

Isomerization of Olefins Using Palladium Catalysis

Research Themes

- Developing new late transition metal catalysts for the polymerization of alpha-olefins
- Creating new reactions using the fundamentals of polymerization catalysts to perform other transformations using olefins as precursors
- Copolymerizing polar comonomers with alpha-olefins to create functionalized polyolefins

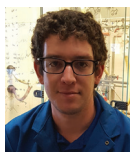
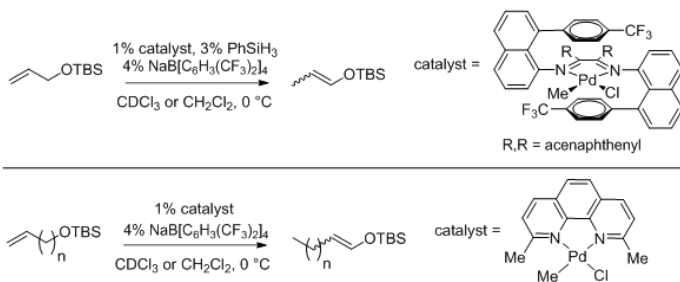
Recent Accomplishments

- 1) Developed a selective palladium catalyst to isomerize 1-alkenes to 2-alkenes. By using a sterically hindered "sandwich" diimine-palladium catalyst, selectivity can be achieved through displacement of an internal olefin
- 2) Developed an efficient chain-running isomerization using phenanthroline based ligands and palladium. Silyl enol ethers can be accessed through long distance chain running.

Issues

There are still several areas in which late transition metal catalysts for olefin polymerization can be improved.

- Thermal stability over long periods of time
- Achieving high molecular weights that still have narrow molecular weight distributions
- Incorporation of polar comonomers without sacrificing activity or molecular weight



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