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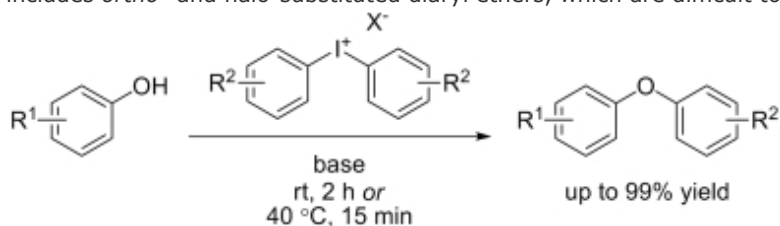
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267 - Room temperature, metal-free synthesis of diaryl ethers with use of diaryliodonium salts

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Diaryl ethers are common structural features in numerous natural products and biologically active compounds. Despite more than a century of immense focus on finding efficient synthetic routes to this compound class, diaryl ethers remain difficult to obtain. Routes that are catalytic in copper have been developed, but high catalyst loadings, excess reagents, elevated temperatures and long reaction times are still needed. Pd-catalyzed cross-couplings of phenols and aryl halides at temperatures up to 100 °C have recently been reported to give high yields of diaryl ethers. Diaryliodonium salts are non-toxic alternatives to transition metals in the synthesis of diaryl ethers and we have recently developed effective synthetic routes to these salts.

Herein we report a fast, high-yielding synthesis of diaryl ethers. The reaction conditions are mild, metal-free, and avoid the use of halogenated solvents, additives, or excess reagents. Precautions to avoid air or moisture are not needed. The scope includes *ortho*- and halo-substituted diaryl ethers, which are difficult to obtain by metal-catalyzed protocols



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