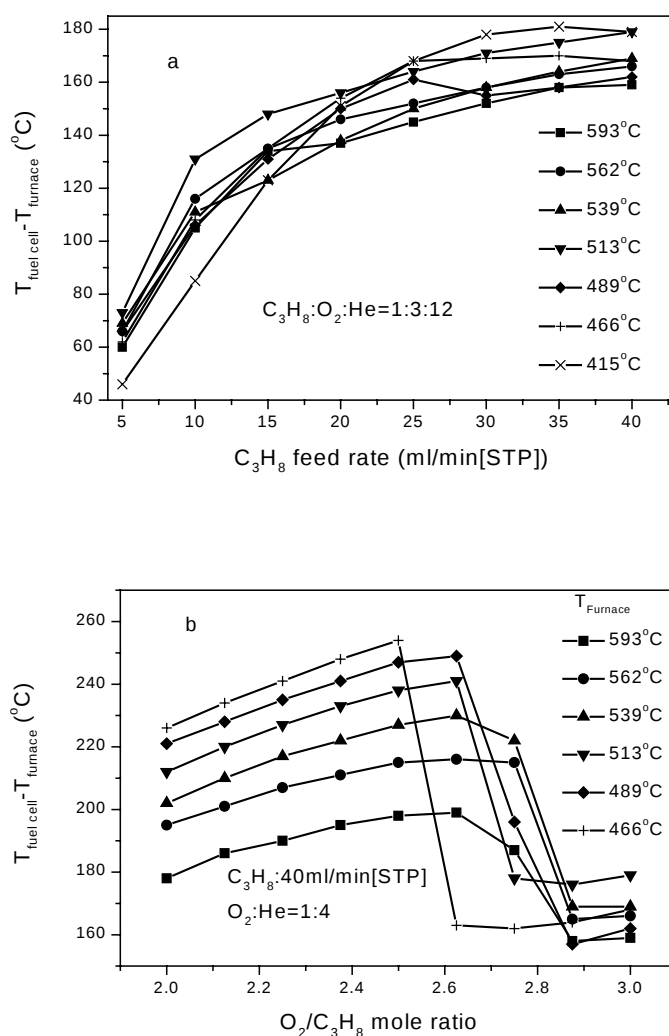




Supplementary Figure. 6 The difference between the fuel cell and furnace set temperatures, as a function of (a) propane feed rate for various furnace set temperatures, and of (b) oxygen to propane molar ratio at high propane feed rates, again, for various furnace set temperatures. An increase in the propane flow rate results in a monotonic increase in the cell temperature, beyond that of the furnace. An increase in the oxygen to propane ratio, towards the stoichiometric value, leads to an increase in cell temperature until the point of gas phase reaction, at which the cell temperature drops to a value closer to that of the furnace. In general, the difference between the cell and furnace temperatures are greatest for low furnace set temperatures, such that the cell temperature is almost independent of furnace temperature. Consequently, single chamber fuel cell performance that is also relatively insensitive to furnace set temperature (Figure 3 of the main text).