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Flow Chemistry as a Discovery Tool to Access sp^2–sp^3 Cross-Coupling Reactions via Diazo Compounds
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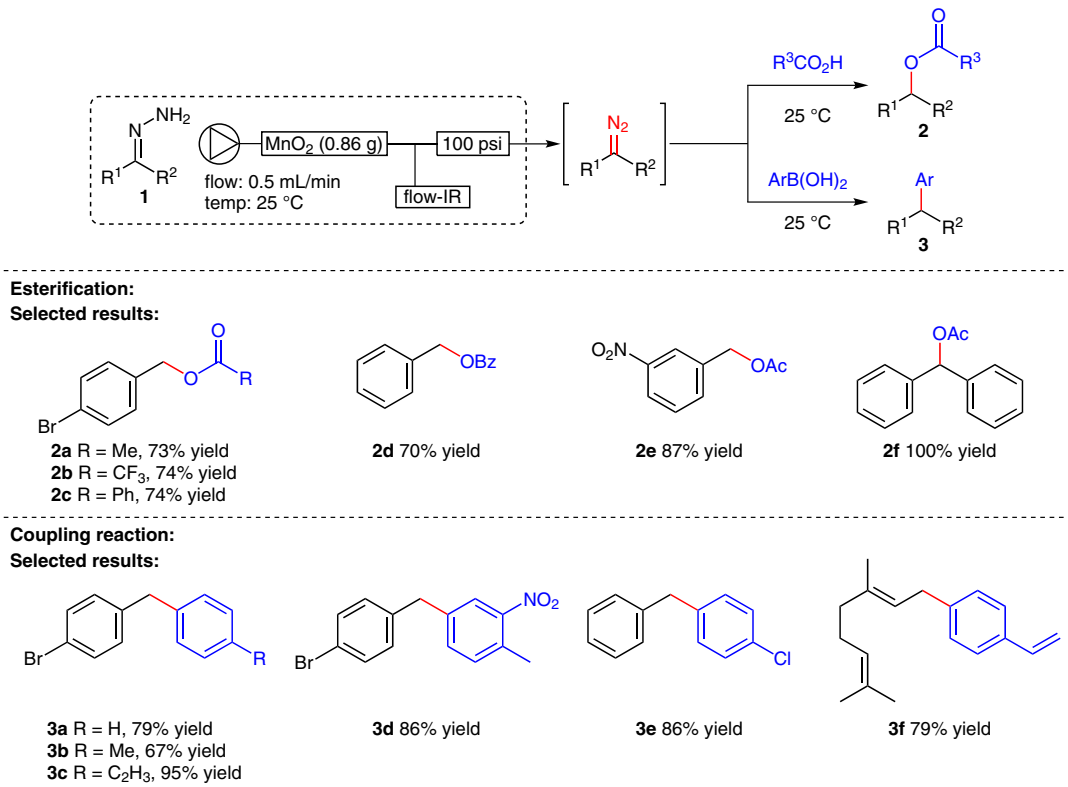
Flow-Generated Diazo Compounds and Their Use in Cross-Coupling



Significance: Unstable diazo compounds were generated as reactive intermediates in a flow system using a MnO_2-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 MnO_2-packed cartridge was regenerated by flowing *tert*-butyl hydroperoxide in dichloromethane and reused twice with a slight loss of activity.

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Category
Polymer-Supported Synthesis

Key words
diazo compounds
flow reaction
cross-coupling
manganese oxide