

## CO<sub>2</sub>-Activation by Silyl Arenium Ions

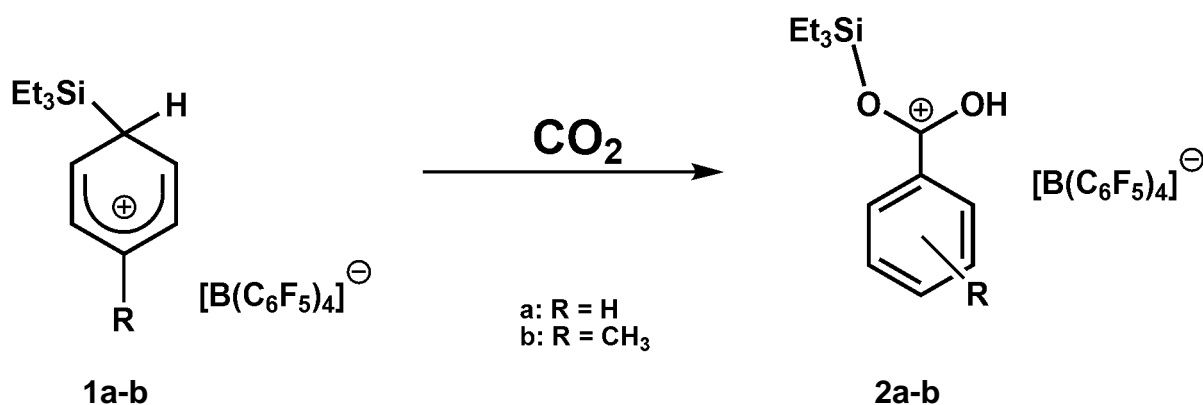
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The activation of small, unreactive molecules such as carbon dioxide is a subject of high interest and intensive current research.<sup>[1]</sup>

Although there are several examples of catalytic CO<sub>2</sub>-activation based on transition metal complexes,<sup>[2] [3]</sup> only a few systems are known in main group chemistry. Recently it was realized that N-heterocyclic carbenes have the ability for the catalytic, nucleophilic activation of CO<sub>2</sub>,<sup>[4]</sup> and frustrated phosphane-borane-pairs have been used successfully for the reversible fixation of CO<sub>2</sub>.<sup>[5]</sup>

In this contribution we present our results, which indicate the electrophilic activation of CO<sub>2</sub> by silyl arenium ions **1**.



Scheme 1: CO<sub>2</sub>-activation by silyl arenium ions.

Silyl arenium ions **1** were synthesized by hydride abstraction at room temperature in aromatic solvents in form of their tetrakis(pentafluorophenyl)borate salts.

Stirring of cations **1** under CO<sub>2</sub>-atmosphere over several hours leads to the clean and quantitative formation of benzyl cations **2** (Scheme 1). Benzyl cations **2** were fully characterized by NMR-spectroscopy, supported by quantum mechanical calculations of NMR chemical shifts.

In addition, deprotonation of benzyl cations **2** yields the corresponding benzoic esters.

### Literatur:

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