Supplementary information for

Tethered cationic alkaline earth – olefin complexes

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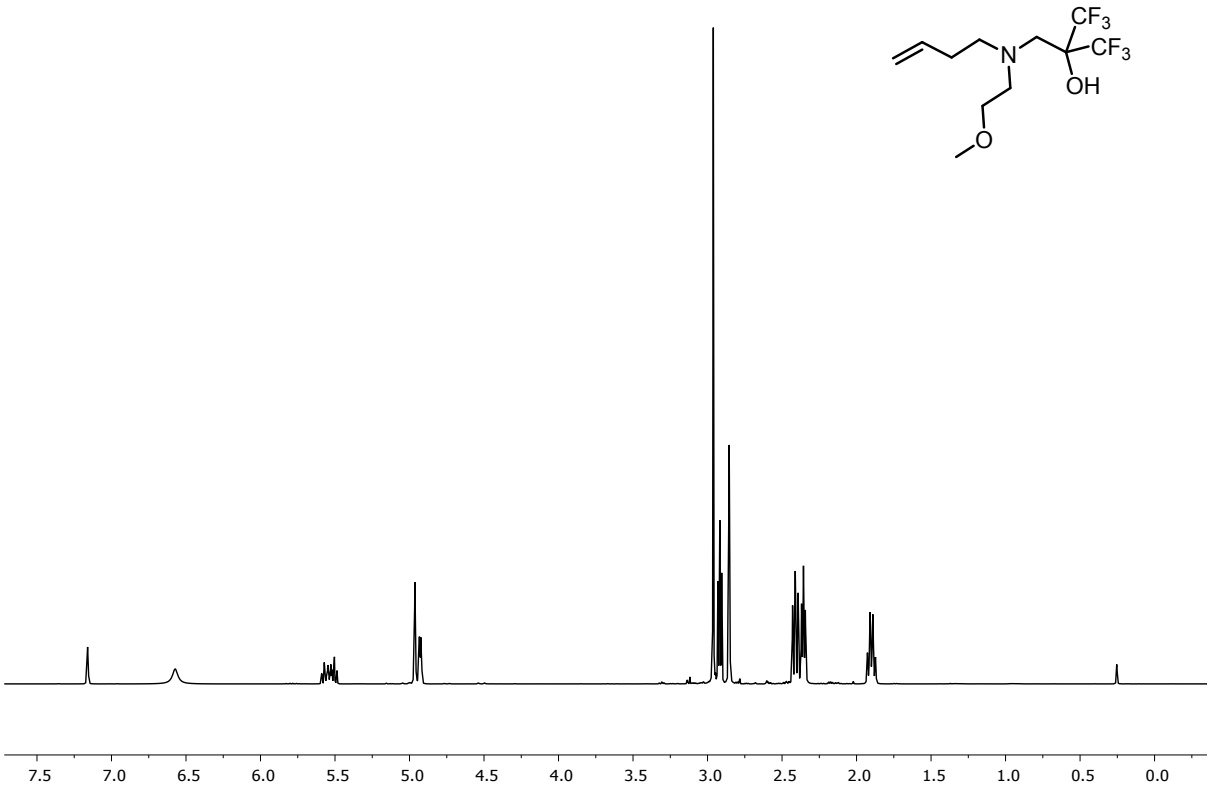


Figure S1. ^{1}H NMR spectrum (400.13 MHz) of $\{RO^F\}H$ at 298 K in benzene-d_6.

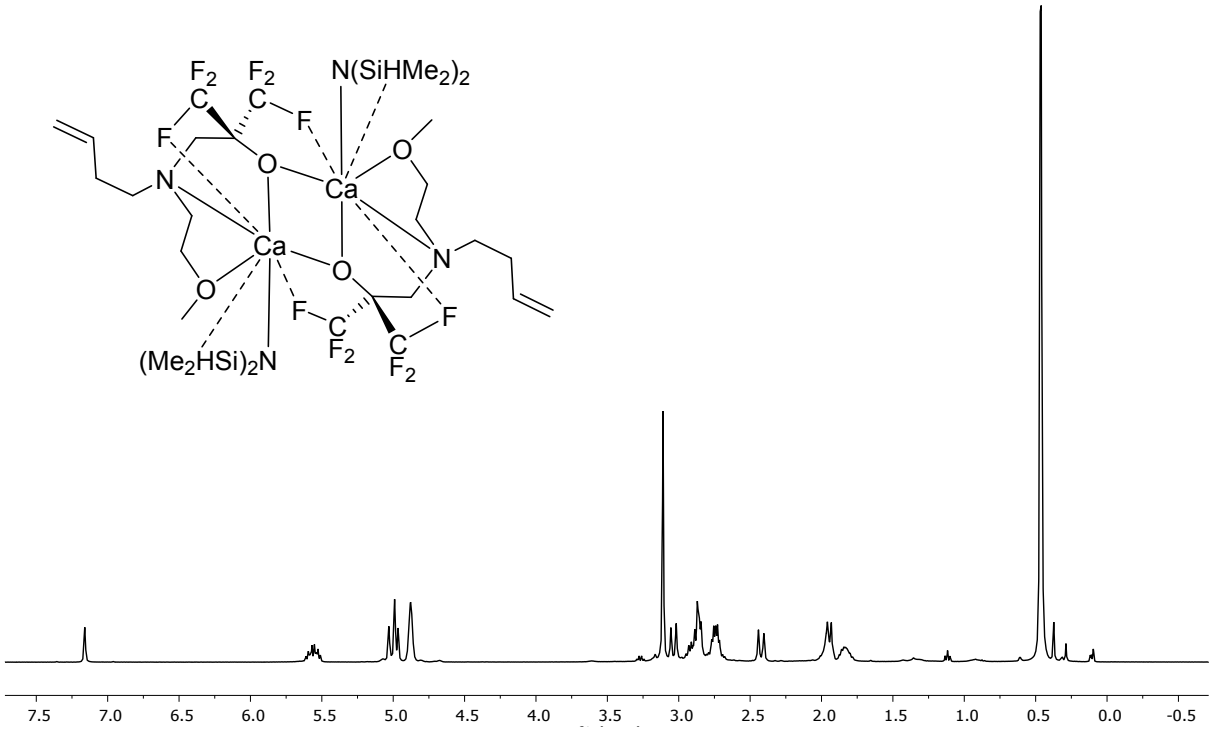


Figure S2. ^{1}H NMR spectrum (400.13 MHz) of [{μ^{2}-RO^{F}}CaN(SiMe$_2$H)$_2$]$_2$ (**1**) at 298 K in C_6D_6.

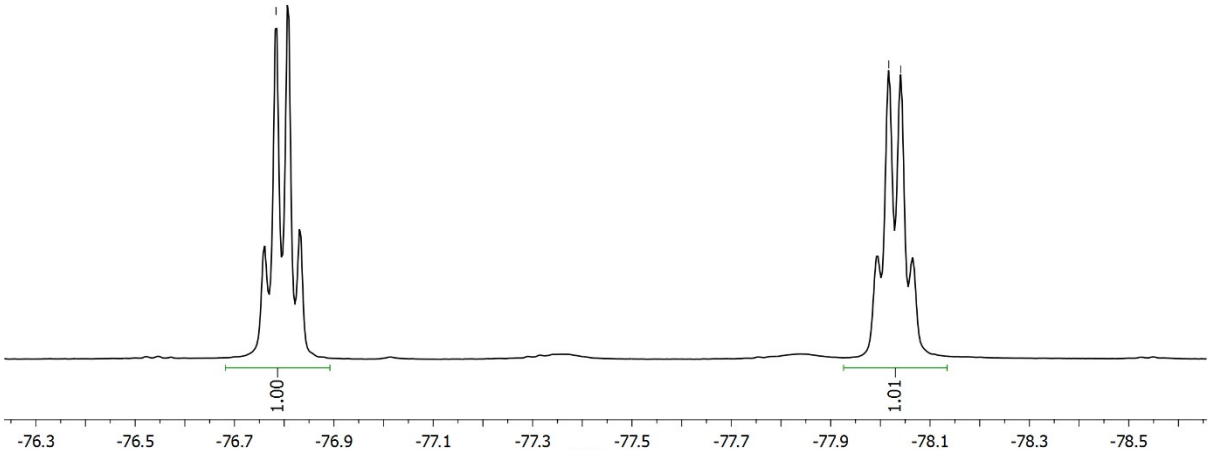


Figure S3. ^{19}F NMR spectrum (376.49 MHz) of [{μ^{2}-RO^{F}}CaN(SiMe$_2$H)$_2$]$_2$ (**1**) at 298 K in C_6D_6.

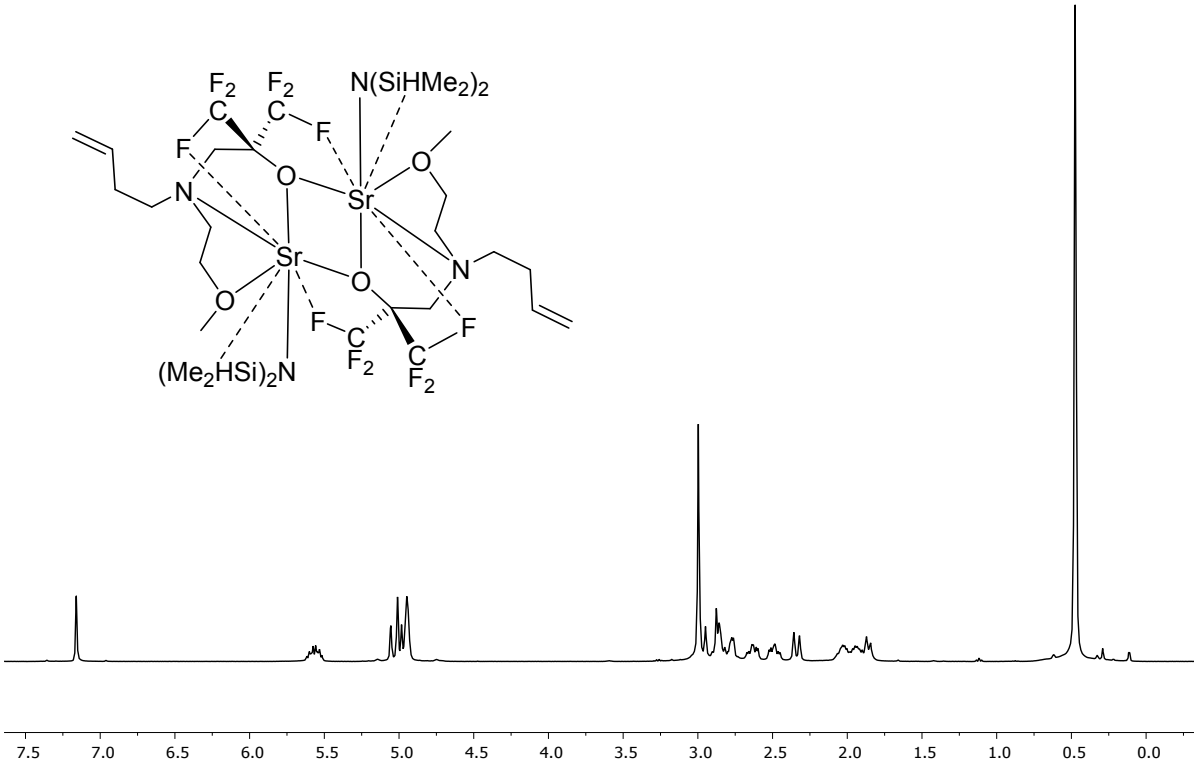


Figure S4. ^{1}H NMR spectrum (400.13 MHz) of [{μ^{2}-RO^{F}}SrN(SiMe$_2$H)$_2$]$_2$ (**2**) at 298 K in C_6D_6.

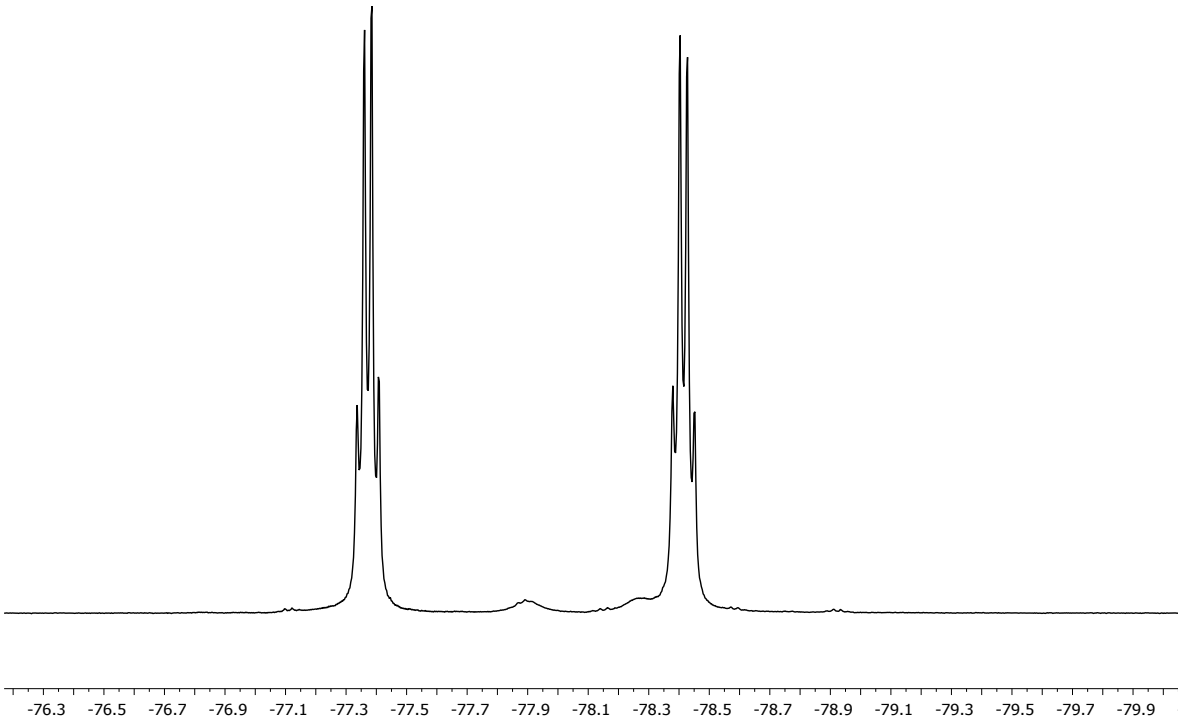


Figure S5. ^{19}F NMR spectrum (376.49 MHz) of [{μ^{2}-RO^{F}}SrN(SiMe$_2$H)$_2$]$_2$ (**2**) at 298 K in C_6D_6.

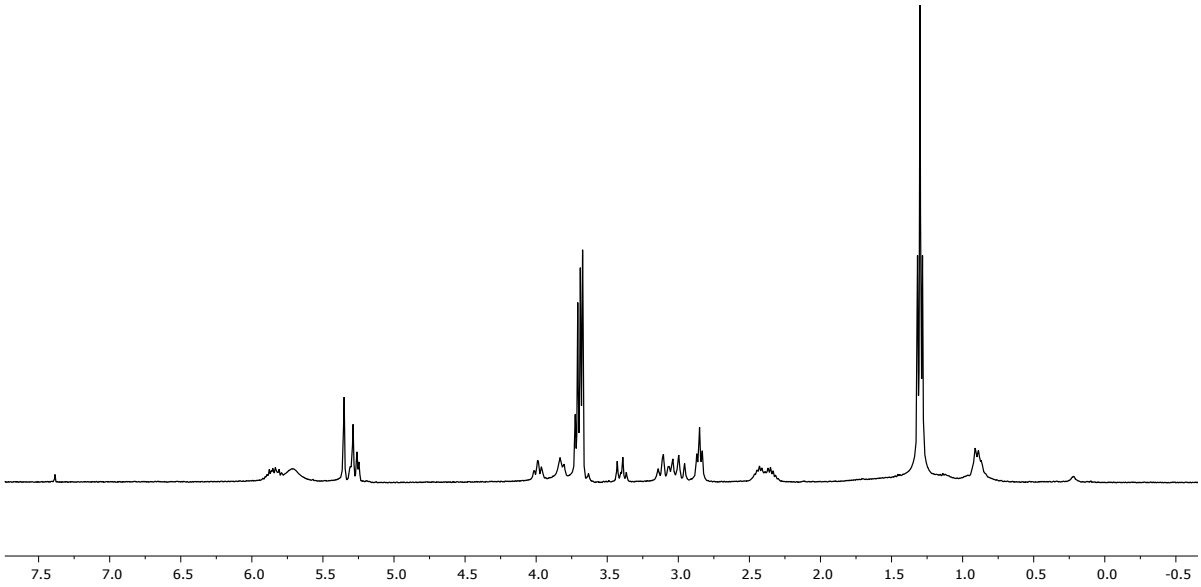
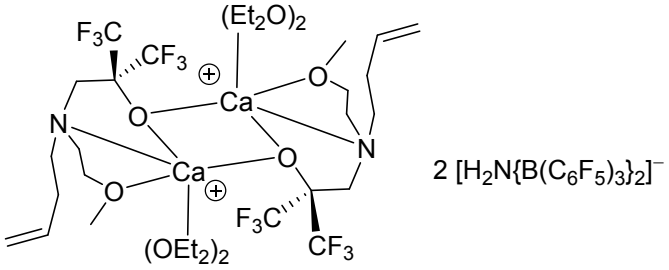


Figure S6. ^{1}H NMR spectrum (400.13 MHz) of $[(\{\mu^2\text{-}RO^F\}Ca\bullet(Et_2O)_2)_2]^{2+}.2[H_2N\{B(C_6F_5)_3\}_2]^-$ (**3a**) at 298 K in dichloromethane-d_2.



2 $[H_2N\{B(C_6F_5)_3\}_2]^-$

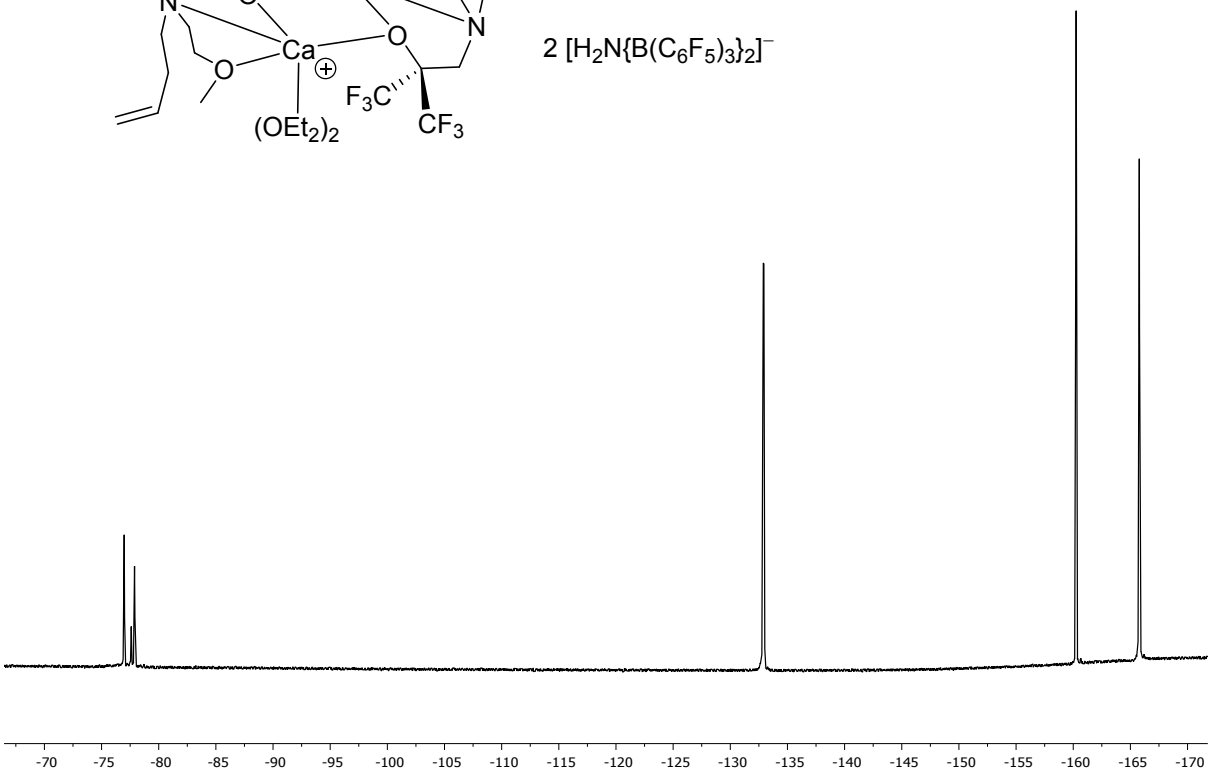


Figure S7. ^{19}F NMR spectrum (376.47 MHz) of $[(\{\mu^2\text{-}RO^F\}Ca\bullet(Et_2O)_2)_2]^{2+}.2[H_2N\{B(C_6F_5)_3\}_2]^-$ (**3a**) at 298 K in dichloromethane-d_2.

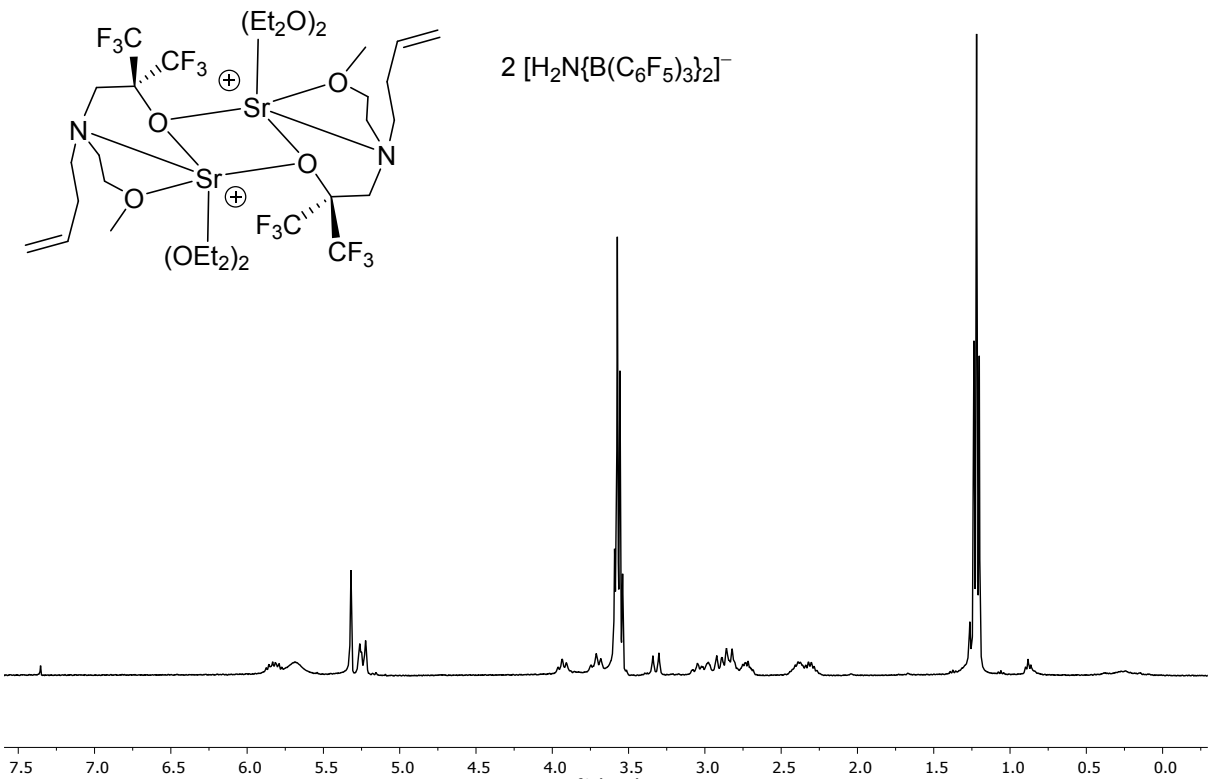


Figure S8. ^{1}H NMR spectrum (400.13 MHz) of $[(\{\mu^2\text{-}RO^F\}Sr\bullet(Et_2O)_2)_2]^{2+}.2[H_2N\{B(C_6F_5)_3\}_2]^-$ (**4a**) at 298 K in dichloromethane-d_2.

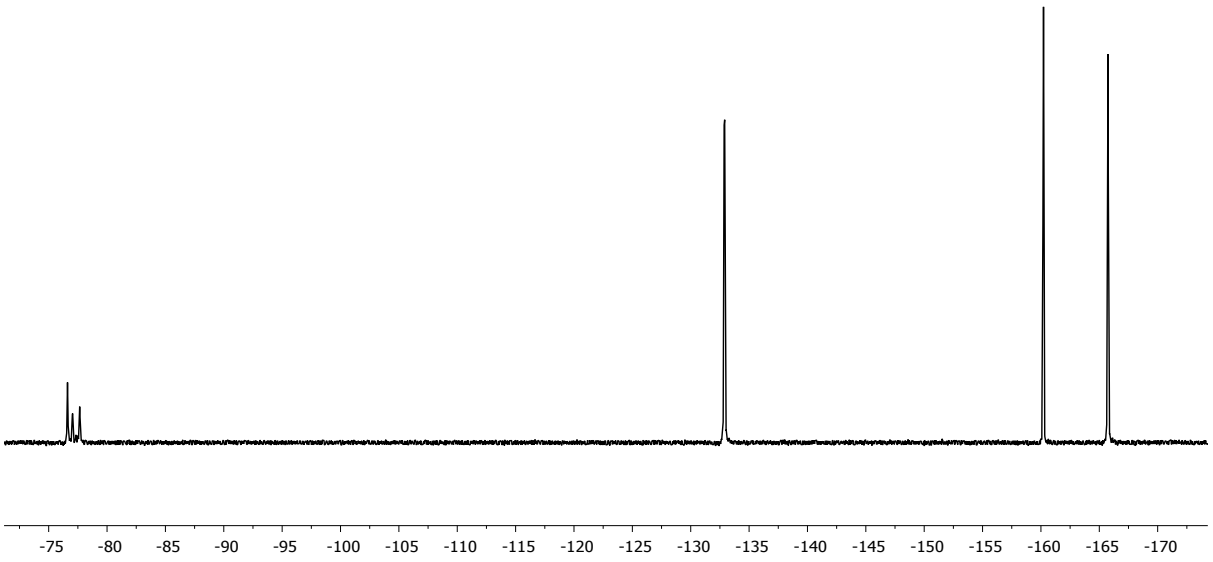


Figure S9. ^{19}F NMR spectrum (376.47 MHz) of $[(\{\mu^2\text{-}RO^F\}Sr\bullet(Et_2O)_2)_2]^{2+}.2[H_2N\{B(C_6F_5)_3\}_2]^-$ (**4a**) at 298 K in dichloromethane-d_2.

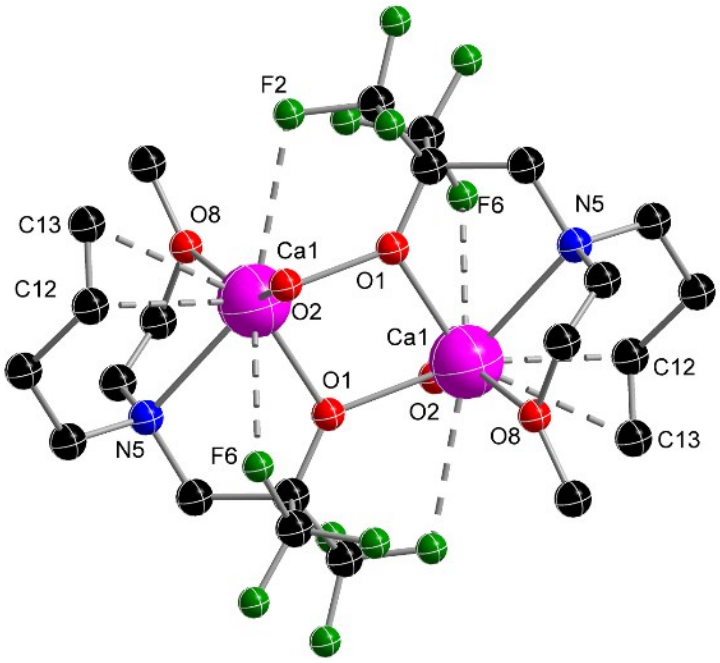


Figure S10. Molecular structures of the cation in $[(\{\mu^2\text{-}RO^F\}Ca\bullet(H_2O))_2]^{2+}.2[H_2N\{B(C_6F_5)_3\}_2]^-$, obtained by recrystallisation of **3a**. The anions and hydrogen atoms have been omitted for clarity purposes. Metric parameters are not given due to the poor quality of the crystal structure.

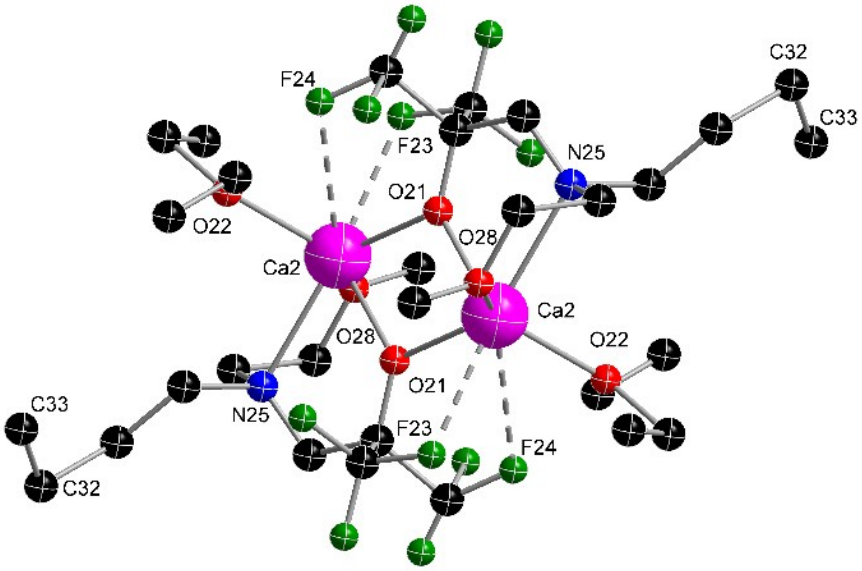


Figure S11. Molecular structures of the cation in $[(\{\mu^2\text{-}RO^F\}Ca\bullet(Et_2O))_2]^{2+}.2[H_2N\{B(C_6F_5)_3\}_2]^-$, obtained by recrystallisation of **3a**. The anions and hydrogen atoms have been omitted for clarity purposes. Metric parameters are not given due to the poor quality of the crystal structure.