

The Chemistry of Transition Metals

Chemistry 332

Section: D100

Term: 2006 Spring

Instructor: R.H. Hill

Discussion Topics: General Course Description:

The chemistry of classical and organometallic compounds of the transition metals.

3 lecture hours/week; 1 tutorial hour/week; 0 lab hours.

Topics:

1. Classification of the transition metal elements, lanthanides and actinides; comparison with main group elements.
2. Introduction to symmetry.
3. Common geometries and isomerism exhibited by TM complexes.
4. MO description of bonding in classical and organometallic complexes. The 18-electron Rule.
5. Uv-vis and magnetic properties of classical TM complexes.
6. Introduction to the common techniques used to characterize TM compounds: IR, MS, NMR, ESR, etc.
7. Brief overview of the reaction mechanisms exhibited by TM complexes.

Grading: 15% First In-Term Examination (~7th week)

25% Second In-Term Examination (~11th week)

60% Final Examination

The Chemistry of Transition Metals

Required Texts: C.E. Housecroft and A. Sharpe, "Inorganic Chemistry". 2nd Edition 2004, Prentice Hall.

A.K. Brisdon, "Inorganic Spectroscopic Methods." 1998, Oxford Science

Recommended Texts: None.

Materials/Supplies: None

Prerequisite/Corequisite: Prerequisite: CHEM 230 and CHEM 236.

Notes: None

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