
Questions:

1. Discuss the problem(s) being addressed in the paper. What are the benefits to using synchrotron infrared radiation as opposed to other techniques?

2. Discuss the structure of the spectroelectrochemical cell shown in Figure 1. Why were the specific materials used (Pt working electrode, Pt wire counter electrode, silver wire reference electrode, CaF$_2$ window) and how were the window-to-window and Pt-to-window thicknesses determined? What is the purpose of this gap?

3. Discuss the boundary conditions summarized in Table 1 with reference to Figure 2 and the equations outlined in section 3.1 (equations 1-8)

4. Discuss the normalization employed in this paper. Why do cavity thickness and concentration profiles need to be normalized? How was normalization achieved?

5. Why is the ferri/ferrocyanide redox couple being employed? What specific properties make it suitable for this experiment? Make reference to Figure 5.

6. What is being shown in Figure 6? Why might the experimental deviation from the simulation be most extreme when closest to the electrode?

7. What did the paper conclude? Can you suggest any future work that may improve upon the experiment?