

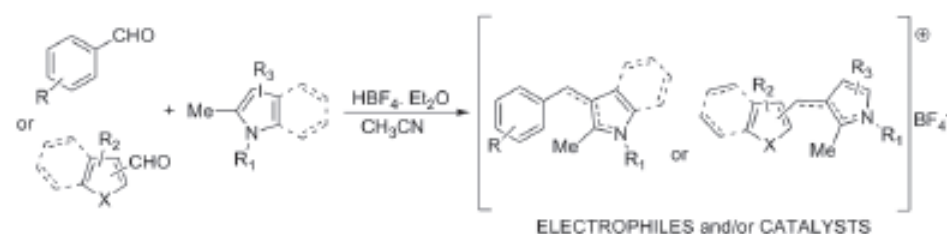
Stable diarylmethyl cation salts as reagents and catalysts

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We have recently reported the synthesis of a representative number of bench-stable and ready to use non-symmetric diarylcarbenium tetrafluoroborates *via* the direct coupling of aryl (or heteroaryl) aldehydes and *N*-heteroarenes (Scheme 1).¹ Some of them have been previously isolated as long shelf life *o*-benzenedisulfonimides,² which have been recently employed in a direct organocatalyzed asymmetric alkylation of aldehydes.³ The presence of the azole moiety (whether isolated or benzene-fused) is the crucial framework for the high stability of these diarylcarbenium ions due to the vinylogous iminium (alkylideneindoleninium) substructure stabilization.



Scheme 1

The easy preparation procedure, ready to use availability, high stability and structure variety of these normally highly reactive intermediates, along with the commercial availability of the tetrafluoroborate anion, make them a tool of great synthetic relevance in organic chemistry for the synthesis of more complex structures.

On the other hand, carbocations represent an hitherto almost completely neglected but very versatile Lewis acid class.⁴

Researches are currently under way on our laboratory on suitable reactions of these reactive species as electrophilic reagents in reactions with nucleophiles such as activated aromatics and cyclic silyl enol ethers, where good yields and diastereomeric ratio are observed. Meanwhile, they are tested in catalytic amounts in Lewis acid catalyzed organic reactions (e.g. Michael additions, dehydrative coupling).

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