

Supporting Information

Tetraethylene glycol adducts of alkaline earth halides

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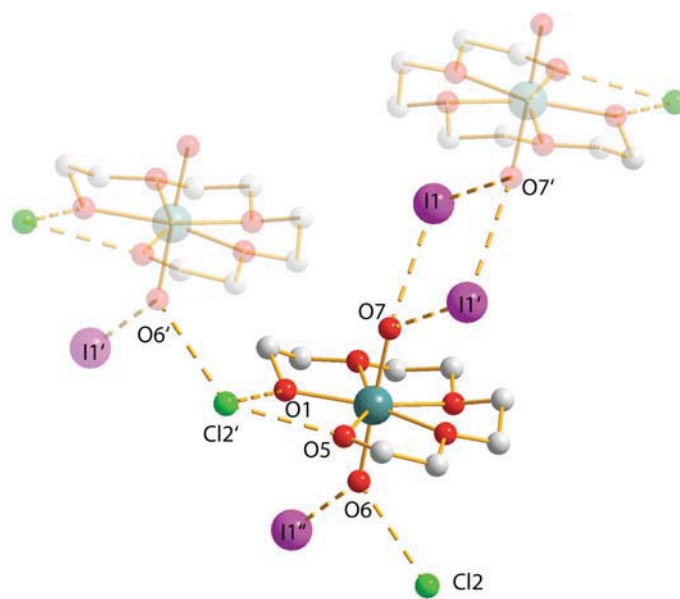


Figure S1. The hydrogen-bonding system of **1**.

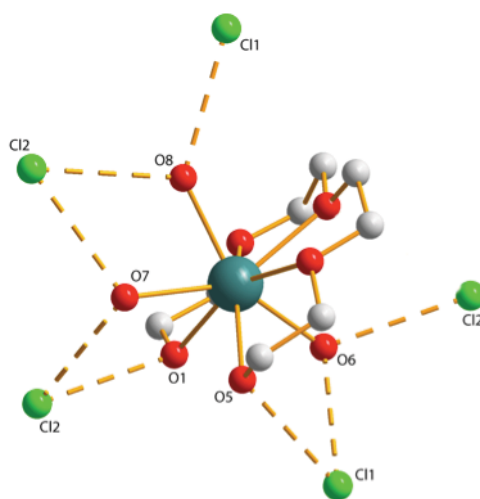


Figure S2. H-bonding of the water molecules and hydroxyl groups to chloride atoms in compound **2**.

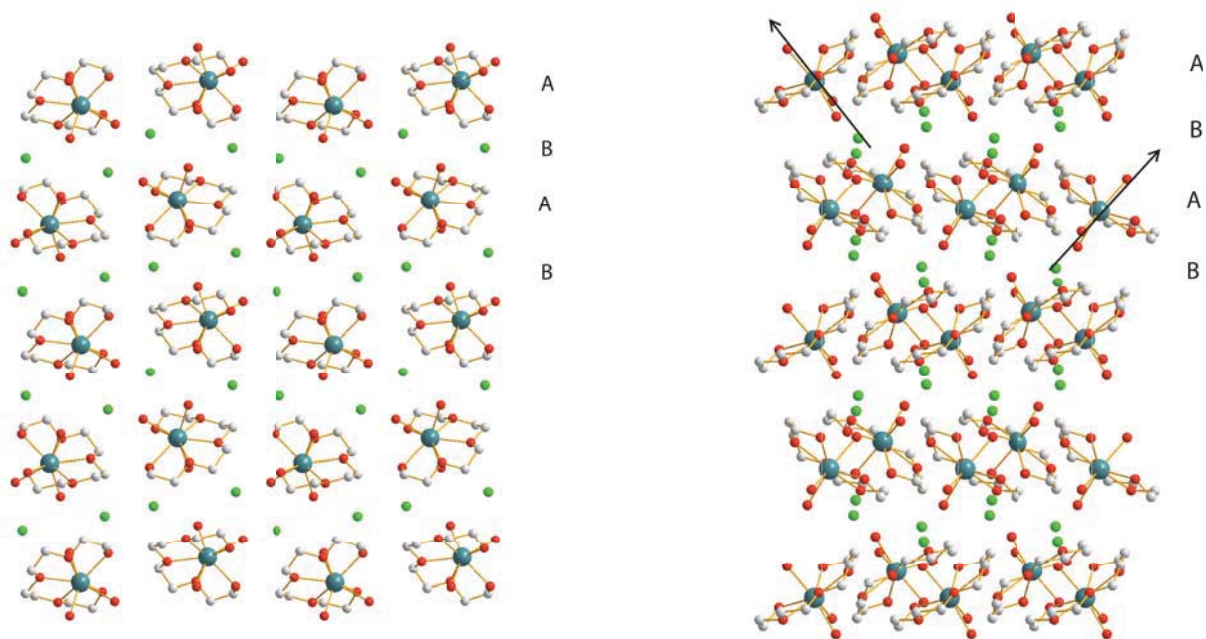


Figure S3. Packing of **2** in *x*-direction and *y*-direction.

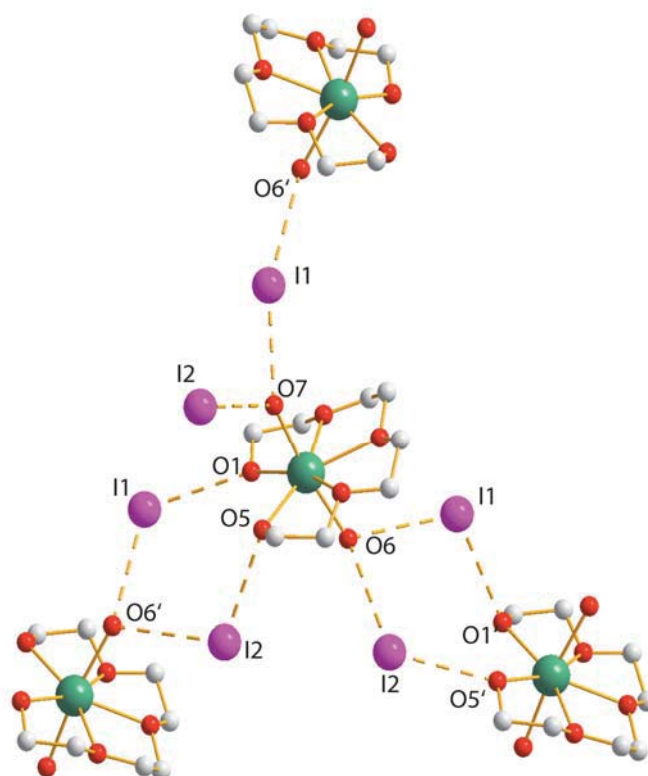


Figure S4. H-Bond system of **3**.

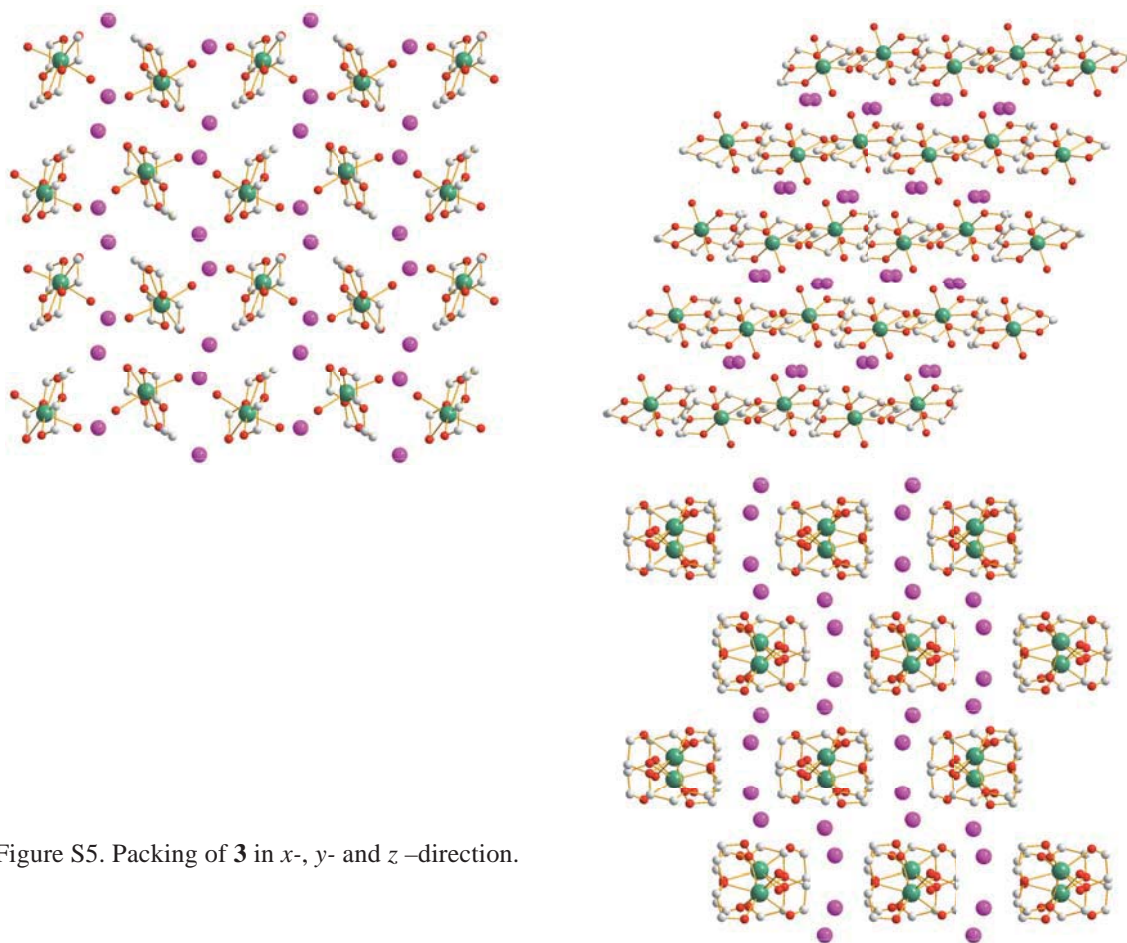


Figure S5. Packing of **3** in x -, y - and z -direction.

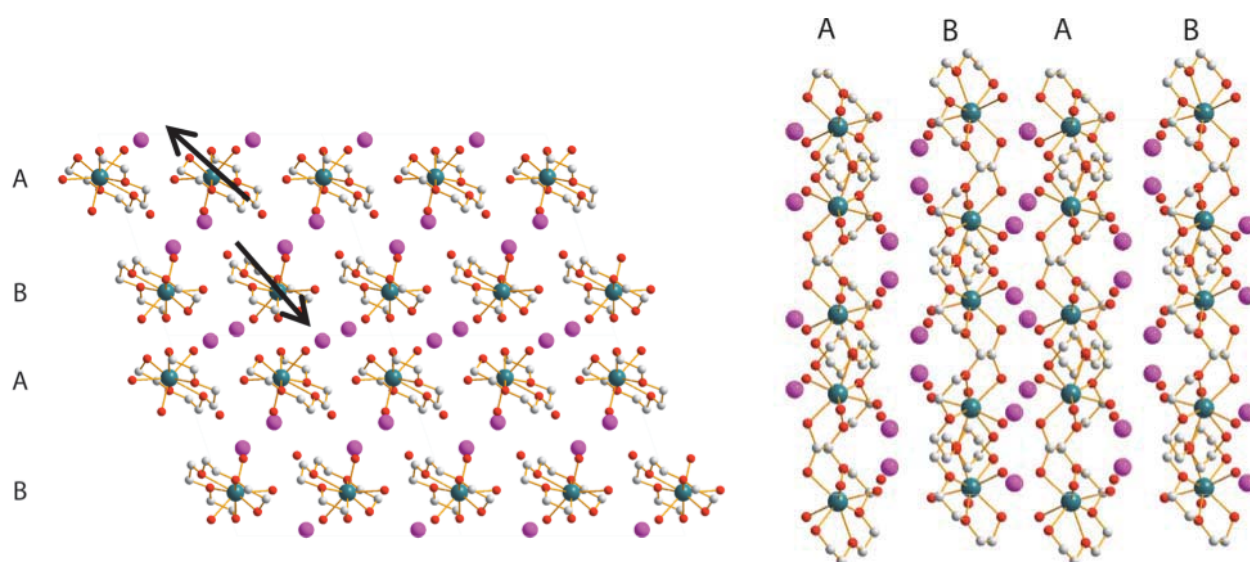


Figure S6. Packing of **4** along y - and z -direction, the arrows give the direction of the opening of the glycol chain.

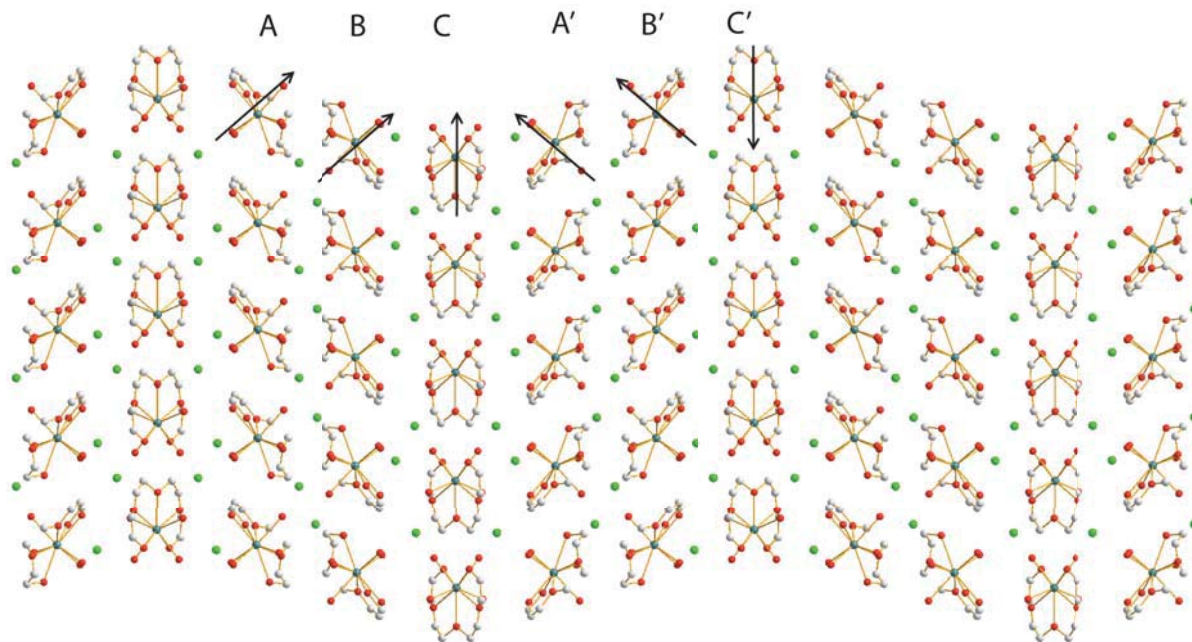


Figure S7a. Packing of **6** in *x*-direction. The little black arrows help for observing the orientation of the molecules. In A the Sr1-complex points right up, in B the complexes face at first glance to the same direction but they are rotated by 180°. In row C the complexes of Sr2 have two water molecules pointing up. In row A' and B' two rows of Sr1 can be observed but this time pointing upwards to the left. In row C' both water molecules point to the bottom.

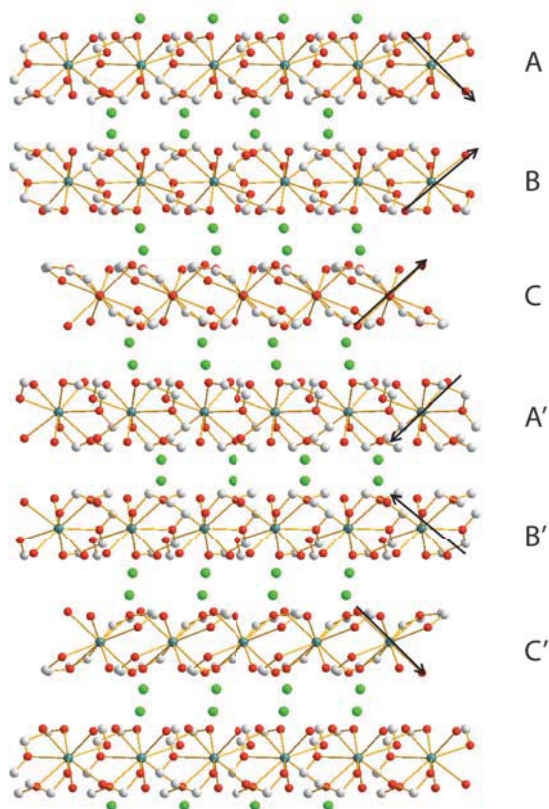


Figure S7b. Packing of **6** in *y*-direction. The little black arrows help for observing the orientation of the molecules.

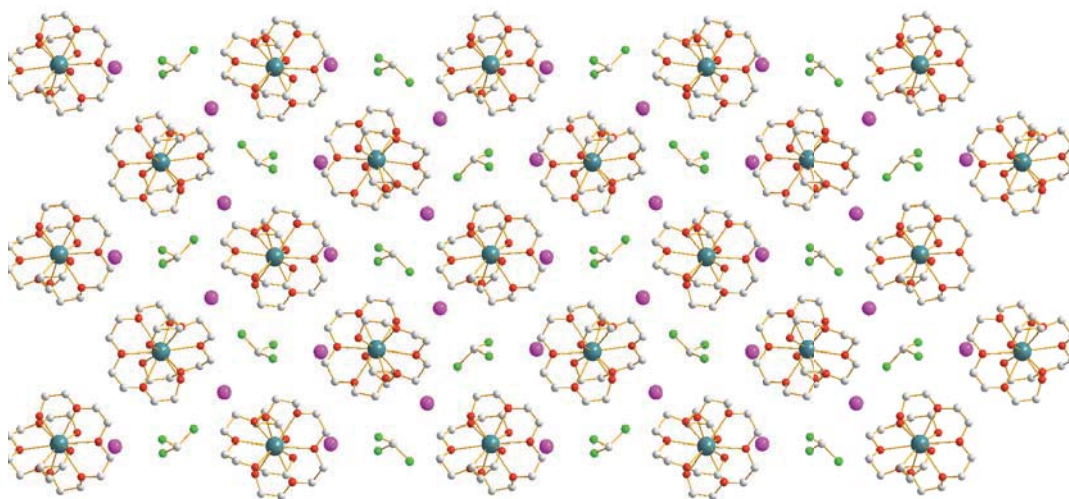


Figure S8. Packing in x -direction of **7**.

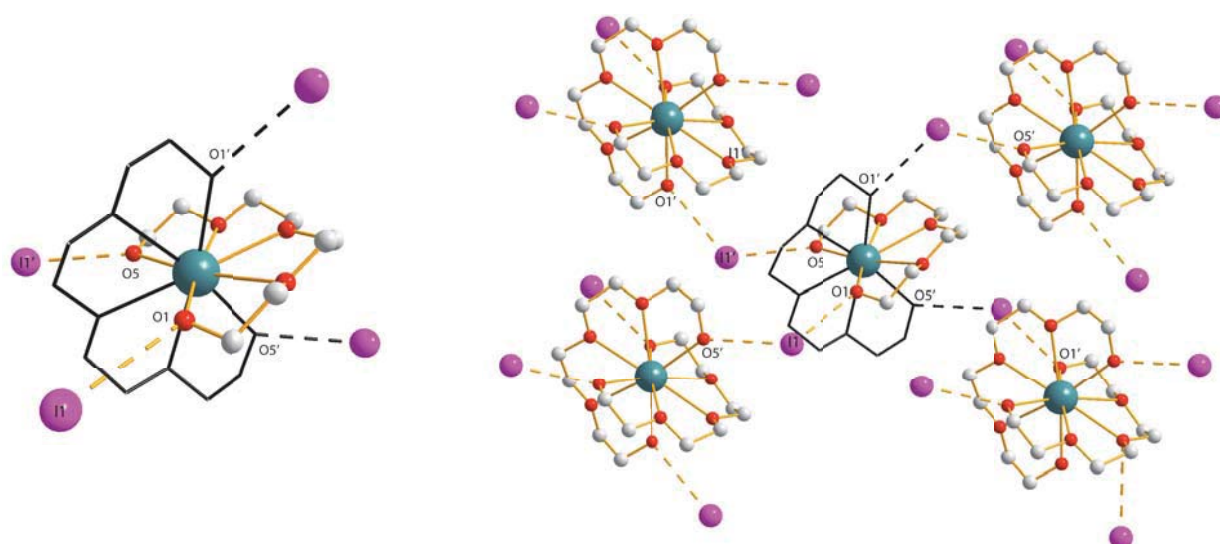


Figure S9. H-bonding system of **8**.

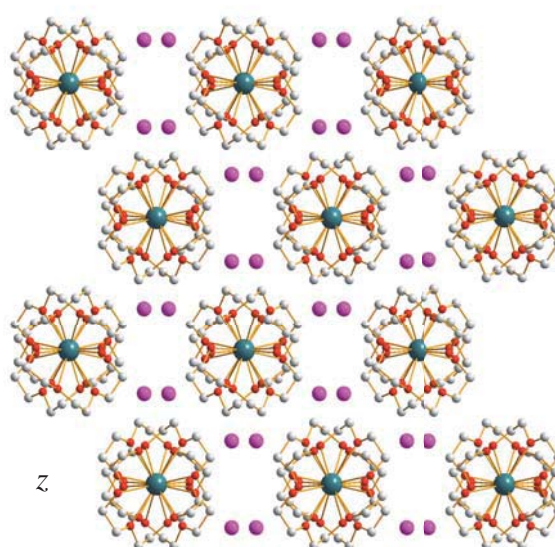


Figure S10. Packing of **10** in z -direction.

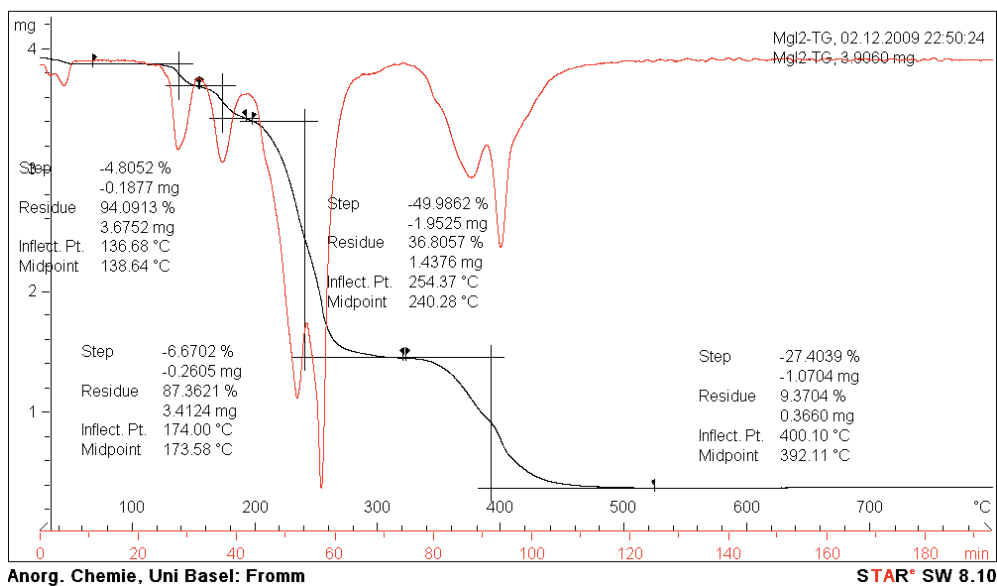


Figure S11. TGA of compound **1**. The annealing of **1** at 400°C in the oven gave a white product, which turned out to be MgCO₃. In MOCVD, compound **1** evaporates at 120°C. The TGA-analysis shows a decomposition of complex **1** at around 450°C to MgCO₃ and no final decomposition to MgO is observed till 800°C (figure S11, supplemental material).

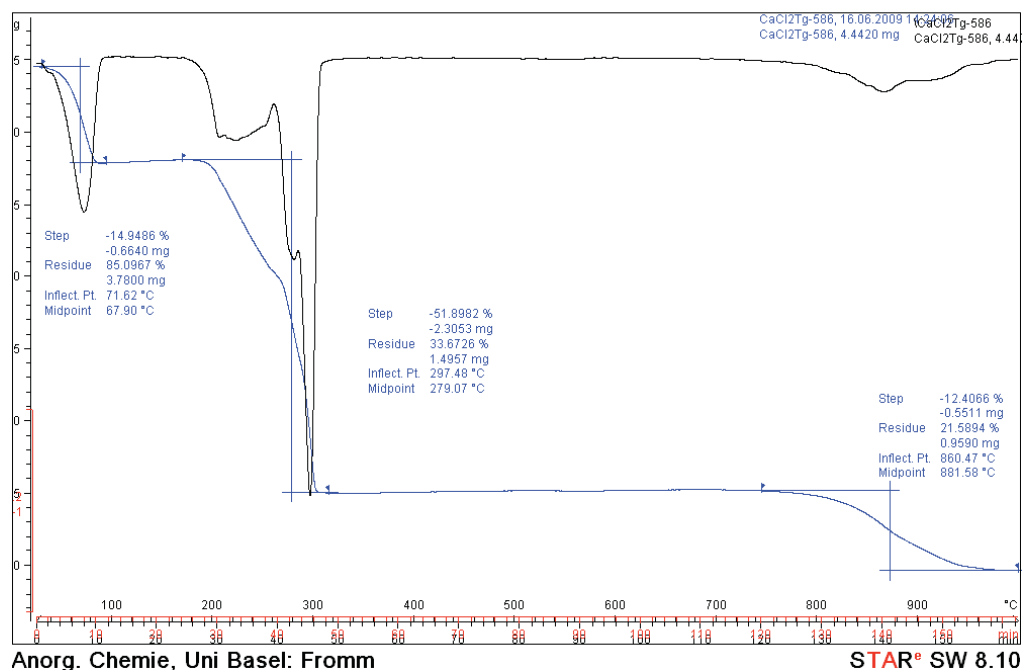


Figure S12. TGA of compound **2**. Compound **2** was heated in air at 400°C in air for two days. PXRD shows that the main combustion product was a mixture of CaO and CaCO₃, but also a small fraction calcium chloride tetrahydrate has formed. In MOCVD **2** evaporates best between 110°C and 150°C, but only with a rate of 0.4 kÅ/s at 10⁻⁵ mbar. In total, a layer of around 50 nm could be grown. A few milligrams of **2** were heated in TGA in air to 900°C. After a first solvent loss at (71°C), the complex decomposes and forms CaCO₃ (300°C). In the last step, at 850°C, CaO is obtained.

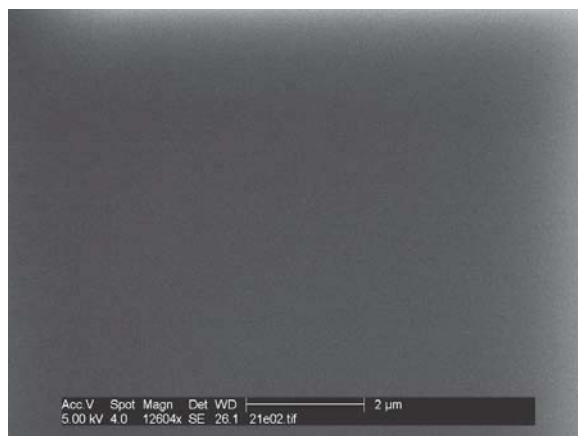


Figure S13. SEM picture of the film of compound **1**.