

Supplemental page

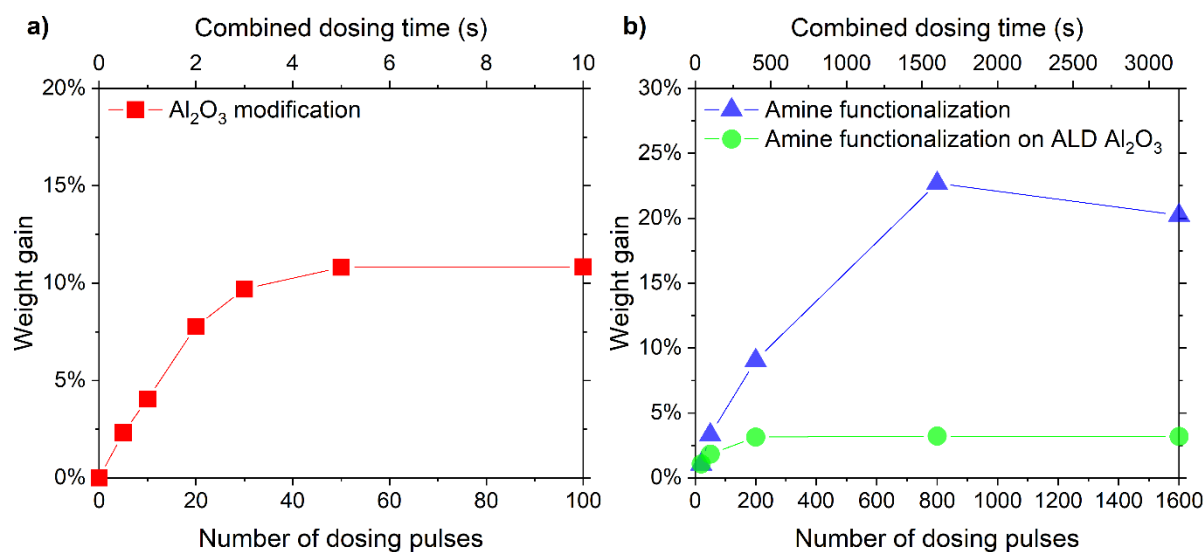


Figure 1: Saturation curves of (a) ALD Al_2O_3 -modified carbon fibers and (b) amine functionalization introduced either directly on the carbon fibers or after Al_2O_3 modification. Measured values are subjected to an experimental error of $\pm 0.5\%$.

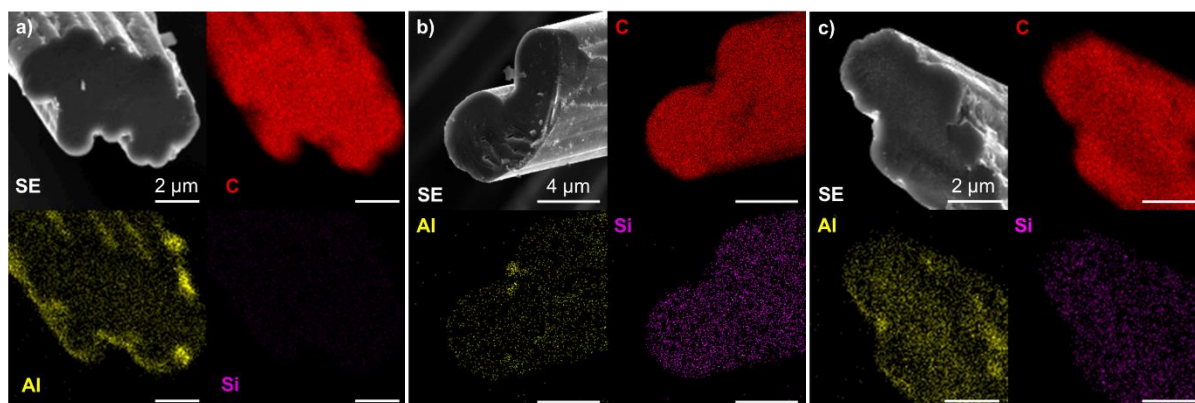


Figure 2: EDX-mapping of (a) pristine carbon fibers and carbon fibers modified by (b) amine functionalization and (c) ALD Al_2O_3 and amine functionalization.

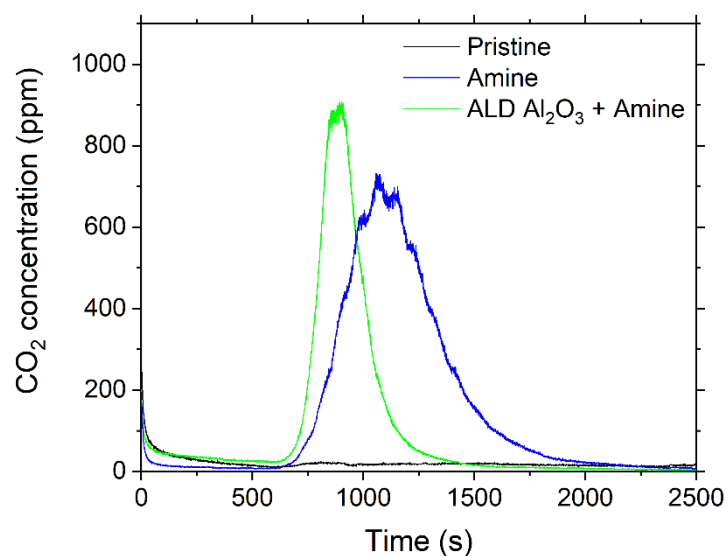


Figure 3: CO₂ captured by amine-functionalized and ALD Al_2O_3 plus amine-functionalized carbon fiber monitored by mass spectrometry after exposure of the samples to humidified synthetic air and release of CO₂ upon heating the carbon fiber samples in an isolated compartment followed by a N₂ purge.