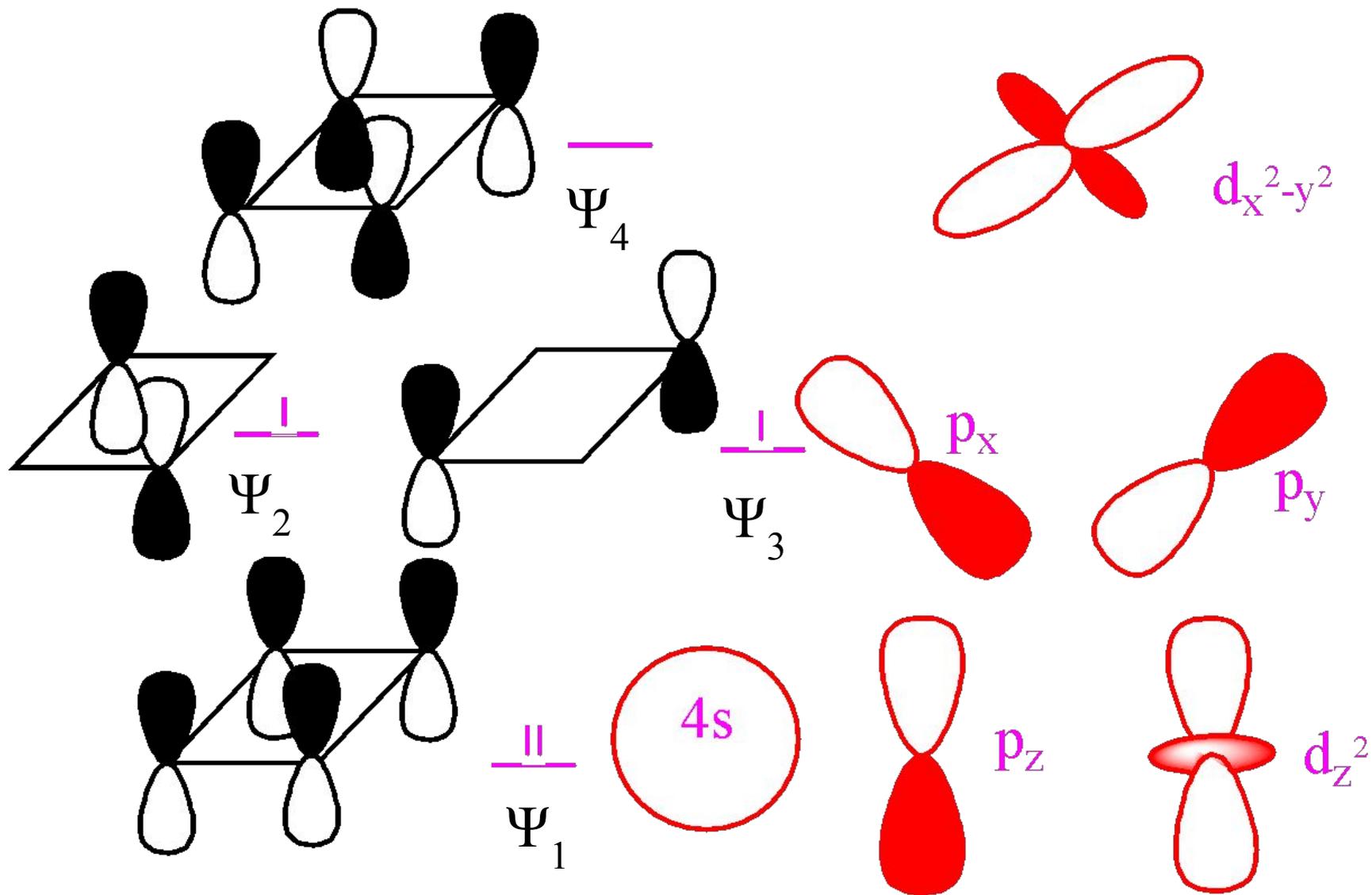


Fe(CO)₃

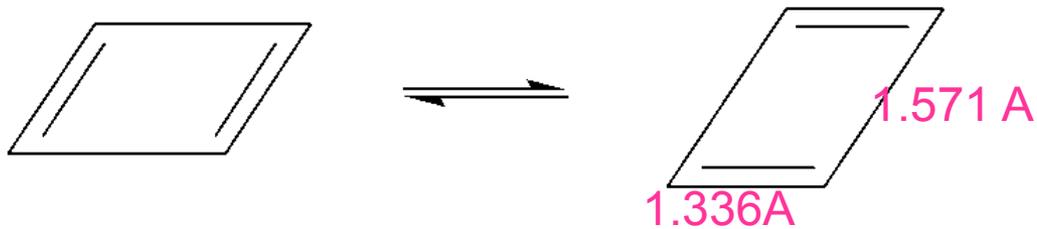
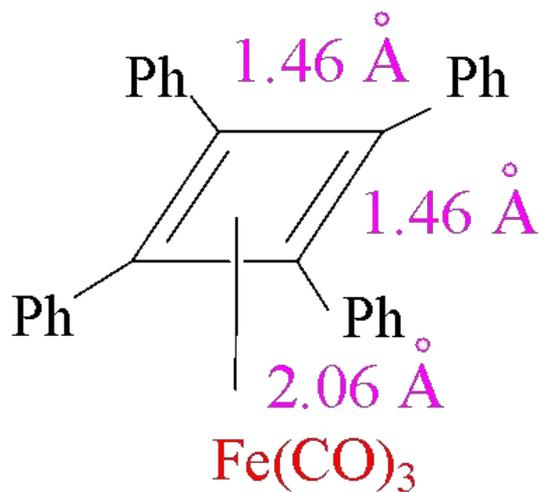
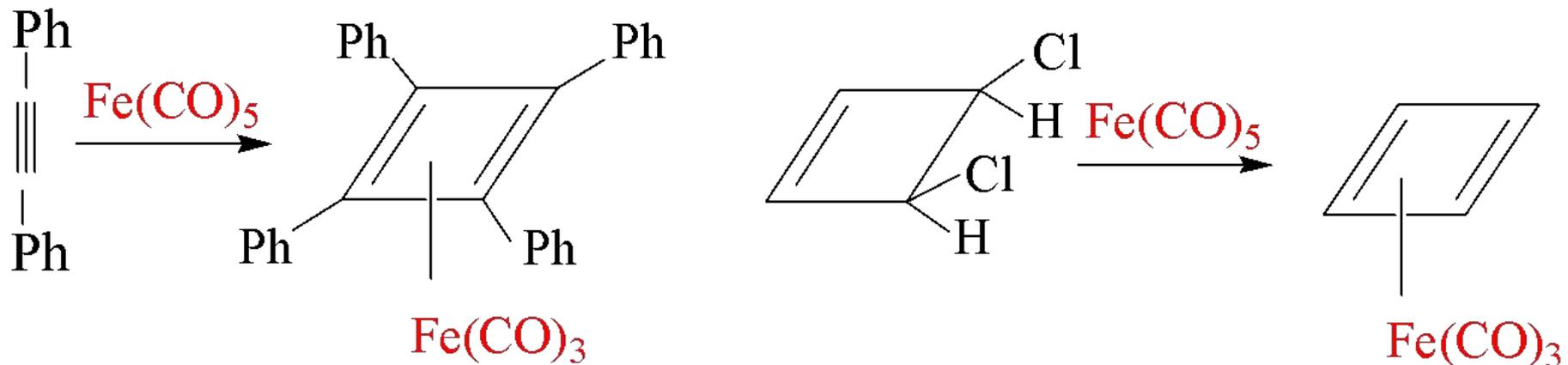
Fe(CO)₃

к 10³ с⁻¹ для
свободного L

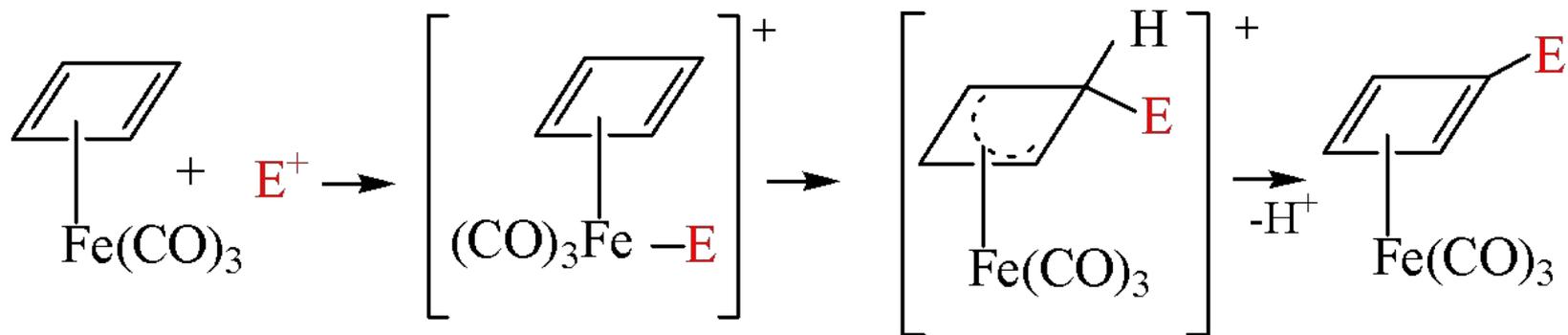
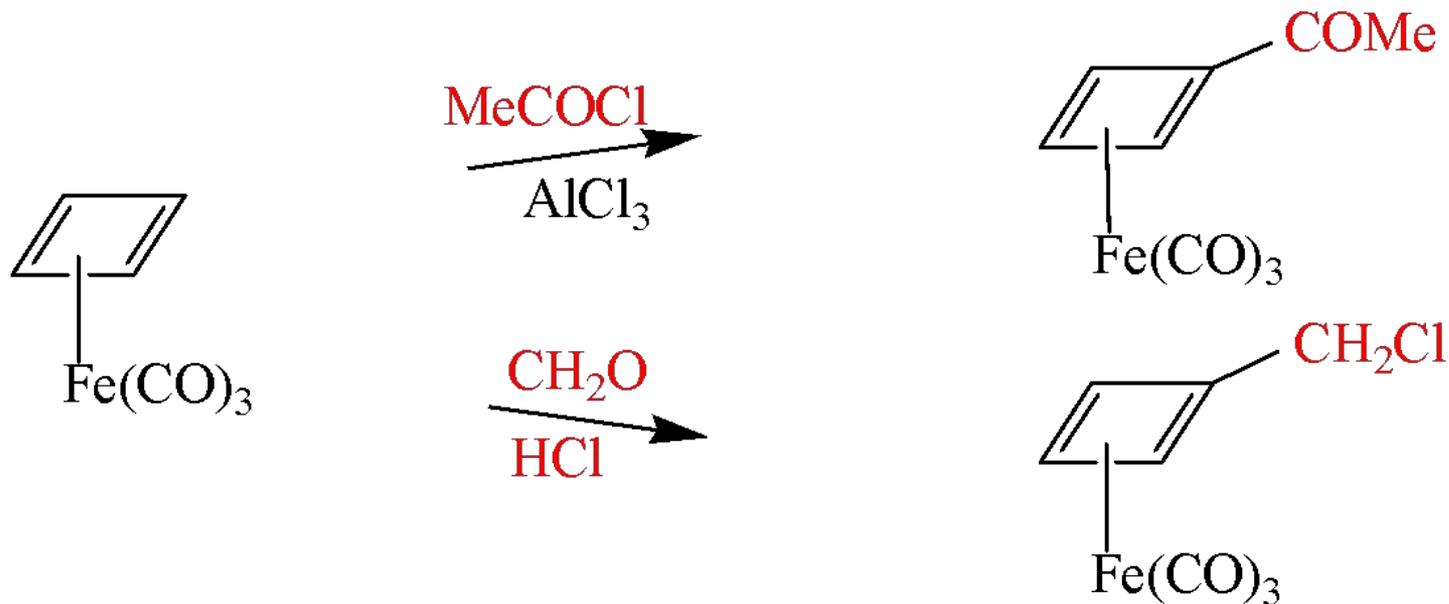
Циклобутадиен



Синтез



Электрофильное замещение



Источник циклобутадиена

