

## **Chiral Memory in Silyl-Pyridinium and Quinolinium Cations**

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Silylium ions are amongst the most powerful Lewis acids and are legitimately referred to as Lewis superacids. Upon stabilization by a Lewis base, their high reactivity can be modulated and controlled, opening rooms for various synthetic applications. A previous study by the Landais group has shown that stereochemical information at silicon could be maintained in silyloxonium ions bearing chiral backbones.<sup>[1]</sup> As part of my Ph. D., we became interested in understanding whether one could synthesize a Lewis base-stabilized silylium ion with only Si-centered chirality while maintaining its configurational stability. We thus embarked on a journey investigating the stability of strained silyl-pyridinium and silyl-quinolinium cations, starting from the synthesis of enantiopure silane precursors, to the generation of the corresponding silylium ions and their characterization by multinuclear NMR and X-ray spectroscopies as well as DFT studies.<sup>[2]</sup> The chiral memory at the silicon centre was eventually established and allowed to formulate a plausible hypothesis regarding the configurational stability of these silyl cations.



References :

[1] Ducos, P., Liautard, V., Robert, F., Landais, Y., *Chem. Eur. J.* **2015**, *21*, 11573-11578, [10.1002/chem.201501987].



[2] Fernandes, A., Laye, C., Pramanik, S., Palmeira, D., Pekel, O. O., Massip, S., Schmidtmann, M., Muller, T., Robert, F., Landais, Y., *J. Am. Chem. Soc.* **2020**, *142*, 564-572, [10.1021/jacs.9b11704].