Flow-Generated Diazo Compounds 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 Hüning’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.

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**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