## Supplemental Data for the CO<sub>x</sub> Thermal Oxidation Process for CO<sub>2</sub> Capture

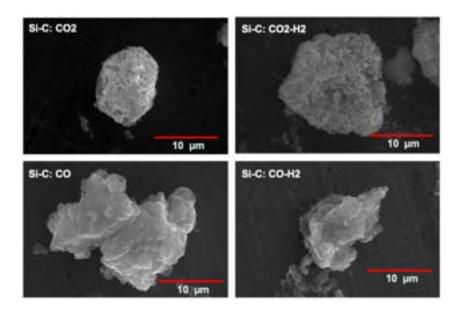


Figure 1: SEM images for the samples produced from each of the four varied gas compositions.

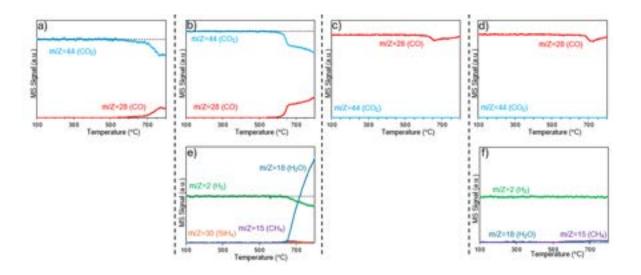


Figure 2: MS (Mass Spectrometry) data for the gas composition leaving the reactor under each of the four different gas compositions. The feed gas compositions are a)  $CO_2$ , b)  $CO_2 + H_2$ , c)  $CO_3$ , and d)  $CO_3 + H_3$ . Not shown is the argon gas used at a similar flow rate for all experiments in order to establish a standard by which to compare results.

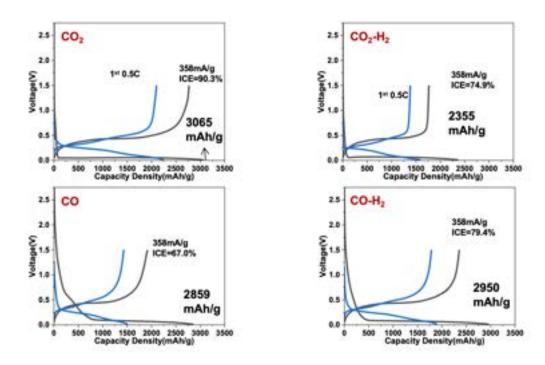


Figure 3: Initial charging data for all four samples. Black is the first charge while blue is the second.

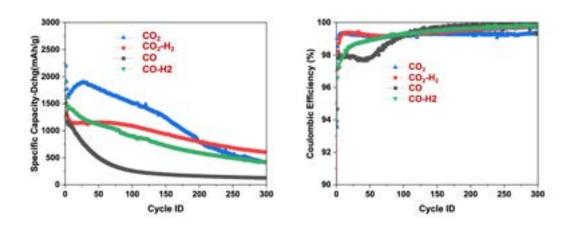


Figure 4: Electrochemical performance for all four samples.