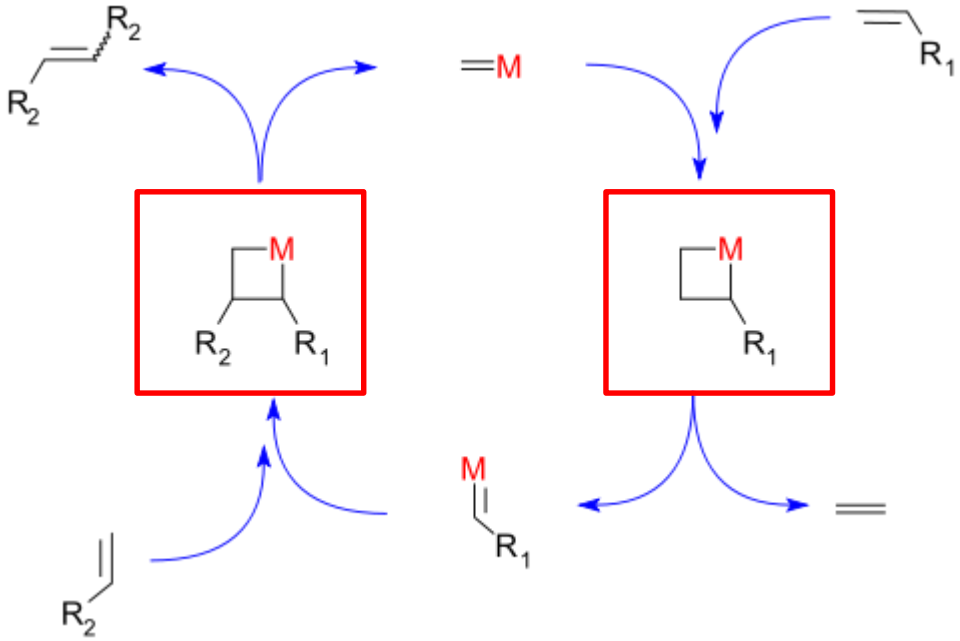
# The contribution of Yves Chauvin

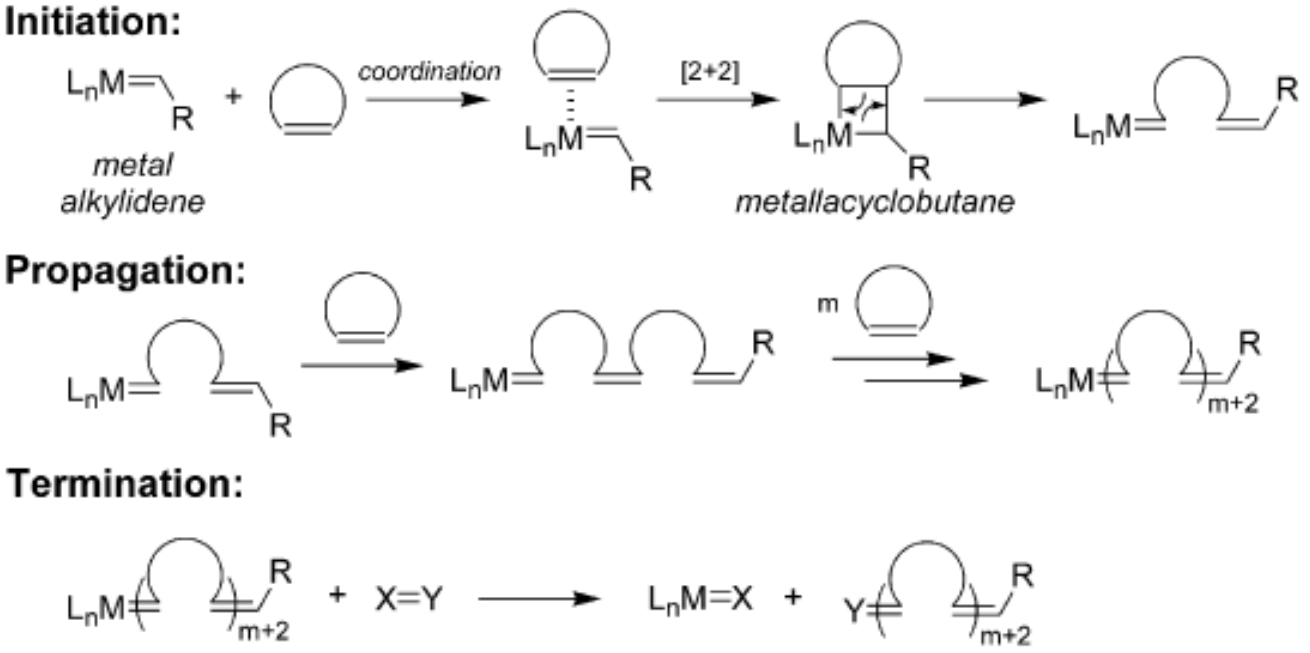
Yves Chauvin

**….the mechanism….**

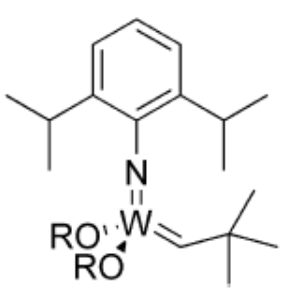


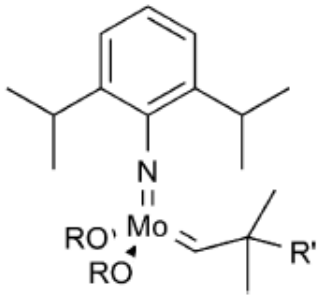
# Ring Opening Metathesis Polymerization (ROMP)

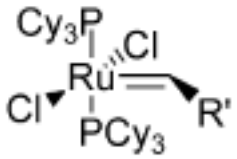
- Mechanism:

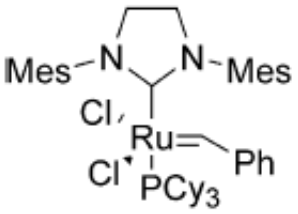



- Catalysts: titanium, tantalum, tungsten, molybdenum, ruthenium



What other simple experiments you can propose to probe if phosphine dissociation is dissociative?

**The addition of $PCy_3$ dramatically decreases the rate of RCM, while adding CuCl increases the rate. WHY? (Answer: phosphine removal from the system).**

**The most likely mechanism is based on a dissociative processes.**

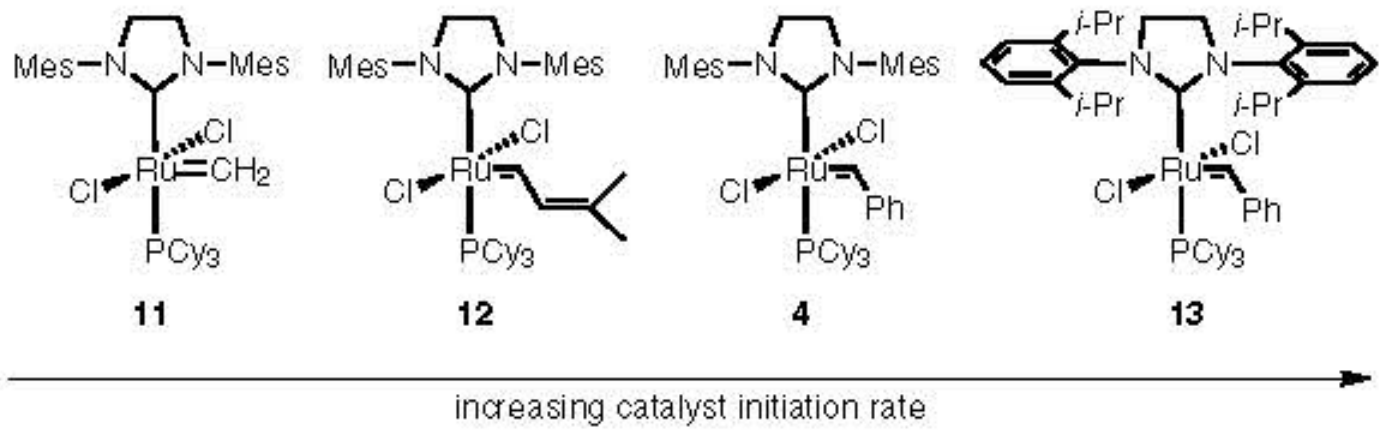



**Figure 4.** Influence of the Nature of the Alkylidene and NHC Ligands on the Initiation Rate of the Second-Generation Catalyst.

Sterically bulky and electron-donating groups (e.g., alkyl) on alkylidene lead to higher initiation rates because they more effectively promote phosphine dissociation.