

Course 343Lecturer Hackenberger - GrelmanDay WedDate 10/02Notes Taken By AdamsTotal # of Pages 6

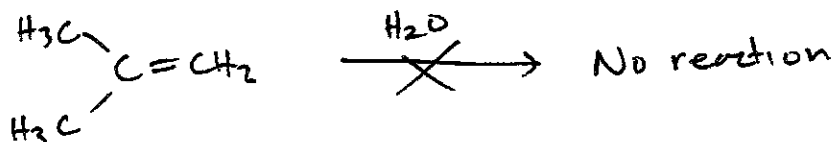
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• Exam Monday - through Ch. 4

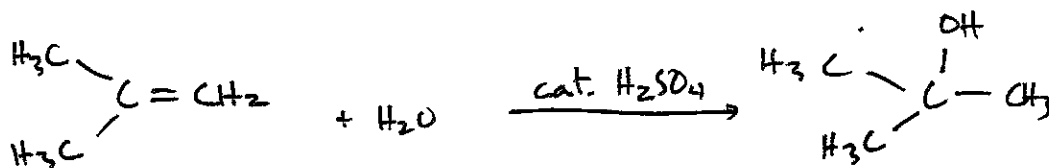
• Exam locations:

	<u>Room</u>	<u>Students</u>
	Humanities 2650	Abbott-Krueger
	Regular # lecture hall	Krupa-Zuleger

• Recall: catalysis



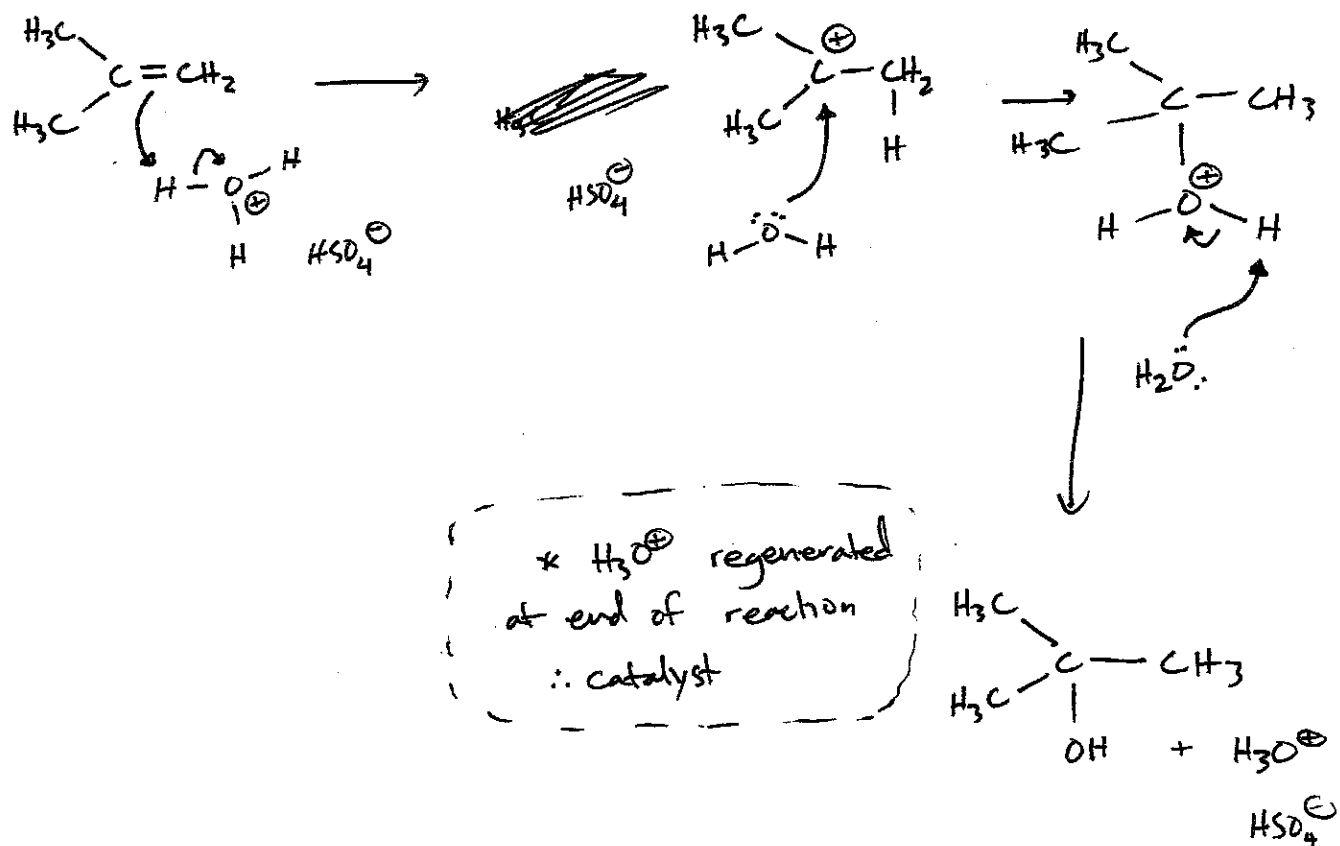
- No reaction unless acid catalyst is present



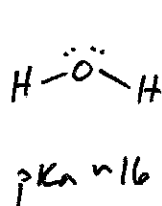
• Mechanistic hypothesis:



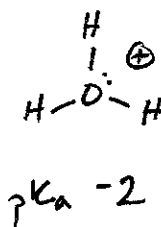
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Origin of catalysis - difference in ~~pKa~~ proton-donating ability



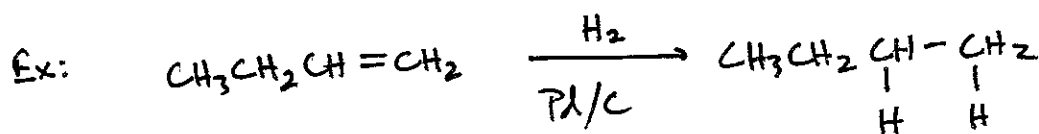
vs.



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- All steps in this mechanism are reversible  
 (complementary reaction - "dehydration of alcohols" - Ch 8)
- LeChatelier's principle ("Mass action") - influence outcome of reversible process  
 $\implies$  excess  $H_2O$

- Another example of catalysis  $\rightarrow$  hydrogenation

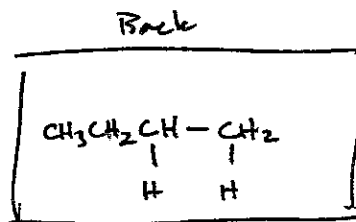
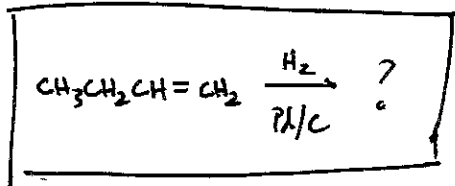


- Rxn occurs at macroscopic Pd metal surface (heterogeneous catalysis) - key steps do not occur in solution.

- Contrast to "homogenous catalysis", where all reaction species are in solution (e.g. acid-catalyzed alkene hydration)

- Learning reactions - "active"

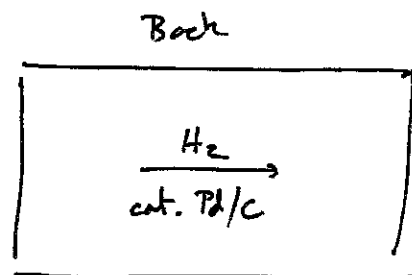
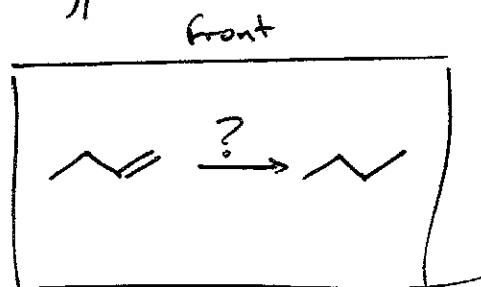
$\implies$  flash cards: 2 types for each rxn



1st type

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- 2<sup>nd</sup> type:



### Ch 5 - Addition Reactions of Alkenes

Rec problems: 1-22, 27-38, 40, 45-52

• Two common themes in consideration of organic reactivity

1) Fundamentals: mechanism

2) Synthesis: putting together sequences of reactions to generate complex molecules from S.M.

• Key themes in this chapter's reactions:

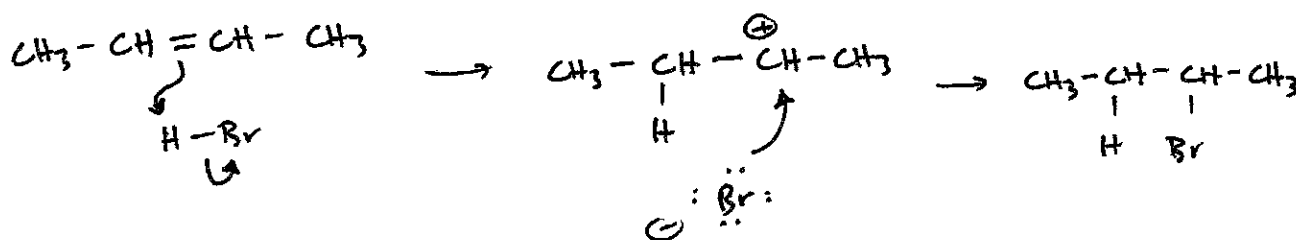
- Alkene/ $\pi$ -bond acts as nucleophile

- Products: formerly  $sp^2$  C's become  $sp^3$  hybridized

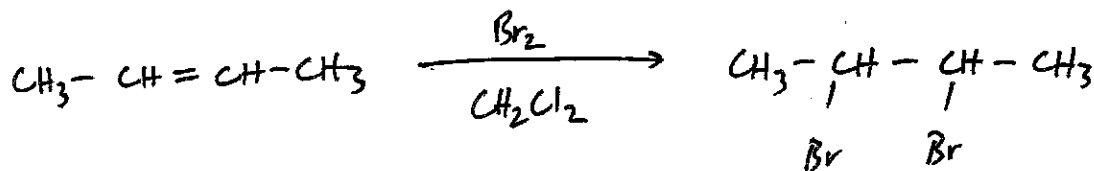
- Reagents used: electrophiles

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Recall: HX addition to alkenes

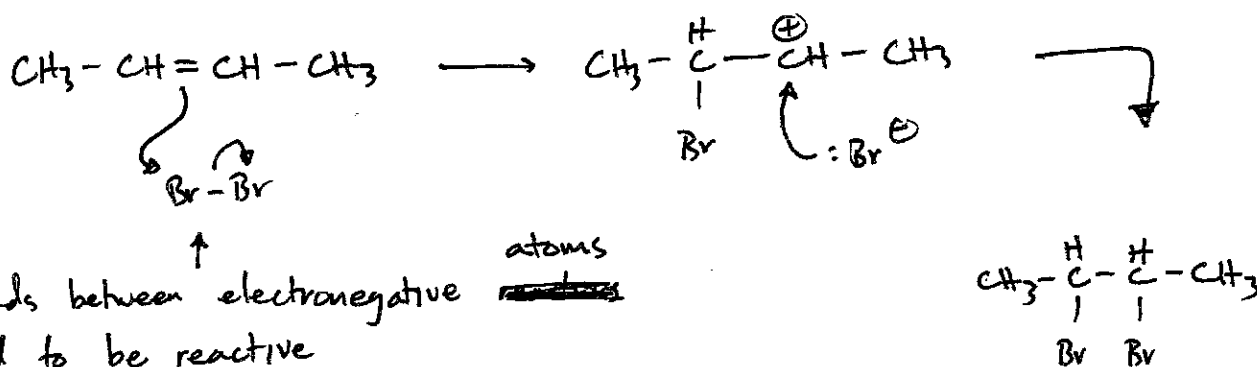


New rxn: Addition of Br<sub>2</sub>



Mechanism?

Hypothesis #1 - incorrect!



Note: bonds between electronegative ~~atoms~~ tend to be reactive

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Hypothesis #2 - correct

