

Ohio University
Department of Chemical Engineering
ChE-455/ChE-555: Analysis of Electrochemical Systems
Winter Quarter 2009
Homework 4
Due: March 3, 2009

1. A standard hydrogen electrode is placed near an inert electrode where hydrogen is evolving from pH 5 electrolyte. At 25 °C the following potentials are measured with a voltmeter connected between the reference electrode and cathode

i (mA/cm ²)	10	1	0.3	0.1
E_{meas} (V)	-1.17	-1.05	-0.97	-0.92

- a. Calculate the cathodic overpotential for each measurement
- b. Determine a kinetics expression that simulates the experimental data