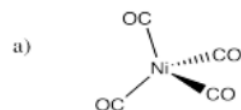


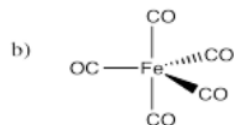
4.5: Solutions for Selected Problems

Note: In some cases, formal charge has been shown only on a particular atom to emphasize an aspect of its reactivity, but is left off other atoms.

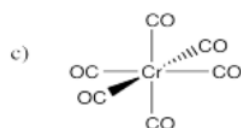
Exercise 4.2.1:



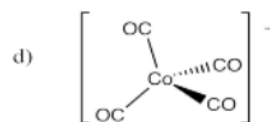
electrons on metal atom: 10
charge on metal: none
electrons on atom / ion: 10
electrons donated by ligands: $2 \times 4 = 8$
total: 18



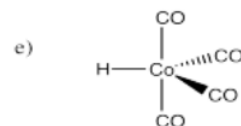
electrons on metal atom: 8
charge on metal: none
electrons on atom / ion: 8
electrons donated by ligands: $2 \times 5 = 10$
total: 18



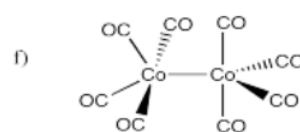
electrons on metal atom: 6
charge on metal: none
electrons on atom / ion: 6
electrons donated by ligands: $2 \times 6 = 12$
total: 18



electrons on metal atom: 9
charge on metal: -1
electrons on atom / ion: 10
electrons donated by ligands: $2 \times 4 = 8$
total: 18



electrons on metal atom: 9
charge on metal: +1
electrons on atom / ion: 8
electrons donated by ligands: $2 \times 5 = 10$
total: 18



electrons on metal atom: 9
charge on metal: none
electrons on atom / ion: 9
electron donated from other metal: 1
electrons donated by ligands: $2 \times 4 = 8$
total: 18

Figure 4.5.1:

Exercise 4.2.2:

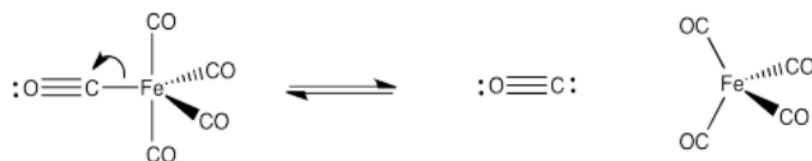


Figure 4.5.2:

Exercise 4.2.3:

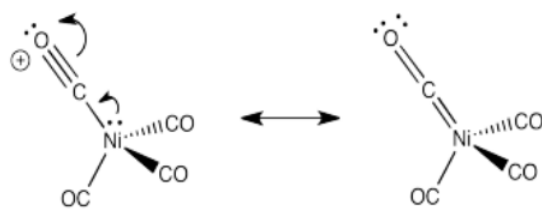


Figure 4.5.3:

Exercise 4.2.6:

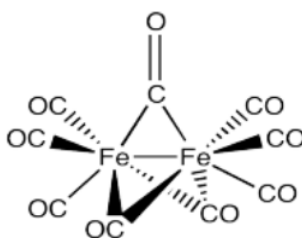


Figure 4.5.4:

Exercise 4.2.7:

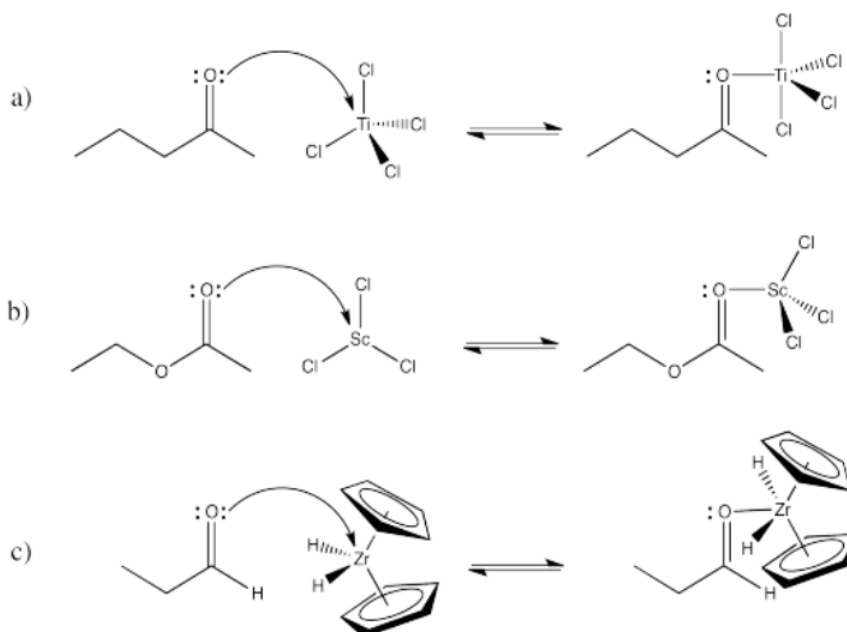


Figure 4.5.5:

Exercise 4.3.2:

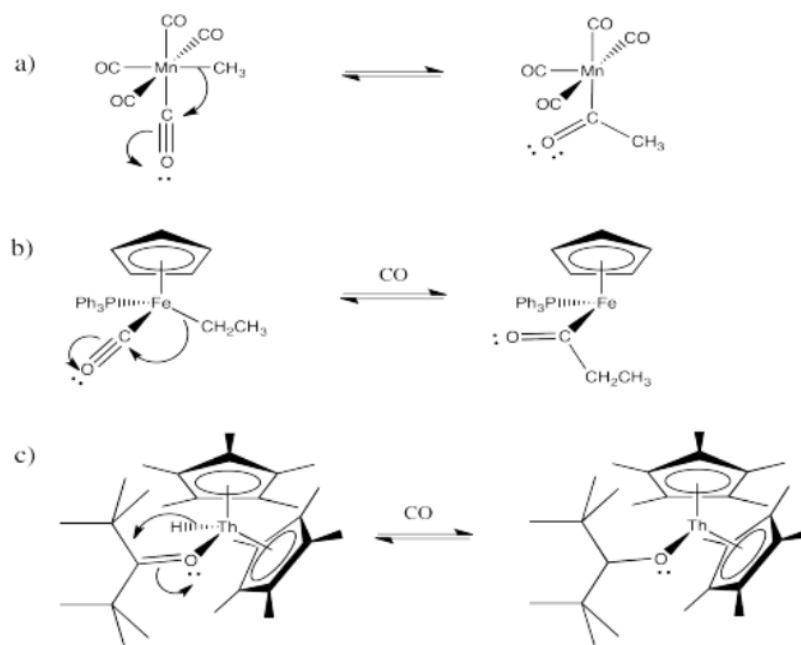


Figure 4.5.6:

Exercise 4.3.4:

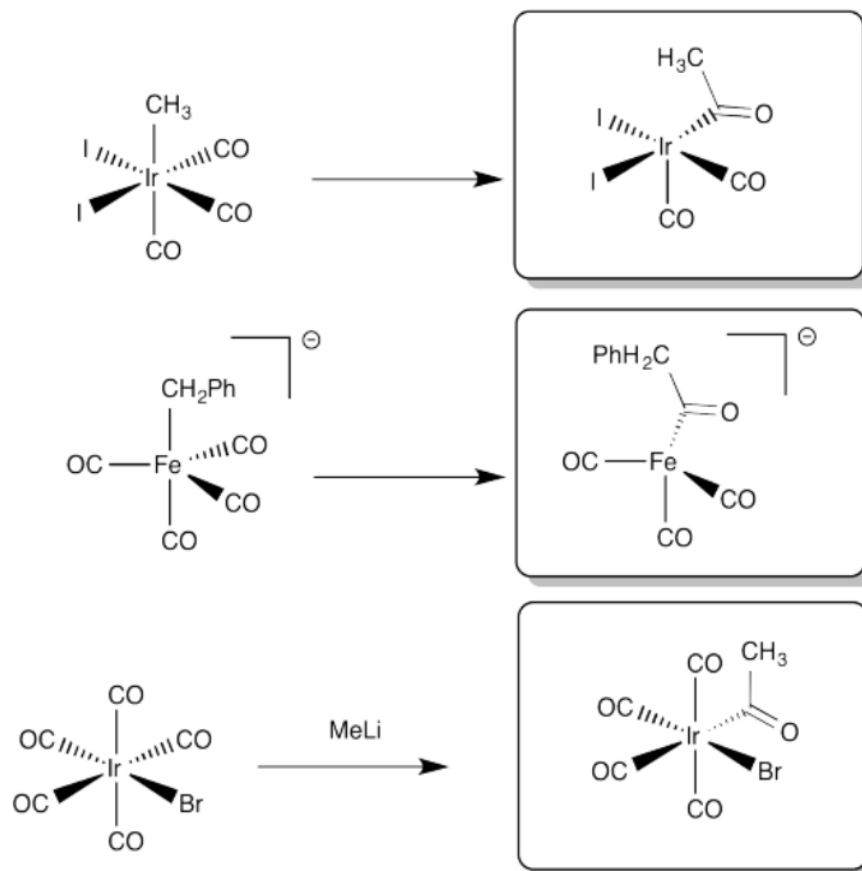
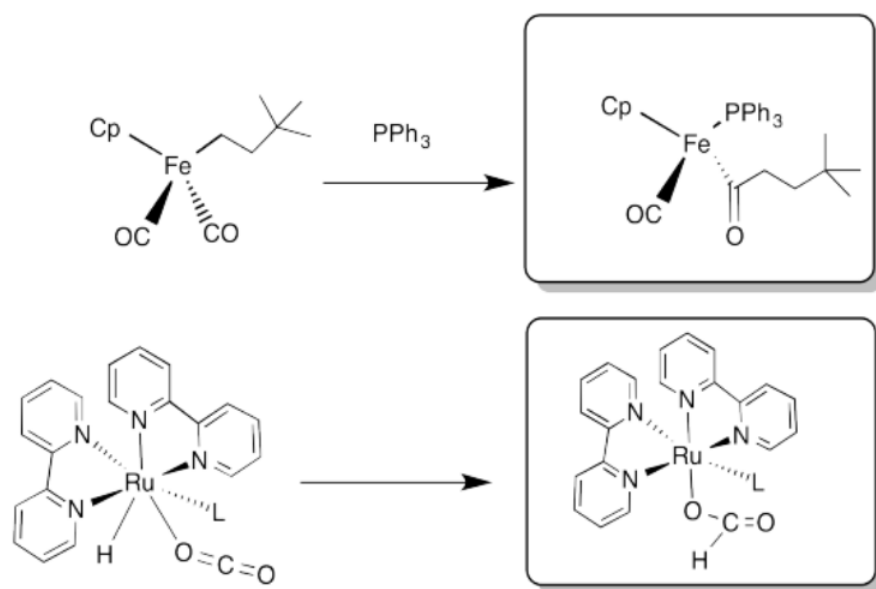


Figure 4.5.7:



Challenge:

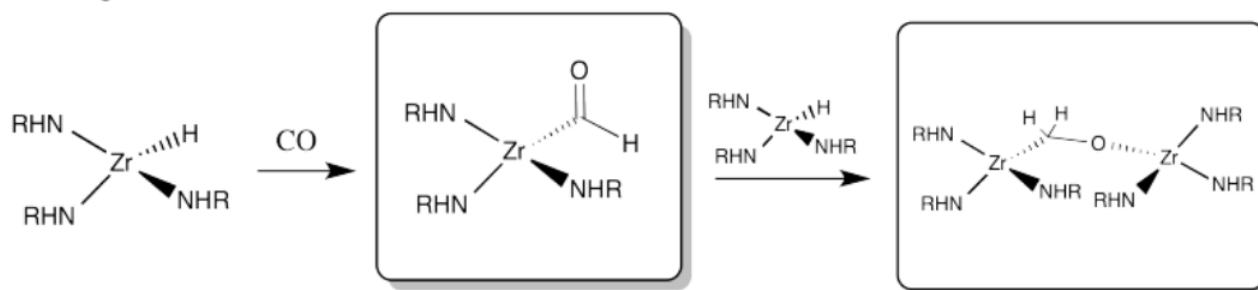


Figure 4.5.8:

Exercise 4.3.5:

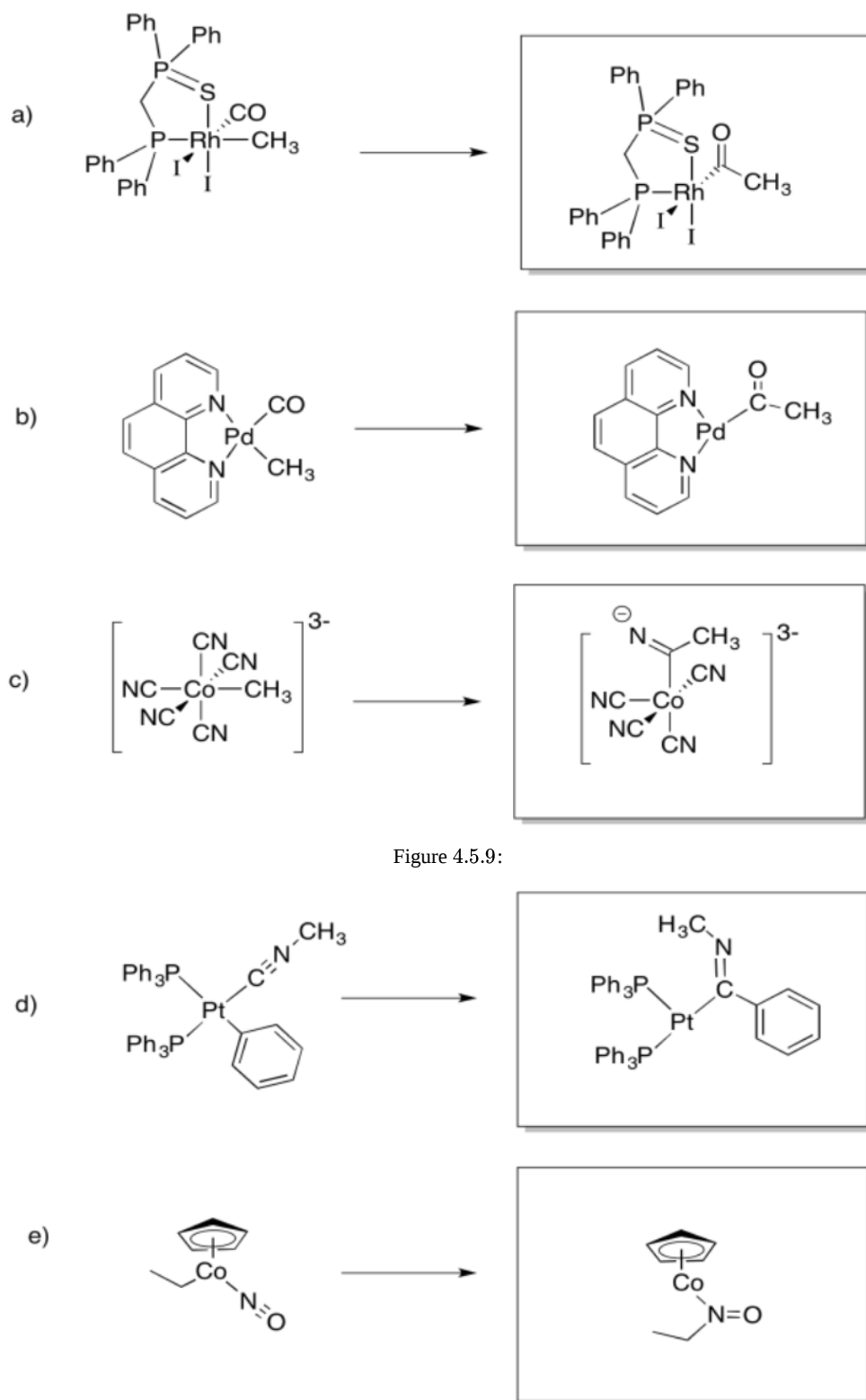


Figure 4.5.9:

Figure 4.5.10:

Exercise 4.4.1:

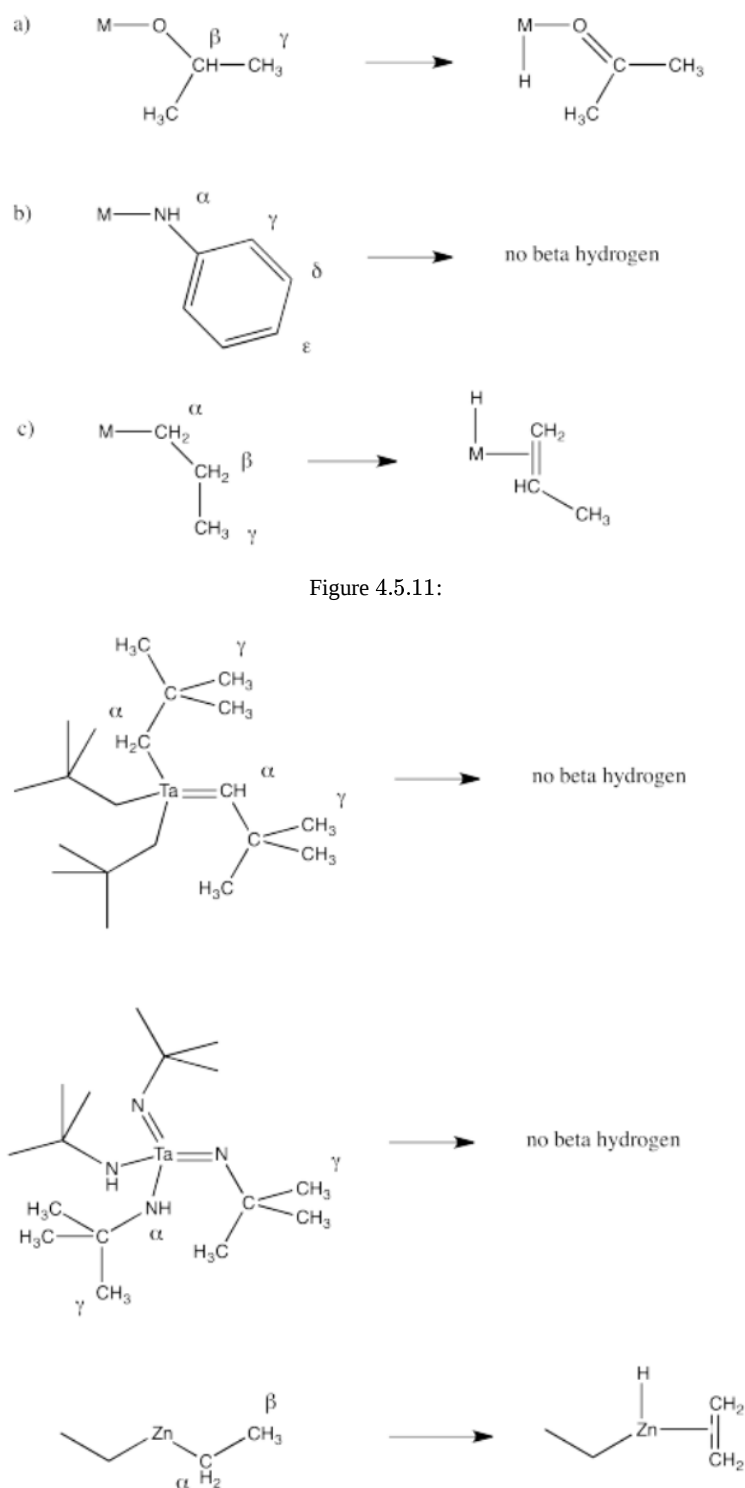


Figure 4.5.11:

Figure 4.5.12:

Exercise 4.4.2:

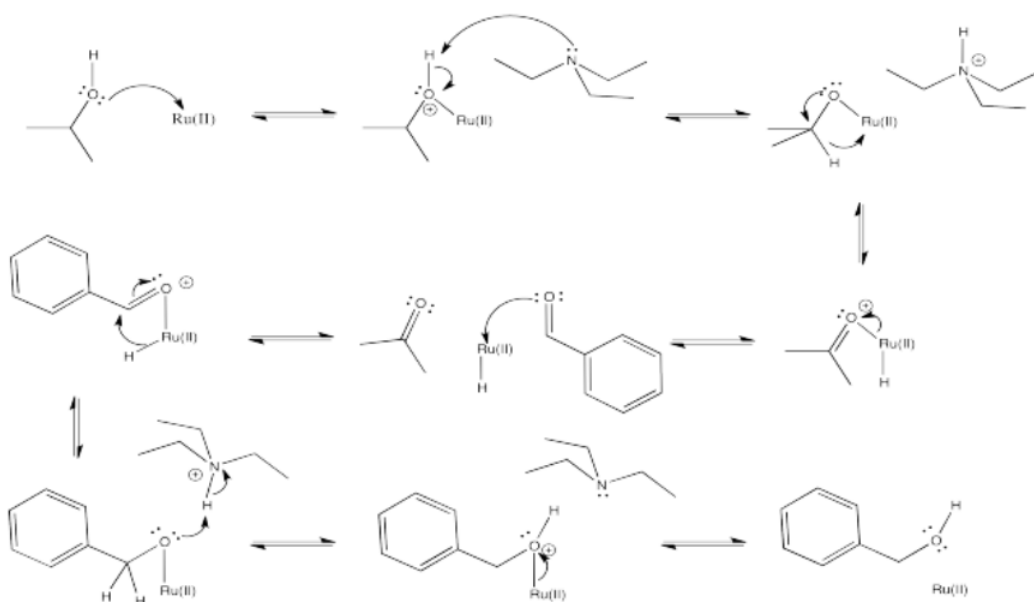


Figure 4.5.13:

Exercise 4.4.3:

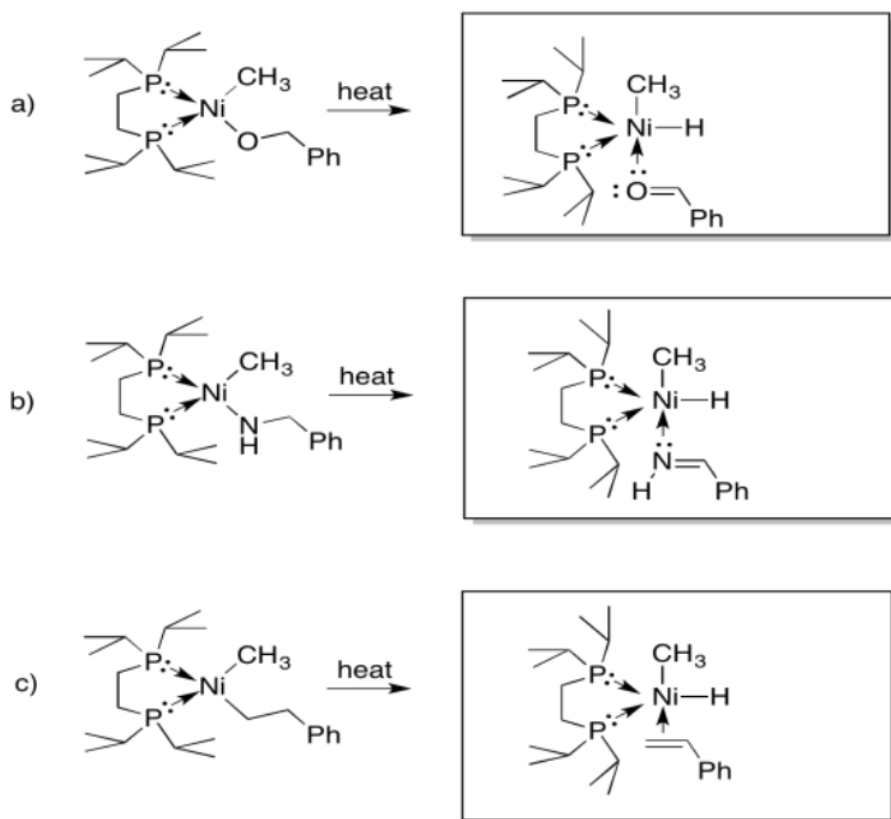


Figure 4.5.14:

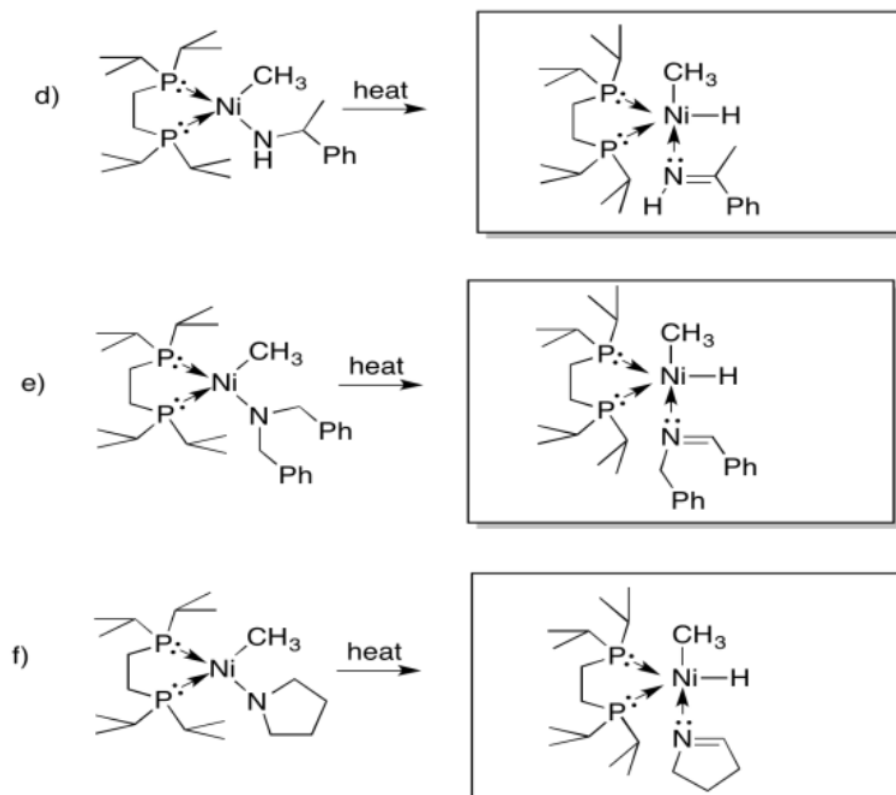


Figure 4.5.15:

Exercise 4.4.4:

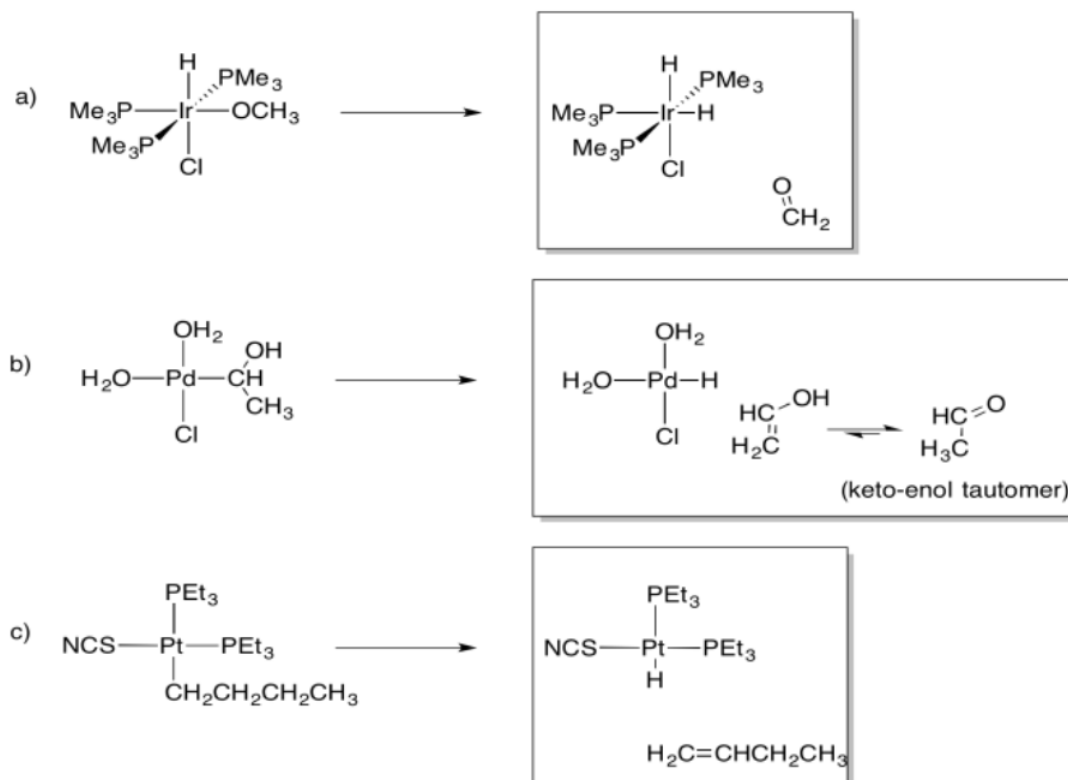


Figure 4.5.16:

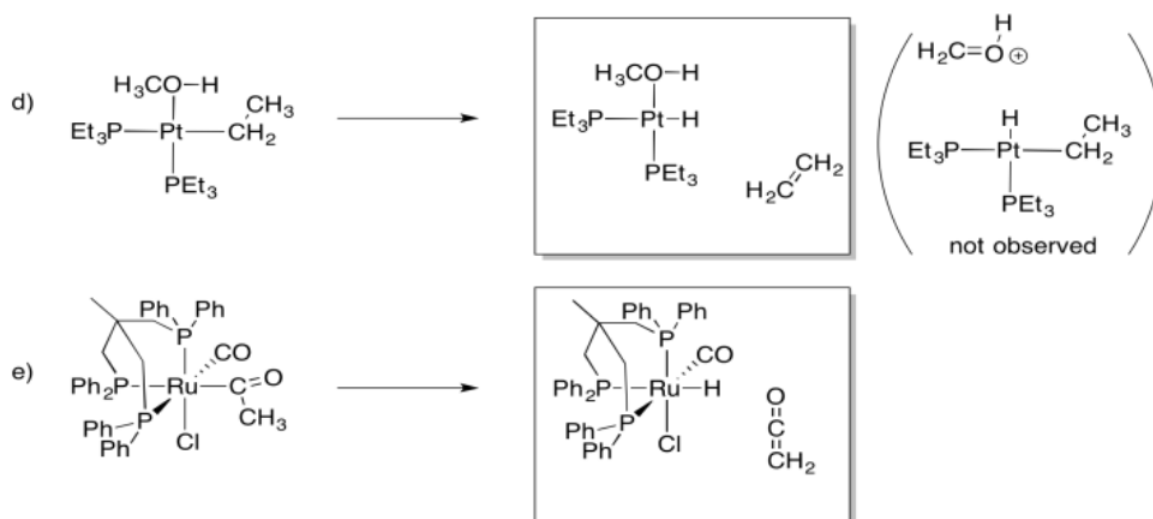


Figure 4.5.17:

Exercise 4.4.5:

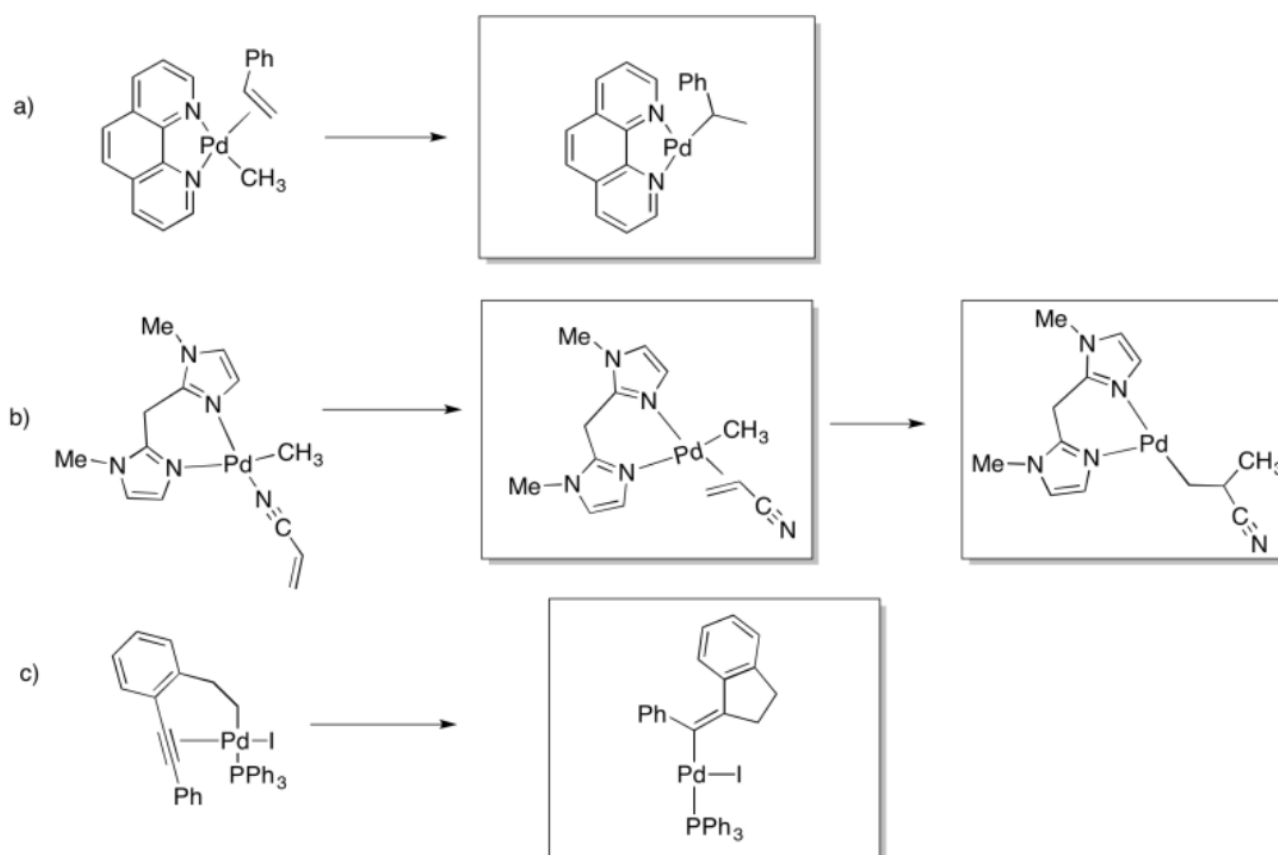


Figure 4.5.18:

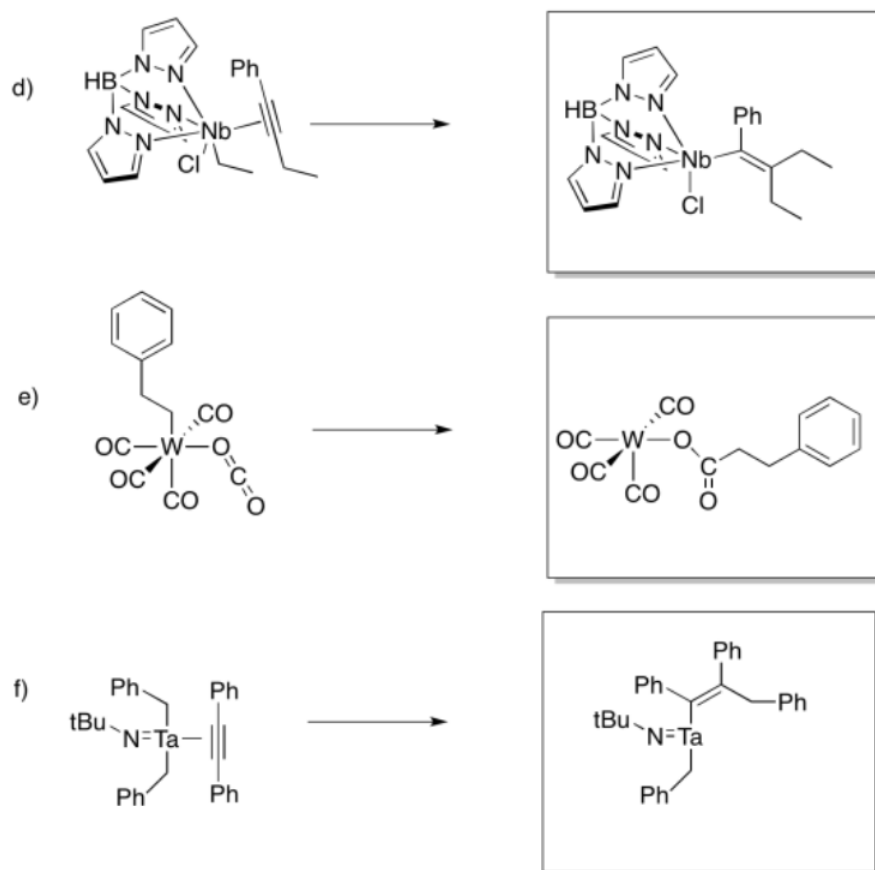


Figure 4.5.19:

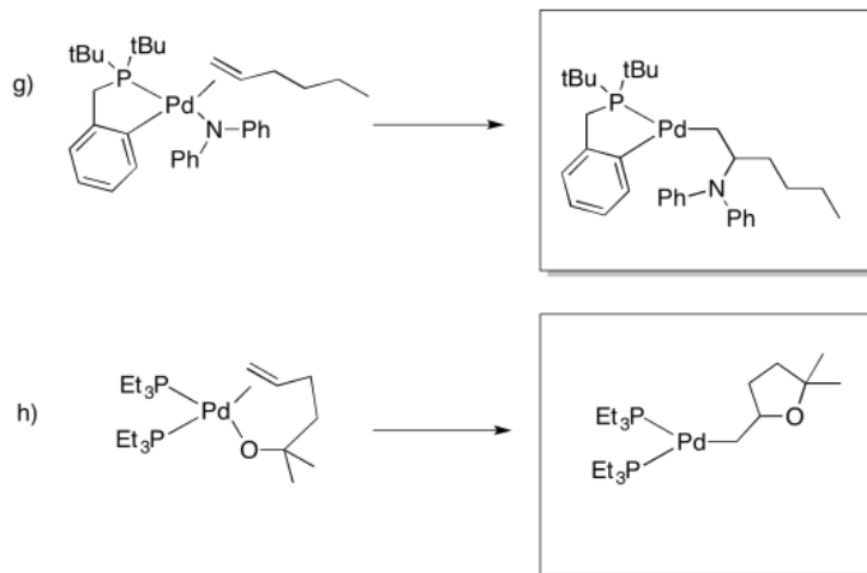


Figure 4.5.20:

Exercise 4.4.6:

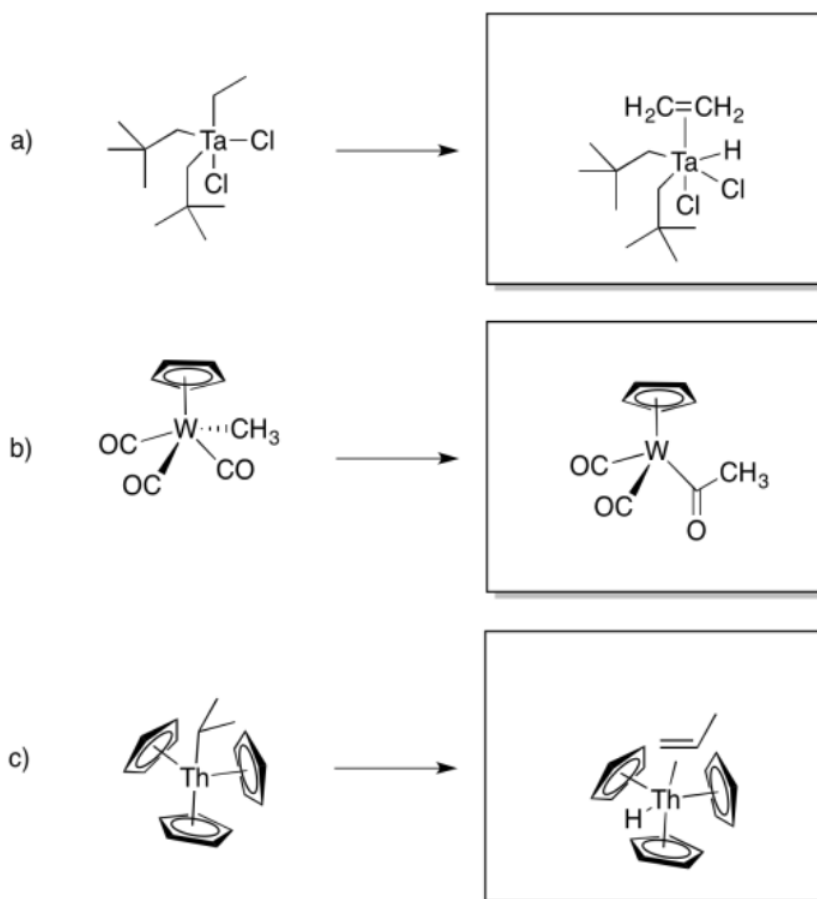


Figure 4.5.21:

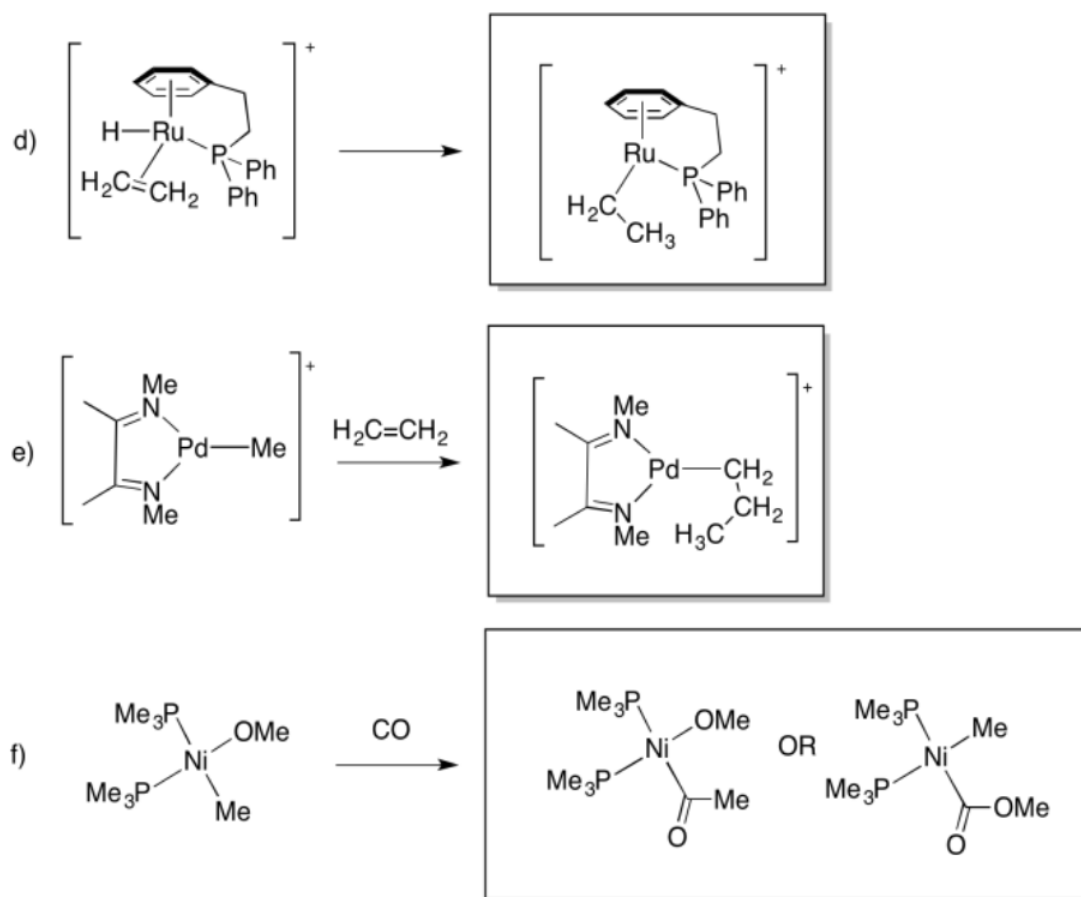


Figure 4.5.22:

Exercise 4.4.7:

a)

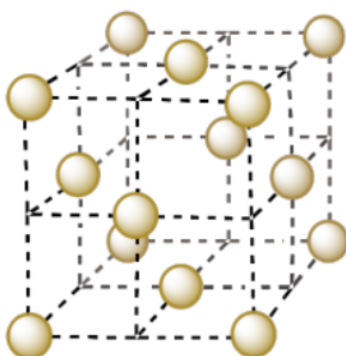


Figure 4.5.23:

b)

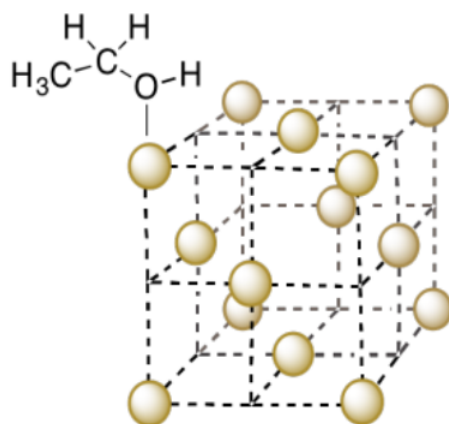


Figure 4.5.24:

c)

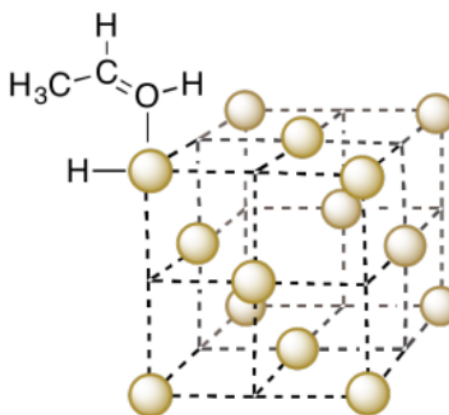


Figure 4.5.25:

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