Enantioselective Palladium(II)-Catalyzed Borylation

Selected examples:

- **NHArF**
  - **Bpin**
  - 78% yield, 95.6% ee (with L2)

- **NHArF**
  - **Bpin**
  - 75% yield, 98.4% ee (with L1)

- **NHArF**
  - **Bpin**
  - 75% yield, 99.8% ee (with L1)

- **NHArF**
  - **Bpin**
  - 77% yield, 97.4% ee (with L1)

- **NHArF**
  - **Bpin**
  - 52% yield, 88.3% ee (with L1)

Synthetic application:

- **NHArF**
  - **Bpin**
  - 95.6% ee, 53% yield, cis-isomer
  - 39% yield, 94.8% ee, trans-isomer

Proposed asymmetric induction model:

**Significance:** The authors developed a palladium(II)-catalyzed borylation of cyclic amides by using chiral bidentate ligands. A wide variety of borylated cyclobutanes bearing an amide group were obtained with high selectivities.

**Comment:** A transformation of the product, including the removal of the amide auxiliary, was accomplished to demonstrate the synthetic utility of the reaction. An asymmetric induction model is also proposed.