Formylation of Aryl Iodides with CO₂ Using Palladium on Carbon

**Significance:** Palladium on carbon (Pd/C) catalyzed the formylation of aryl iodides in the presence of poly(methylhydrosiloxane) (PMHS) and 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) under a CO₂ atmosphere in acetonitrile to give aryl aldehydes in up to 81% yield (20 examples).

**Comment:** The formylation of aryl iodides to aryl aldehydes using CO₂ as a C₁ resource was achieved. The authors previously reported the cyclization of ortho-phenylenediamines to benzimidazoles (Green Chem. 2013, 15, 95) and 2-aminothiophenol to benzothiazolone (ACS Catal. 2013, 3, 2076) using CO₂ as a C₁ resource.

**Selected examples:**

- R₁=H, R₂=H: 77% yield
- R₁=H, R₂=H: 71% yield
- R₁=H, R₂=H: 66% yield
- R₁=H, R₂=H: 62% yield
- R₁=H, R₂=H: 60% yield
- R₁=H, R₂=H: 81% yield
- R₁=H, R₂=H: 64% yield
- R₁=H, R₂=H: 60% yield
- R₁=H, R₂=H: 57% yield
- R₁=H, R₂=H: 12% yield

**Key words:** aryl iodides, aryl aldehydes, carbon dioxide, formylation, palladium on carbon.