Meeting with Dr. Fridman (11/18/19)

Questions

1. To Calculate 300 μC/cm^{-2} per phase, do you just integrate your signal to get the charge injected and then divide by the surface area of the electrode right?
2. **What determines the number of 300 μC/cm^{-2}? Is this a hard rule? Are there ways to push past this threshold safely**
3. Is the number 300 μC/cm^{-2} with a bias?
4. Is it necessary to do potentiometer experiments to verify the waveform I use isn't doing electrochemistry?
5. **Is there a rule of thumb excitation threshold? I found threhsolds of ~1 nC per phase.**
6. Everything is reported in phase, but what's effect of the length of the phase? On the excitation thresholds? On the damage thresholds?
7. What damage does bubbling hydrogen/oxygen gas do to the brain?

My electrodes:

1. 32-64 Channels
2. 176 μm^2 GSA Pt-Ir contacts
3. with a charge density of 283 μC/cm^{-2}, I get Charge/phase of 0.5 nC.
4. 50μm within stereotrode or tetrode group.

Notes From Meeting

1. Strength Duration Curve Tells Impact from Length of Phase
2. Merril 2004: review
3. Ways to increase charge:
    1. Increase Surface Area: PEDOT-PSS
    2. Increase Charge capacity (charge available for chemistry): Activated Iridium
4. Avoid blood vessels at all costs (create immune raction). Can do this with rapid insertion.
5. Monitor voltage: can tell u about scar tissue formation and if bubbles are forming, etc...