Flow-Generated Diazocompounds and Their Use in Cross-Coupling

**Significance:** Unstable diazo compounds were generated as reactive intermediates in a flow system using a MnO₂-packed cartridge with Hünig’s base. The resulting diazo compounds reacted with carboxylic acids and arylboronic acids under flow conditions to give the corresponding esters 2a–f in 72–100% yield and the C–C coupling products 3a–f in 67–95% yield, respectively.

**Comment:** The generated diazo compounds were detected and titrated by in-line IR spectroscopy. The MnO₂-packed cartridge was regenerated by flowing tert-butyl hydroperoxide in dichloromethane and reused twice with a slight loss of activity.

**Chemical Structure:***

- **Esterification:**
  - 2a R = Me, 73% yield
  - 2b R = CF₃, 74% yield
  - 2c R = Ph, 74% yield
  - 2d 70% yield
  - 2e 87% yield
  - 2f 100% yield

- **Coupling reaction:**
  - 3a R = H, 79% yield
  - 3b R = Me, 67% yield
  - 3c R = C₂H₅, 85% yield
  - 3d 86% yield
  - 3e 86% yield
  - 3f 79% yield