

A novel, domino O-H/C-H activation reaction towards the synthesis of oxygen-doped polyaromatic molecules with technological applications

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Benzoxanthene is a four-ring fused system containing one oxygen atom that can be isolated from coal tars. Benzoxanthene and its analogues have a wide range of applications, including in materials science as electroactive materials in solar cells, as well as a number of biological applications, as anti-inflammatory agents.¹ The well-known synthetic route towards benzoxanthene and its derivatives is the one-pot multi-component reaction between phenols and aryl halides in the presence of palladium.^{2,3} Herein, we report on the development of an innovative synthetic methodology, involving an Ullmann coupling between phenols and aryl halides, followed by an intramolecular C-H arylation step catalyzed by a copper source in a domino fashion (Figure 1).

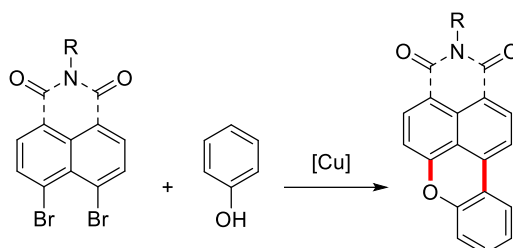


Figure 1: Benzoxanthene synthesis catalyzed by Cu.

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