**Pd-PEPPSI-IPentCl – Selective Coupling of Secondary Organozinc Nucleophiles**

**Significance:** The authors report the new catalyst Pd-PEPPSI-IPentCl, which highly efficiently couples secondary alkylzinc reagents to (hetero)aryl bromides, chlorides and triflates. The corresponding alkylated aromatics are obtained in excellent yield and with high regioselectivity.

**Comment:** β-Hydride elimination (BHE) constitutes one of the main drawbacks for the cross-coupling of secondary alkyl reagents, especially if they react with electron-rich coupling partners. These problems are overcome by the new palladium-catalyst, which bears bulkier substituents and additionally, is characterized by a decreased electron density, thus favoring reductive elimination instead of BHE. Density functional theory (DFT) calculations support the theoretical selectivities.

**Ar** = Ar, O- and N-HetAr

**R**¹ = Me, Et

**R**² = Et, alkenyl, n-Pr

**R**¹ + **R**² = Boc-protected piperidine

**X** = Br, Cl, OTf

Selected examples:

- 99% yield
  - n/r > 99:1
- 85% yield
  - n/r = 49:1
- 95% yield
  - n/r > 99:1
- 95% yield
  - n/r > 99:1
- 84% yield
  - n/r > 99:1

**Category**
- Metal-Mediated Synthesis

**Key words**
- palladium
- zinc
- PEPPSI
- organo-zinc reagents