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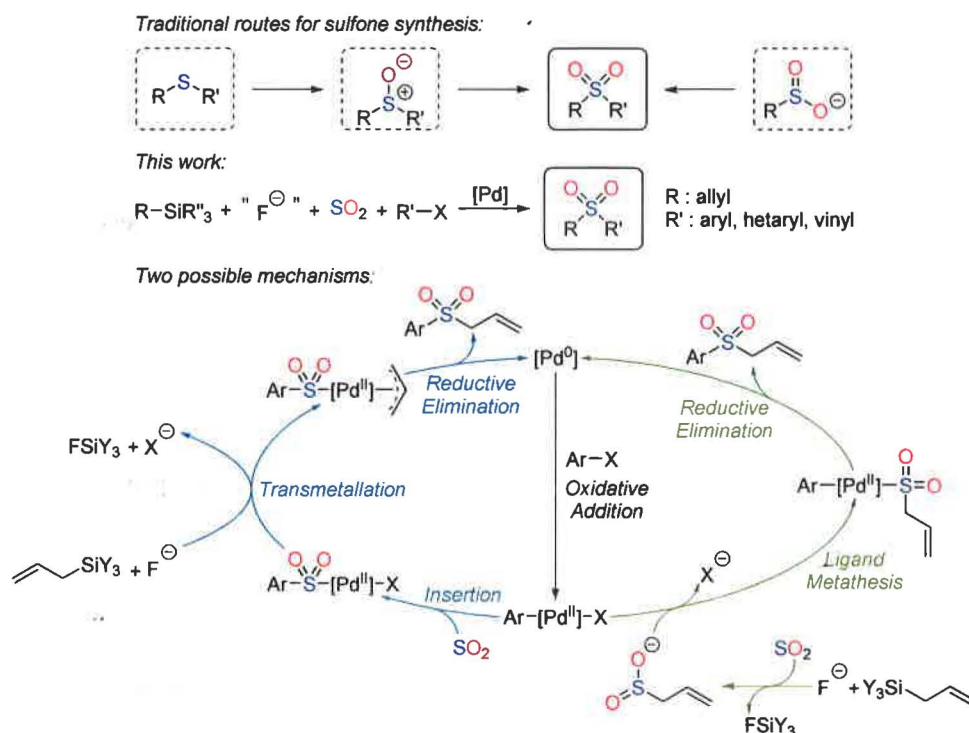
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Sulfonylative Hiyama Cross-Coupling: Development and Mechanistic Insights

A. Adenot,^a J. Char,^a N. von Wolff,^a G. Lefèvre,^a T. Cantat^{a,*}

^a: NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif-sur-Yvette cedex, France
aurelien.adenot@cea.fr

Due to distinctive structural and electronic features, sulfones have attracted a particular attention over the past few decades, making it a widespread functional group.^[1] Present in many contemporary pharmaceuticals and agrochemicals, they are also used as essential intermediates in organic synthesis. Therefore, numerous methodologies have been developed for their preparation.^[1] However, the most common methods suffer from significant limitations with harsh reaction conditions or regioselectivity issues. Recently, the insertion of a molecule of sulfur dioxide between two partners was investigated and reactions involving organomagnesium,^[2a] organozinc^[2b] and organoboron^[2c] compounds were reported. Herein we report a direct single-step palladium-catalyzed synthesis of sulfones involving organosilanes, sulfur dioxide and organohalides. Different mechanistic pathways were envisaged and discussed both from an experimental and theoretical standpoint.



[1] N.-W. Liu, S. Liang, G. Manolikakes, *Synthesis*, **2016**, 48, 1939.

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[3] N. von Wolff, J. Char, X. Frogneux, T. Cantat, *Angew. Chem. Int. Ed.* **2017**, 56, 5616.