CLAIMS

What is claimed is:

1. A method of preparing a polymer, the method comprising:
    i. metalating an organophosphine compound in the substantial absence of monomer to form a metalated organophosphine; and
    ii. introducing the metalated organophosphine to monomer including conjugated diene monomer to form a reactive polymer.

2. The method of claim 1, where said step of metalating an organophosphine compound includes reacting a secondary organophosphine with an organolithium compound.

3. The method of claim 2, where the secondary organophosphine is a dihydrocarbyl phosphine or substituted dihydrocarbyl phosphine.

4. The method of claim 1, where said step of metalating an organophosphine includes reacting a group I or group II metal with an halodiorganophosphine.

5. The method of 4, wherein the group I or group II metal is lithium.

6. The method of claim 5, where the halodiorganophosphine is a dihydrocarbyl phosphinous halide or substituted dihydrocarbyl phosphinous halide.

7. The method of claim 1, where the metalated organophosphine is lithium organophosphide.

8. The method of ~~claims 1-7~~claim 1, further comprising the step of reacting the reactive polymer with a proton source, a coupling agent, or a functionalizing agent.

9. The method of ~~claims 1-8~~claim 1, where the monomer also includes vinyl aromatic monomer.

10. The method of ~~claims 2-7~~claim 2, where said step of reacting takes place in the presence of a polar coordinator.

11. The method of ~~claims 1-10~~ claim 1, where said step of reacting takes place within an aliphatic and/or cycloaliphatic solvent.

12. The method of claim 2, where the molar ratio of organolithium to the secondary organophosphine is from about 10:1 to about 0.05:1.

13. The method of claim 5, where the molar ratio of lithium metal to the halodiorganophosphine is from about 10:1 to about 1:1

14. The method of claim 1, where said step of metalating takes place in the presence of less than 1 mole percent monomer to phosphine.

15. The methods of claim 1, where said step of introducing takes place continuously under continuous polymerization techniques.

16. A method of preparing a polymer, the method comprising:

i. preparing an initiator having the formula R_2PLi, where each R is independently a monovalent organic group, P is a phosphorus atom, and Li is a lithium atom attached directly to the phosphorus atom; and

ii. polymerizing conjugated diene monomer by initiating the polymerization with the initiator.