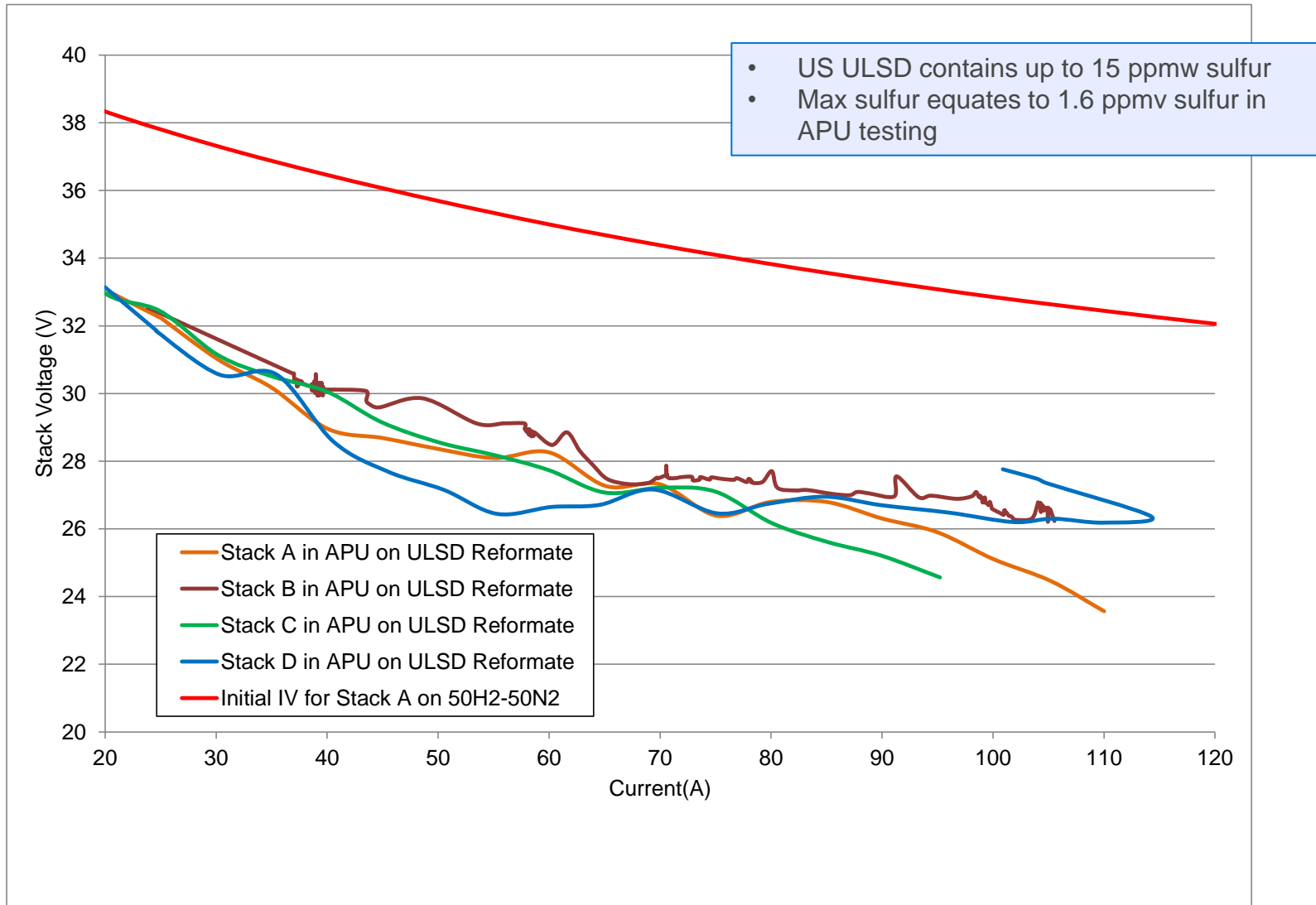


# Effect of Sulfur on SOFC Performance Using Diesel Reformate

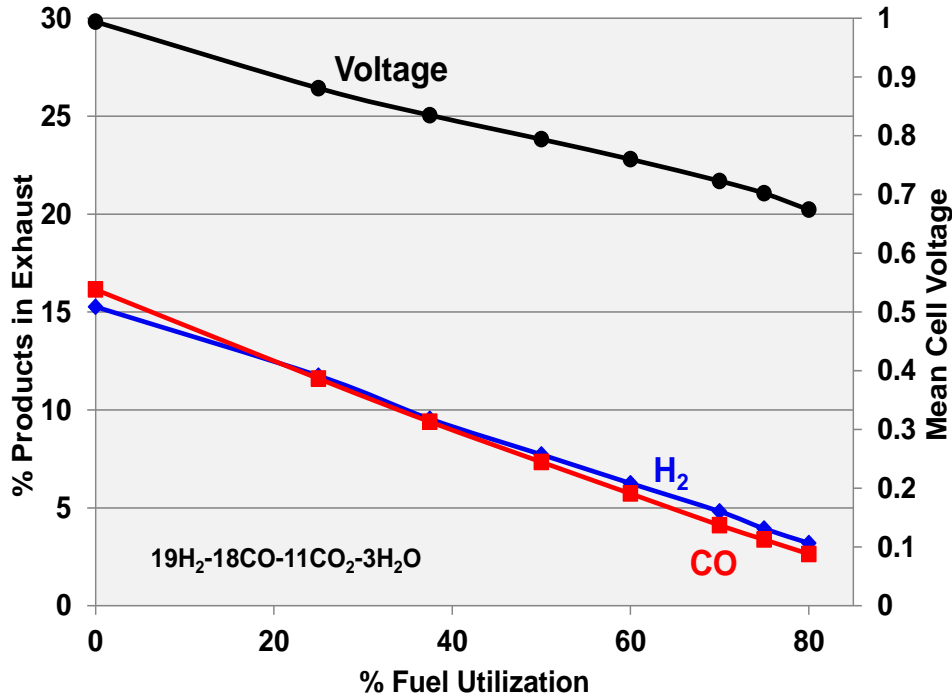
R. Kerr

March 6-7, 2014

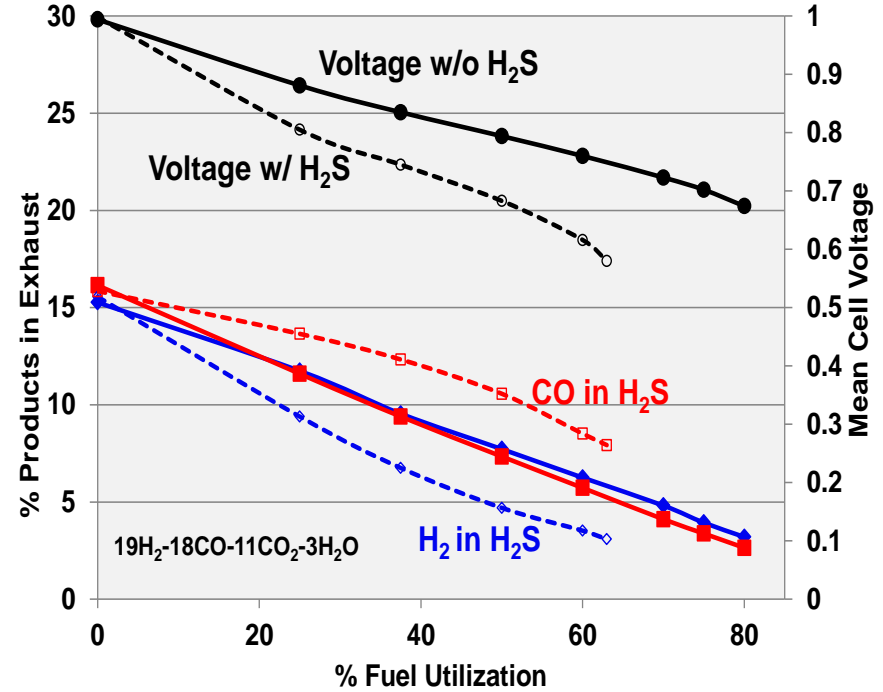
# Sulfur Poisoning Effect on SOFC APU System Power



# Single Cell on Reformate and Sulfur Poisoned Reformate



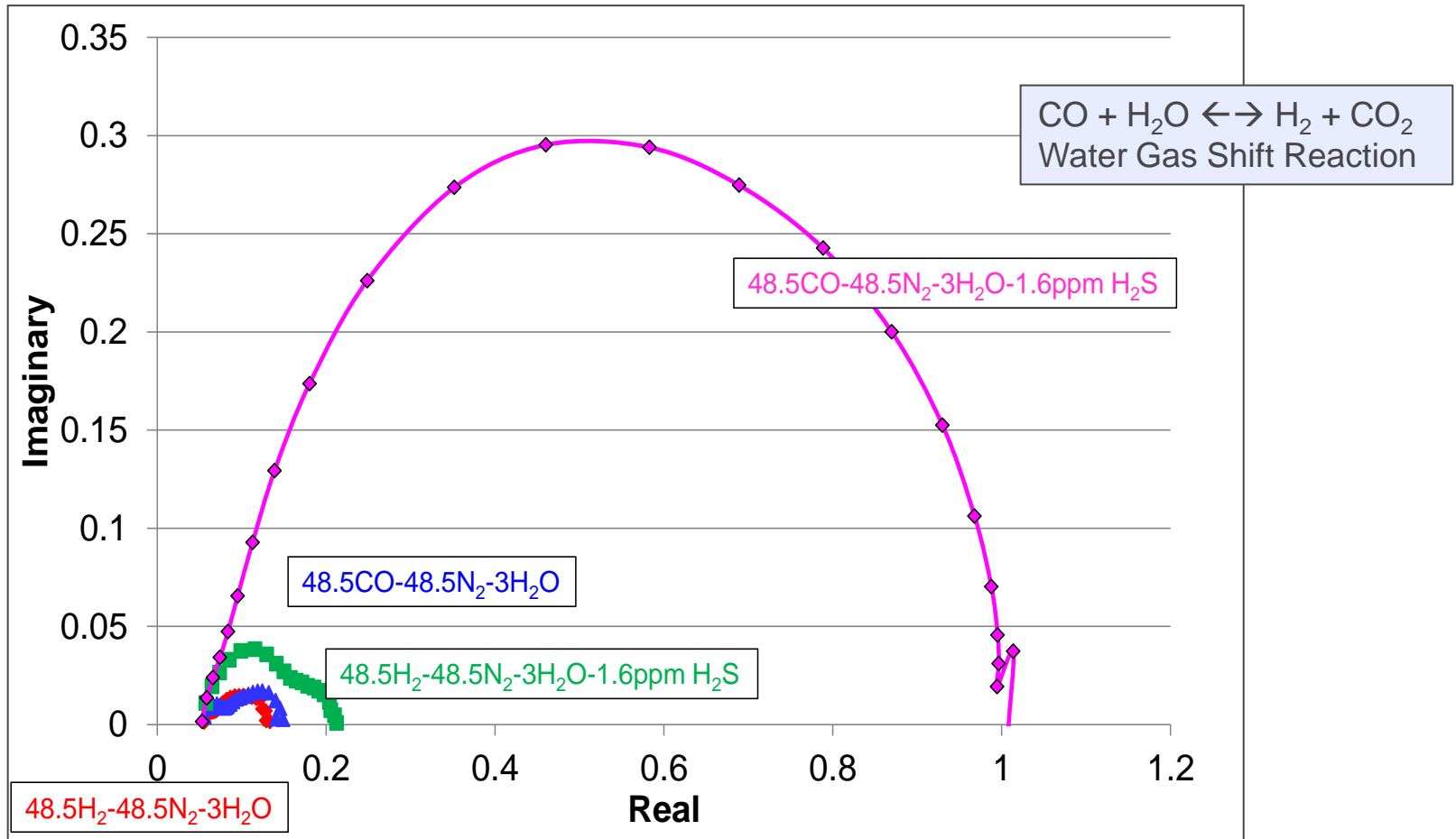
Stack Behavior in Unpoisoned Reformate



Stack Behavior in Reformate and 1.6 ppmv H<sub>2</sub>S

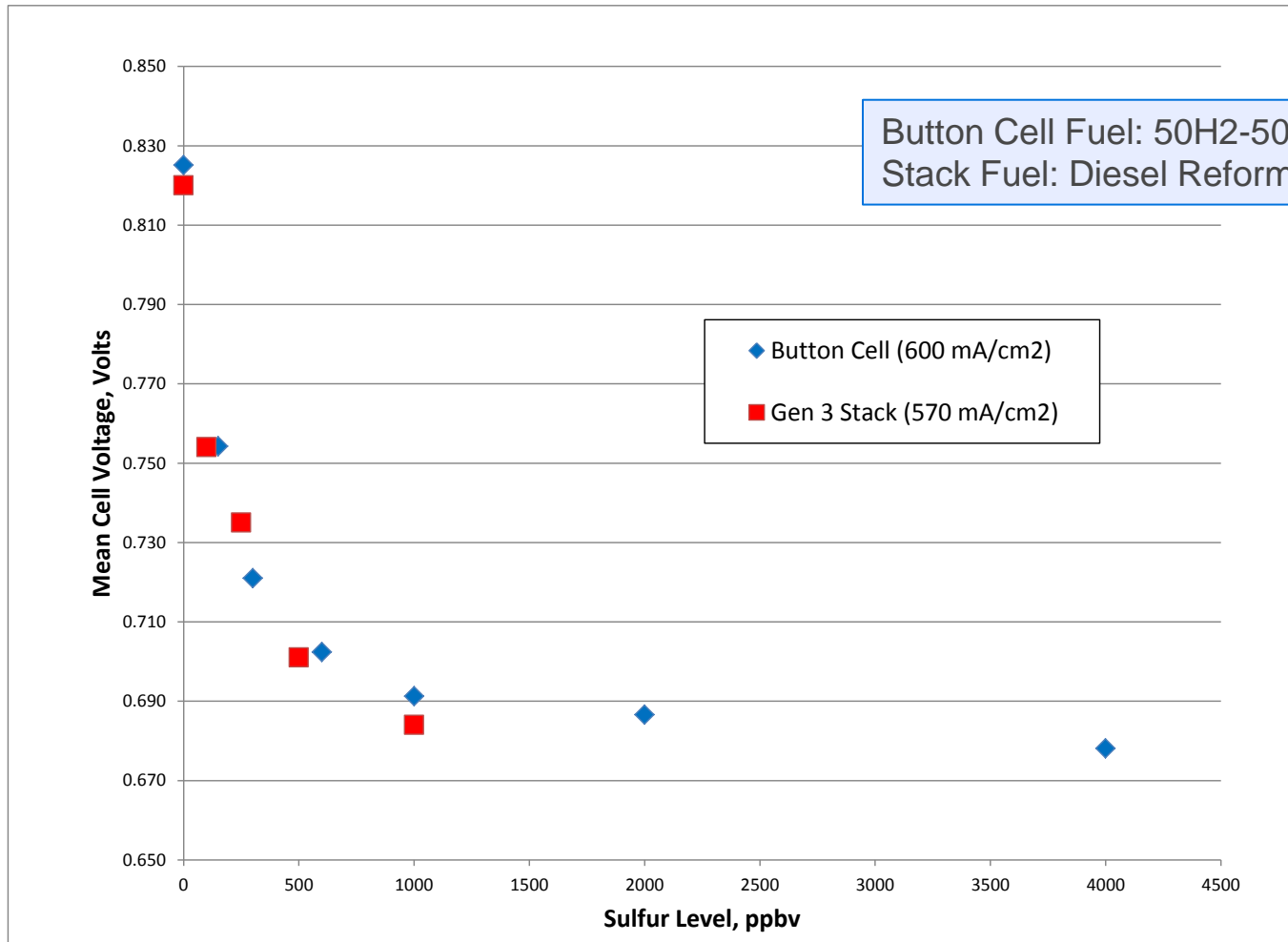
At high fuel utilization, the effect of sulfur is significantly more pronounced in CO-containing diesel reformate than in hydrogen-only fuel

# EIS of Single Cells Using Poisoned and Un-poisoned Fuels



Sulfur affects the water-gas shift reaction to limit the ability to utilize the CO fraction of the reformat

# Button Cell and Stack Response to Sulfur



The performance decrease from sulfur has been measured on a stack at as low as 25 ppbv