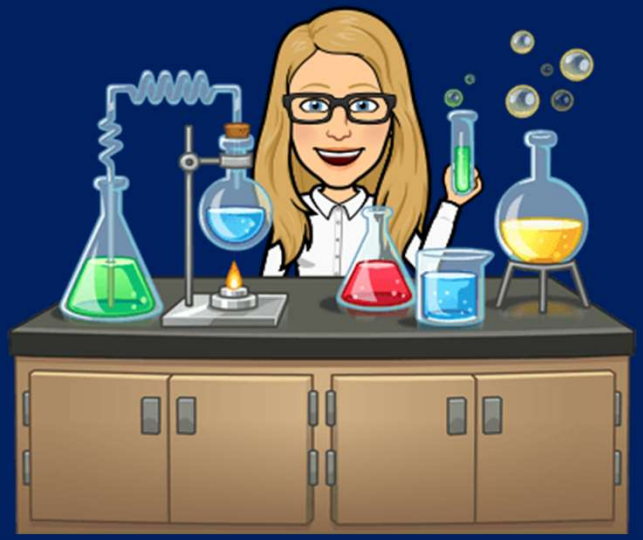
For clicker question voting, go to:
https://pollev.com/lauriestarke263



Dr. Laurie S. Starkey
Cal Poly Pomona

CHM 3150 Organic Chemistry II
Announcements 11/18/25

Today's Topic: Diazonium Salts & Synthesis (Chapters 22 & 18)

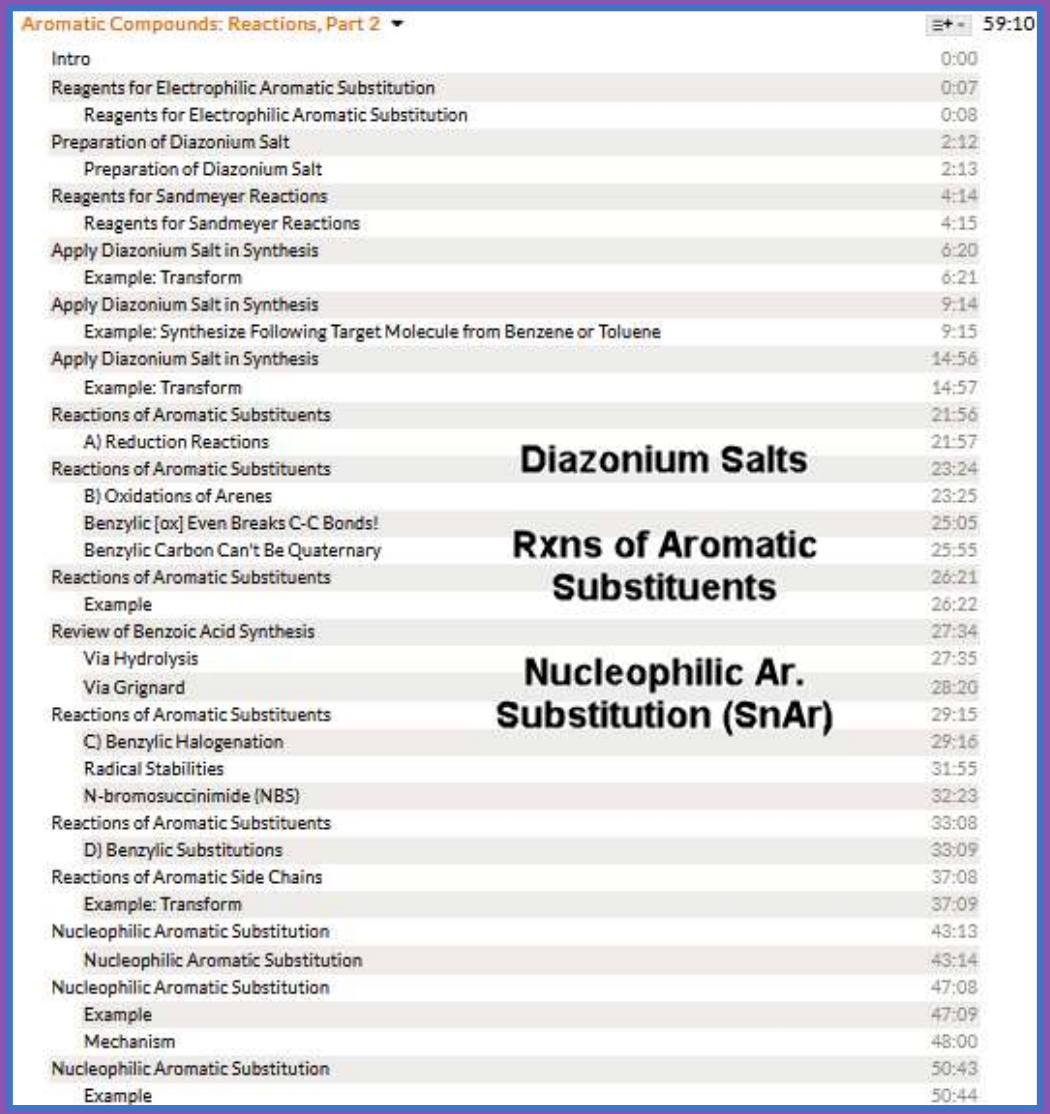
Daily To-Do	Flipped Lectures
Step 4	
• Read Klein-Starkey Sections: ◦ 18.12 **Aromatic Synthesis** ◦ 22.10, 22.11 **Diazonium Salts** (textbook problems 22.26, 22.66) ◦ 17.6 **Reactions at the Benzylic Position** ◦ 18.13, 18.15 **Nucleophilic Aromatic Substitution** (textbook problems 18.30-18.32)	Aromatic Reactions - Part 3 **53 minutes** *skeleton notes pages 18-11 through 18-16*
• Work through **SkillBuilders:** ◦ **18.5 Synthesis of Disubstituted Rings** ◦ **18.6 Synthesis of Polysubstituted Rings** ◦ **18.4 Blocking Groups** ◦ **17.4 Reactions of Benzylic Position** ◦ **18.7 Determining Mech. of Ar Reaction** • & Textbook problems 18.24,18.25	
• *FYI (not on exam) Klein 21.6 Stork Enamine Synthesis, SkillBuilder 21.7*	

LOTS of sections to skim through!

LOTS of SkillBuilders for practice!

Ch. 17/18 (Step 4)

- ✓ **Watch**
- ✓ **Read**
- ✓ **Practice**



Flipped lecture: **Ch. 18/22 Aromatic Rxns** (Part 3 of 3)

Handout: Electrophiles for EAS

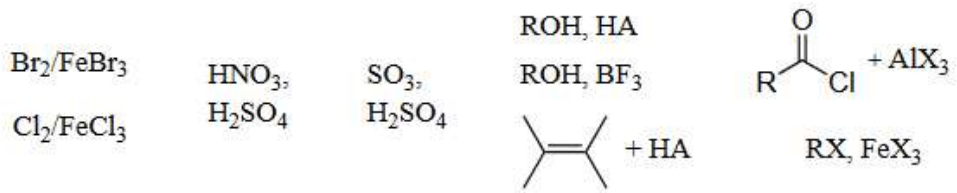
Klein	EAS Reaction	Conditions	Electrophile (E^+)	Mech. to make E^+ (first steps in EAS)
18.2	**halogenation** –X	$Br_2/FeBr_3$ $Cl_2/FeCl_3$	$Br-Br-FeBr_3 \approx Br^+$ $Cl-Cl-FeCl_3 \approx Cl^+$	great LG: $Br-Fe-Br\cdots Br$
18.4	**nitration** $-NO_2$	HNO_3, H_2SO_4	$O=N=O$ (nitronium ion)	great LG; *loss of water LG to make NO_2^+*
18.3	**sulfonation*** $-SO_3H$	SO_3, H_2SO_4		N/A (SO_3 is Electrophile); **reaction is reversible (heat removes $-SO_3H$ group)*
18.5	**Friedel-Crafts alkylation** –R	ROH/HA *or* ROH/BF_3 *or* RX/FeX_3	R^+	$R-OH_2$; $R-O(H)-BF_3$; $R-X-FeX_3$; *loss of leaving group (LG) to make carbocation*
		or + HA (HF)	(carbocation - may rearrange, if unstable)	*protonate pi bond to make carbocation*
18.6	**Friedel-Crafts acylation**	+ $AlCl_3$ *or* + $AlCl_3$	$R-C\equiv O^+$ (acylium ion)	great LG: $R-C(=O)-Cl-AlCl_3$

Handout: Diazonium Salts/Synthesis

Aromatic Substitution Reactions & Synthesis of Aromatic TM's

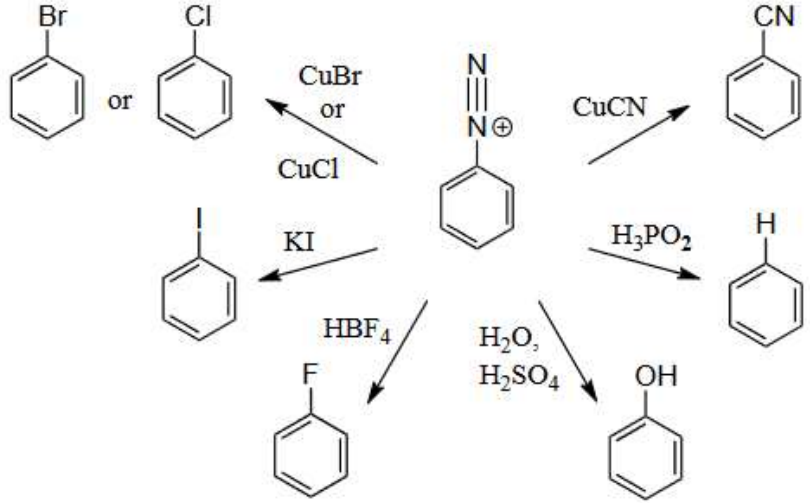
Reagents for Electrophilic Aromatic Substitution:

(Klein Sections 18.1-18.6, generate E^+)



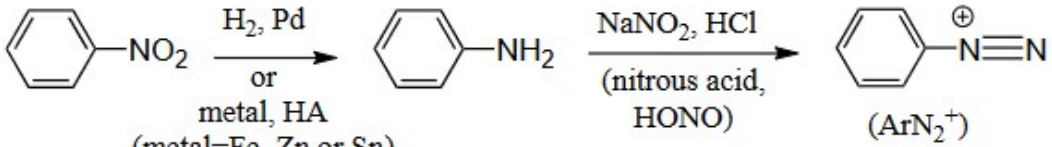
Reagents for Sandmeyer Reactions:

(Klein Section 22.11, react with ArN_2^+)



Reagents will be provided on Cover Page of Exam 3!

Preparation of Diazonium Salt (ArN_2^+):



Exam III Tuesday, 11/25 (Chapters 21 & 17/18)

65-minute written exam

- no Scantron, no lecture after

No notes, calculators, model kits allowed

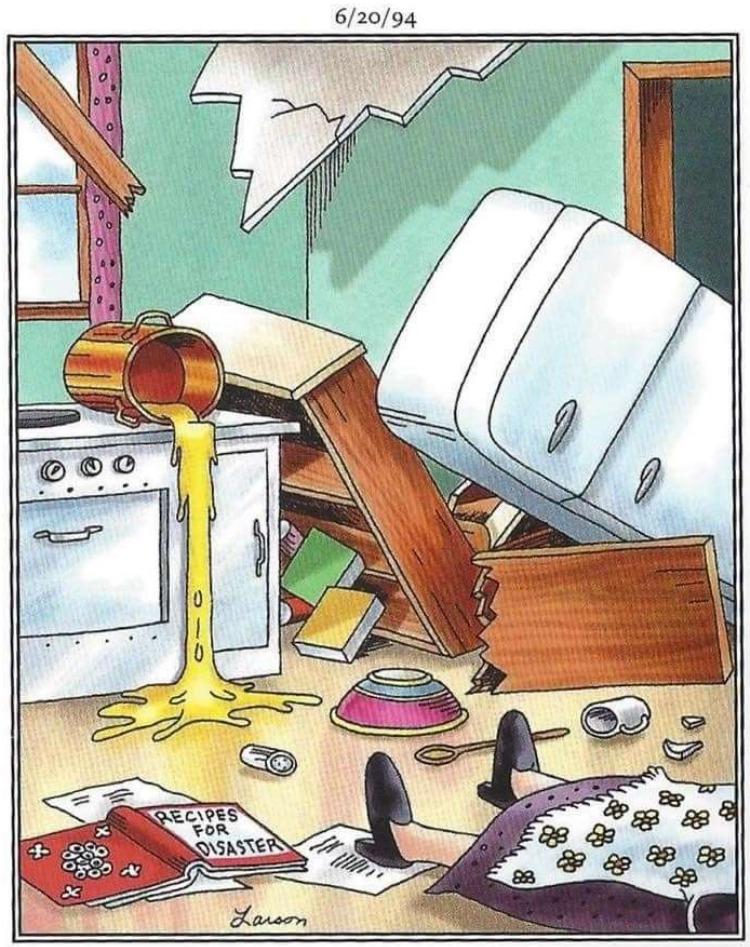
- Bring pencil(s), eraser

Sample exams on course homepage

- See typical length, format

Extra office hour/ review session
(Zoom, recorded)
Sun. 11/23, time TBD

Synthesis requires careful planning!



California State Polytechnic University, Pomona

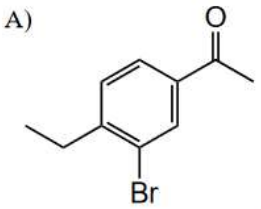
Organic Chemistry CHM 316, Dr. Laurie S. Starkey

Aromatic Synthesis Practice Problems

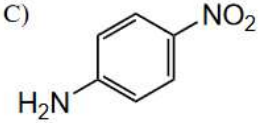
A-D) Synthesize from benzene.

Synthesis Worksheet (& Answer Key) on Course Homepage

A)



C)



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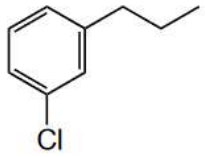
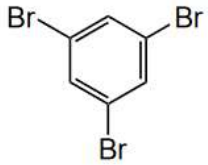
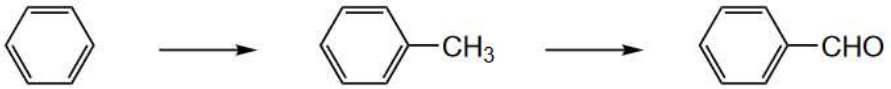


D)



E)



"Recipes for Disaster" - The Far Side, Gary Larson

Celebrating a former student as she continues her journey…congrats to Christina!