

Supporting Information:

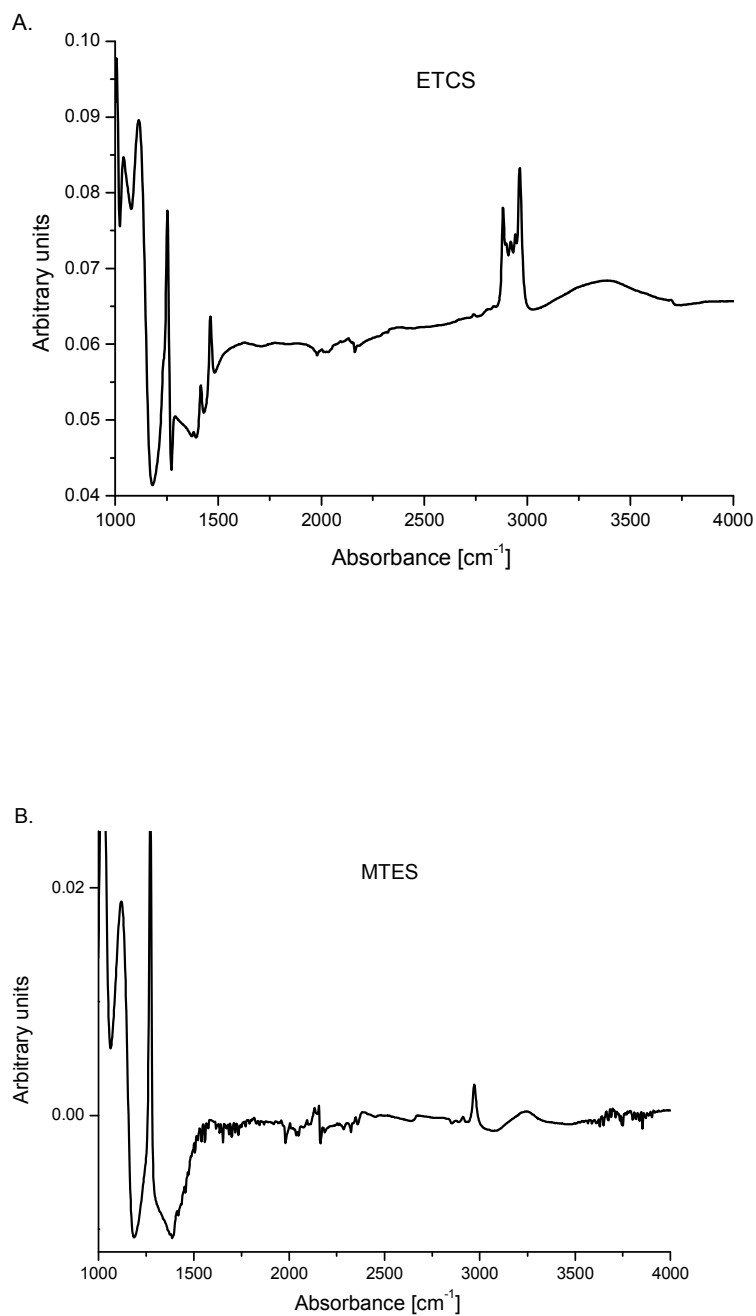


Figure S1. ATR-IR spectra of a coated glass substrate with **(A)** ETCS and **(B)** MTES used as precursors.

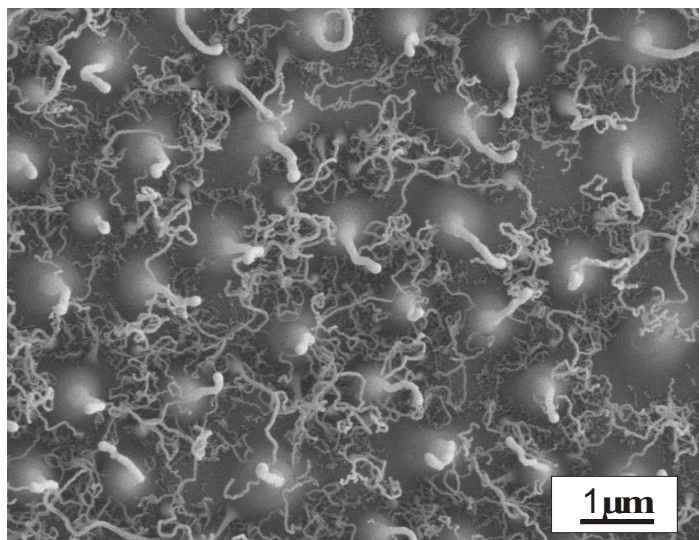


Figure S2. SEM image of mixed morphology consisting of nanofilaments and tapered nanotubes when 4.2 mmol of water is present in the reaction

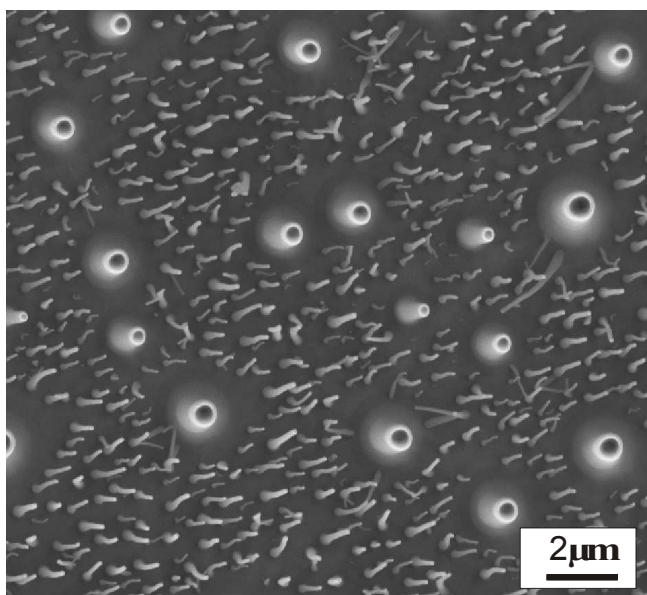


Figure S3. SEM image of mixed morphology consisting of tapered nanotubes and microtubes when 5 mmol of water is present in the reaction

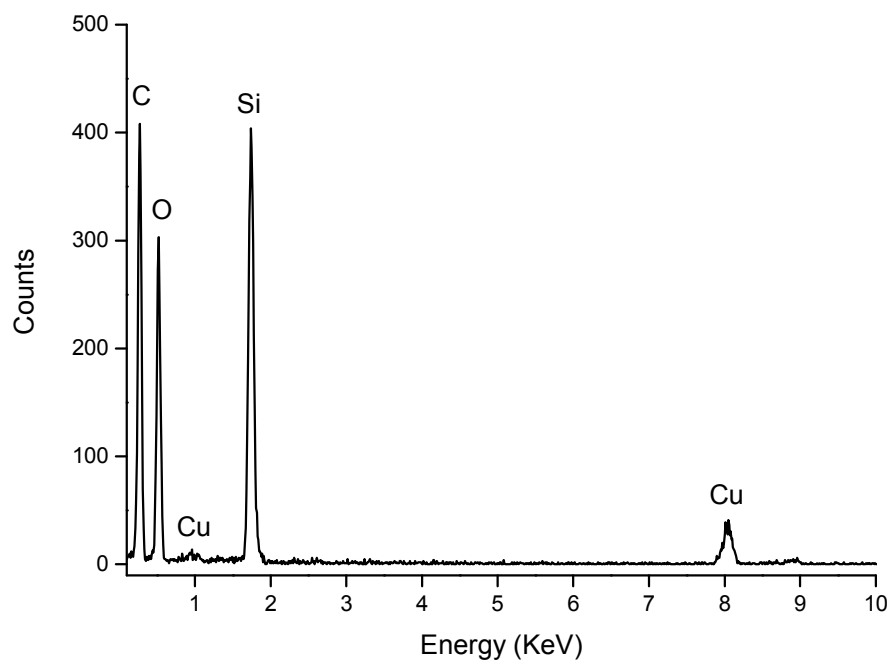


Figure S4. EDX spectra of polysiloxane layer formed after 10 seconds of the reaction when ETCS is used as a precursor

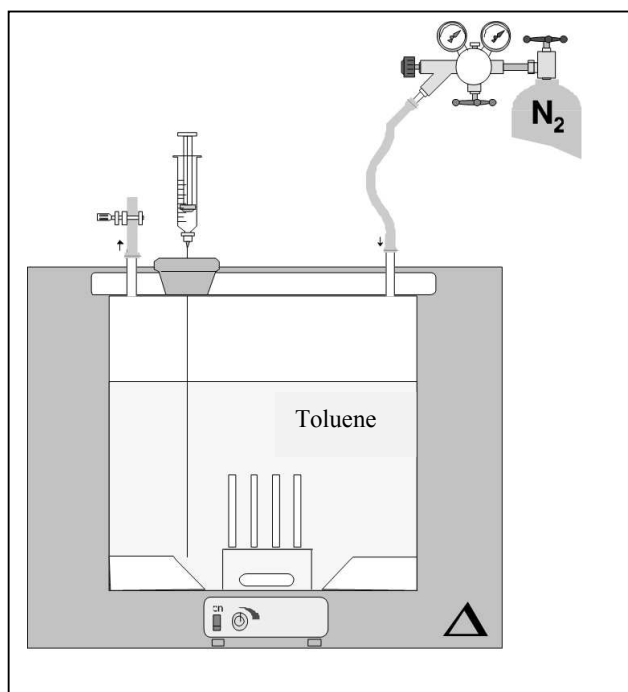


Figure S5. Setup of the liquid phase method for the production of polysiloxane nanotubes and nanofilaments.

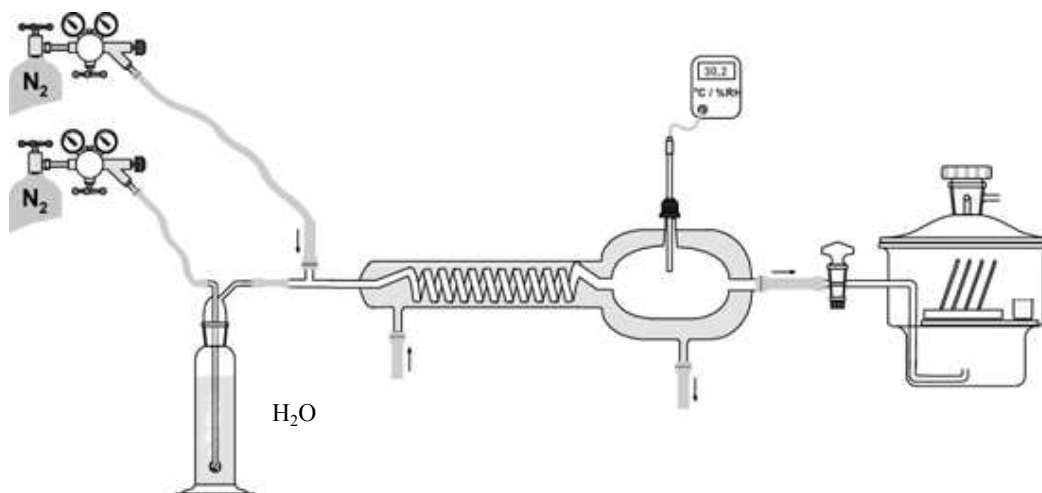


Figure S6. Setup of the chemical vapor deposition (CVD) method for the production of polysiloxane nanotubes and nanofilaments.

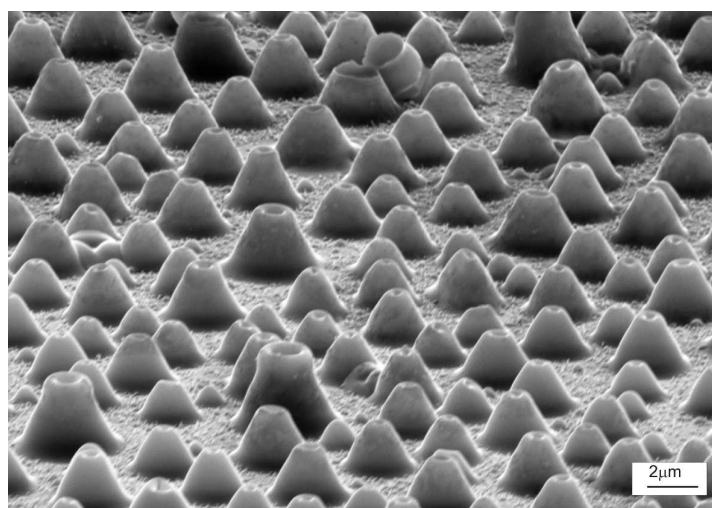


Figure S7. SEM image of microtubes, side projection

Humidity measurements:

The experiments were repeated several times with the same setup. A hygrometer (E+E Elektronik) was used to measure the relative humidity in the reaction chamber. These values were crosschecked by using a second relative humidity sensor. Both hygrometers were calibrated with a reference-sensor. If the relative humidity (RH) in gas phase was in the range between 0 and 90% relative error of instrument was by manufacturer $(1.3\% + 0.3\% \cdot \text{RH})$. For the determination of the humidity in solvent-phase coating a Karl-Fischer Coloumeter was used. 1ml of toluene was inserted with a syringe to the Coloumeter and measured with a drift below $3\mu\text{g}/\text{min}$.