

Supplementary Information

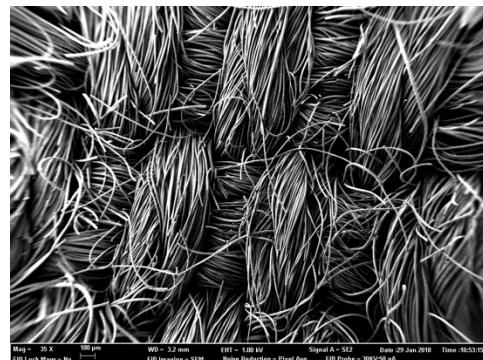


Figure S1: FESEM image of the ACF cloth.

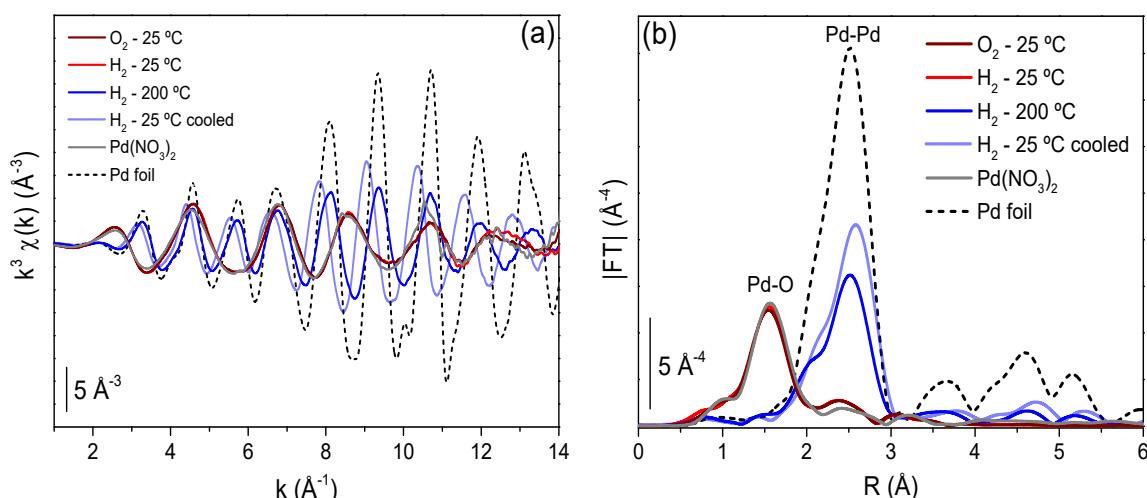


Figure S2. k^3 -weighted, phase-uncorrected $k^3 \chi(k)$ functions (a) and $|\text{FT}|$ of the k^3 -weighted EXAFS spectra (b) of 5% Pd/ACF and Pd-references during catalyst preparation

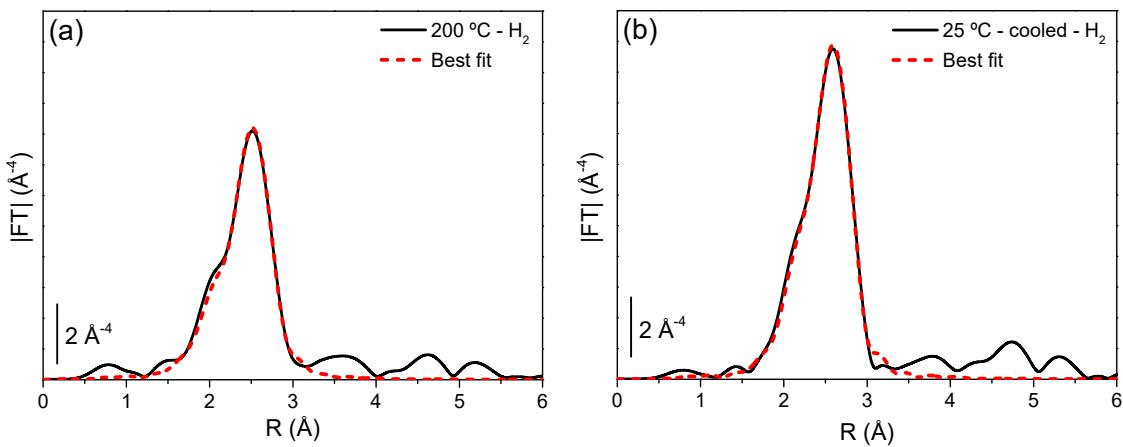


Figure S3: Experimental (black full line) $|FT|$ of the k^3 -weighted $\chi(k)$ function spectra and best fit (dashed red line) of 5% Pd-ACF during reduction in H_2 at 200 °C (a) and after reduction at 25 °C (b).

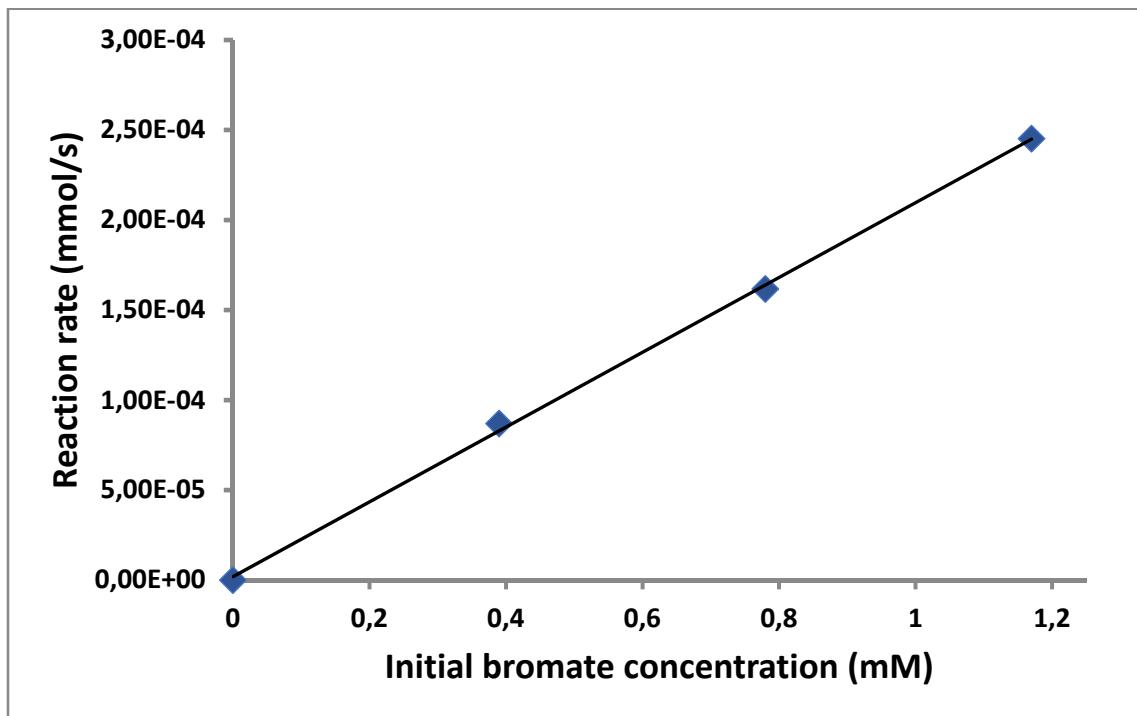


Figure S4. Reaction rate (expressed as mmol of reacted bromates per second) at different initial bromate concentration (0.6 L, 0.5 g of 1wt.%Pd/ACF catalyst, RT, atmospheric pressure).

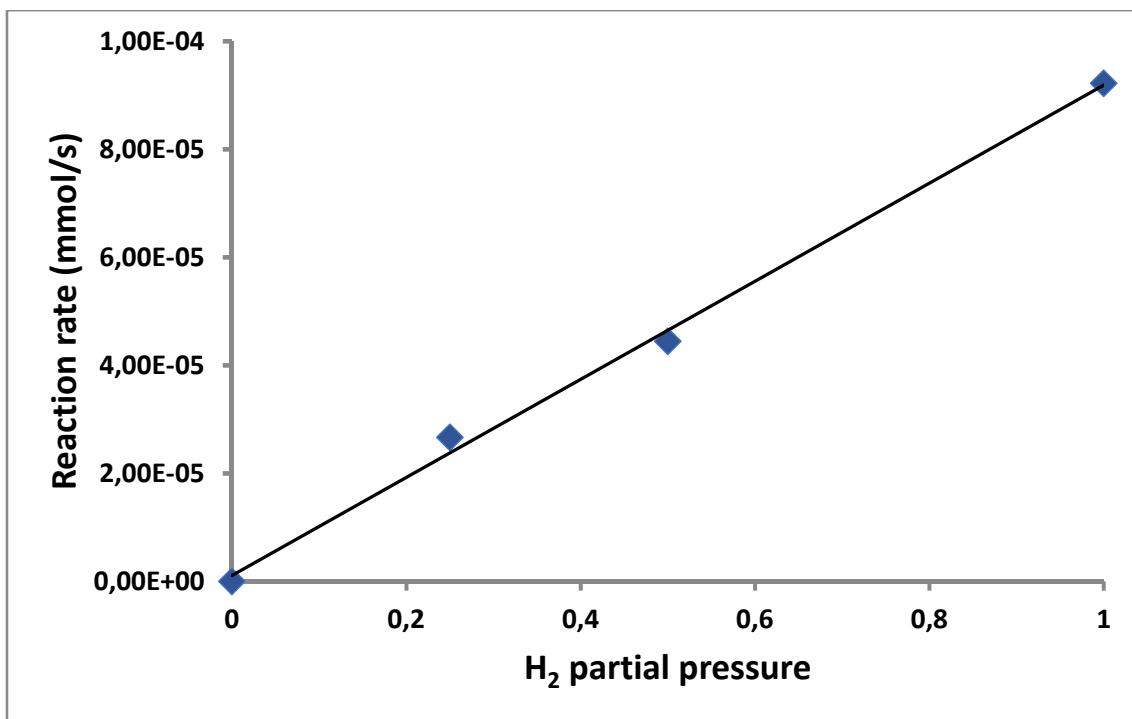


Figure S5. Reaction rate (expressed as mmol of reacted bromates per second) at different hydrogen partial pressure (0.6 L, 50 ppm of BrO_3^- , 0.5 g of 1wt.%Pd/ACF catalyst, RT, atmospheric pressure).

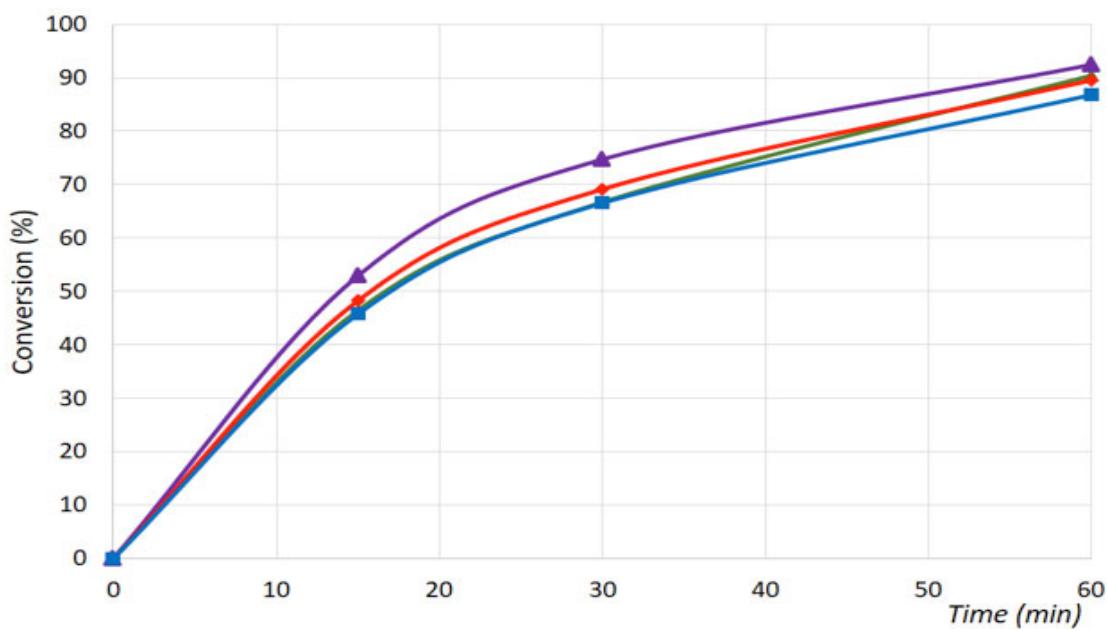


Figure S6. Stability of the catalysts 1wt.%Pd/ACF after successive reactions: 1st use (♦), 2nd use (▲), 3rd use (●), 4th use (■), (0.6L, 50 ppm of BrO_3^- , 0.5 g catalyst, RT, atmospheric pressure)