

ADVANCED INORGANIC LABORATORY CHEMISTRY 341

Instructors: Dr. Herlinger (AWH) Dr. Holz (RCH)
Office: FH-418 FH-125
Phone: 508-3127 508-7045
Hours: WF 11:30-12:30 WF 11:30-12:30

Lab Assistants: Mr. Zachary Osner Mr. Dan Kissel
Office: FH-214 FH-417
Phone: 508-2926 508-3087
Hours: WF 1:30-3:00 WF 1:30-3:00

Required books:

1. A bound laboratory notebook
2. "Microscale Inorganic Chemistry: A Comprehensive Laboratory Experience," Z. Szafran, R. M. Pike, and M. M. Shing, John Wiley and Sons, New York, 1991.

Meetings:

1. The laboratory (class #4846) is scheduled for two meetings per week, Wednesday and Friday at 8:15-11:15 AM in FH-201.
2. A pre-lab discussion starting promptly at 8:15 AM is given in FH-129 before work on the scheduled experiment begins. Attendance for the entire pre-lab discussion is required for admission to the laboratory.

Course Description:

Chemistry 341 is the laboratory course that accompanies Advanced Inorganic Chemistry, Chemistry 340. The course uses modern inorganic chemistry techniques and illustrates topics covered in Chem. 340. Experiments involve the synthesis and characterization of inorganic and organometallic compounds. Compound characterization involves physical, magnetic, and spectral measurements. Special techniques include instrumental analysis, manipulation of air sensitive materials and the use of micro-scale quantities of materials.

Grading:

7 Experiments (8 points each)	56
Notebook (due the week following each experiment)	14
Questions (due with the notebook)	14
Lab Exam on 4/30	10
Safety	3
Cleanup (2 points) and Check-out (1 point)	<u>3</u>
Total	100

Scale:

A 100-90; B 89-80; C 79-70; D < 69

LABORATORY SCHEDULE

<u>WEEK</u>	<u>DATE</u>	<u>EXPERIMENT</u>	<u>READING</u>
1 (AWH)	1/20 1/22	Notebook & Safety Check-in	Handouts 1-47
2 (AWH)	1/27 1/29	#26: <i>trans</i> -[Co(en) ₂ Cl ₂]Cl <i>cis</i> -[Co(en) ₂ Cl ₂]Cl	239-242 242-243
3 (AWH)	2/3 2/5	Visible Spectroscopy Infrared Spectroscopy	107-113 114-125
4 (RCH)	2/10 2/12	#22: Cr(acac) ₃ Mn(acac) ₃	224-227 227-229
5 (RCH)	2/17 2/19	Magnetic Susceptibility Melting Point	49-56 74-80
6 (RCH)	3/3 3/5	#29: Crystal Field Splitting UV-Visible Spectra	248-252
7	3/8-3/13	Spring Break – No Classes	
8 (RCH)	3/17 3/19	#31: Ni(DPPP)Br ₂ Melting Point & UV-Vis Spectra	257-260
9 (RCH)	3/24 3/26	Magnetic Susceptibility (solid) FT NMR	125-140
10 (RCH)	3/31 4/2	Make-up Laboratory Easter Break	
11 (AWH)	4/7 4/9	#34: Wilkinson's Catalyst (A) IR & ¹ H NMR Spectra	271-277
12 (AWH)	4/14 4/16	#42 Synthesis of Metal Carbonyls A) IR Spectra	313-316
13 (AWH)	4/21 4/23	#39: Allylpalladium Chloride Molecular Fluxionality	Handout 298- 302
14 (AWH)	4/28 4/30	Check-out - Make-up Laboratory Lab Exam – FH 129	

Group 1^a

<u>Name</u>	<u>Cleanup Days</u>	<u>Drawer Nos.</u>
1. Shaun Boyes	1/22 & 4/23	33 & 34
2. Matthew Donatello	1/27 & 4/16	37 & 38
3. Roman Garcia	1/29 & 4/9	41 & 42
4. Brian Gavin	2/10 & 3/26	49 & 50
5. Jonathan Muscolino	2/12 & 3/24	53 & 54
6. Thanh Ngo	3/3 & 3/19	57 & 58

Group 2^b

<u>Name</u>	<u>Cleanup Days</u>	<u>Drawer Nos.</u>
7. Millie Parkara	3/5 & 3/17	61 & 62
8. Anthony Savushkin	2/19 & 4/7	65 & 66
9. Gregory Servillas	2/17 & 4/14	73 & 74
10. Zachary Soiya	2/5 & 4/21	81 & 82
11. Chelsea Spencer	2/3 & 4/28	85 & 86

a. Group 1 begins compound characterization with the first method scheduled.

b. Group 2 begins compound characterization with the second method.