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RU(II)-CATALYZED SULFINATION OF BORONIC ACIDS: NOVEL MULTI-COMPONENT PROCEDURE TOWARDS SULFONES

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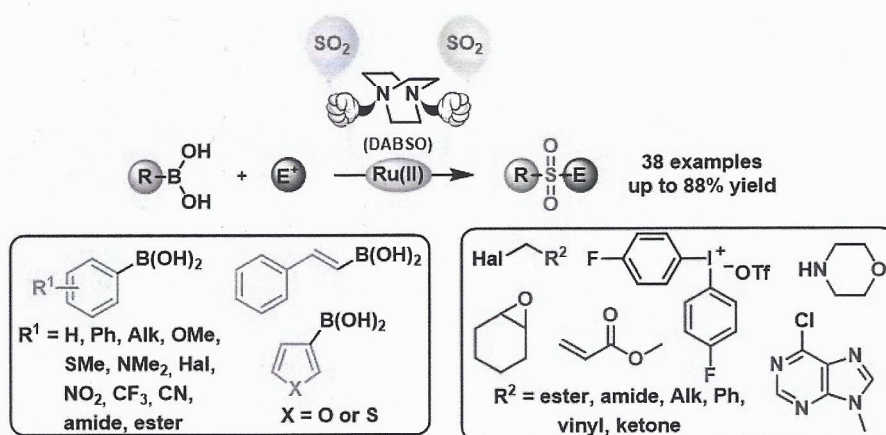
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Sulfones are valuable intermediates and building blocks in organic synthesis applied to obtain biological active molecules, as well as functional materials. During the last decades, great attention has been paid to the synthesis of sulfones *via* one-pot multi-component procedures that employ a simple sulfonyl source (SO_2 , DABSO, MSO_3 or $\text{M}_2\text{S}_2\text{O}_5$) and two sulfur free reactants. So far, application of transition metal catalysis for this type of reactions has been demonstrated by employing Pd(II), Au(I), Cu(I), Co(II) and Ni(II) catalytic systems [1–3].

We have developed the first Ru(II)-catalyzed sulfonylative cross-coupling reaction starting from (het)aryl- or alkenyl boronic acids and DABSO as a SO_2 surrogate. Initial transmetalation-sulfonation steps proceed in the presence of $\text{RuCl}_2(\text{PPh}_3)_3$ (5 mol%) and Et_3N in methanol at 100 °C. Next, generated sulfinate salt intermediate can be easily quenched by various types of electrophiles such alkyl halides, epoxides, Michael acceptors and λ^3 -iodanes in moderate to good yields.



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