

TODAY'S TOPICS

- organometallic history
- 18-electron rule
- electron counting / oxidation state assignment

PROBLEMS OF THE DAY

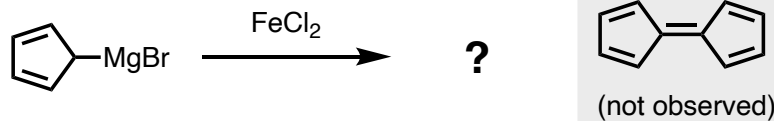
#1 Cobalt(III) coordination complexes, so-called “Werner complexes” played an important role in the historical development of the fields of inorganic and organometallic chemistry. **Provide the 3D structure of the coordination complex $\text{CoCl}_3 \cdot 4(\text{NH}_3)$.**

CHEMIST OF THE DAY



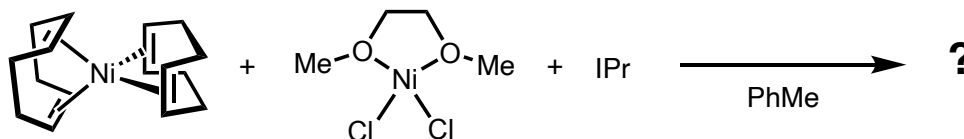
name?
institution
known for?

#2 **A.** In 1951, Paulson and Kelly attempted to synthesize fulvalene under the conditions shown below. Instead they obtained an unexpected product. **Provide as many possible connectivities as possible for this unexpected product and propose how to rule out alternatives using techniques available in the 1950s.**



B. For the correct structure, **provide the coordination number, metal oxidation state, d-electron count, and overall electron count.**

#3 Consider the reaction below. **A.** Provide the structure for the “IPr” ligand. **B.** Predict the structure of the major product. **C.** Provide the term for the redox reaction involved in this process. **D.** Provide the coordination number, metal oxidation state, d-electron count, and overall electron count.



QUOTE OF THE DAY

“To know oneself is, above all, to know what one lacks.

It is to measure oneself against Truth, and not not the other way around

- Flannery O'Connor

READING

Hartwig: Ch. 1.1–1.3
Crabtree: Ch. 1–2

#4 For the structures below, **provide the coordination number, metal oxidation state, d-electron count, and overall electron count.**

