

South Dakota School of Mines and Technology  
Department of Materials and Metallurgical Engineering

Met 426/526

Homework 11

1. Construct plot (Excel) of the expected oxygen probe potential in millivolts as a function of wt %C in a steel melt at 1600 °C. The probe is using the Cr/Cr<sub>2</sub>O<sub>3</sub> reference electrode.
  
2. Derive an equation from which one may calculate the Cr/Cr<sub>2</sub>O<sub>3</sub> probe output in millivolts for any [%O] in Fe at any T in the range 1400 °C to 1700 °C.