Calculations

1. Absorbance calculations: $A_t = -\log\left(\frac{I_t}{I_0}\right)$

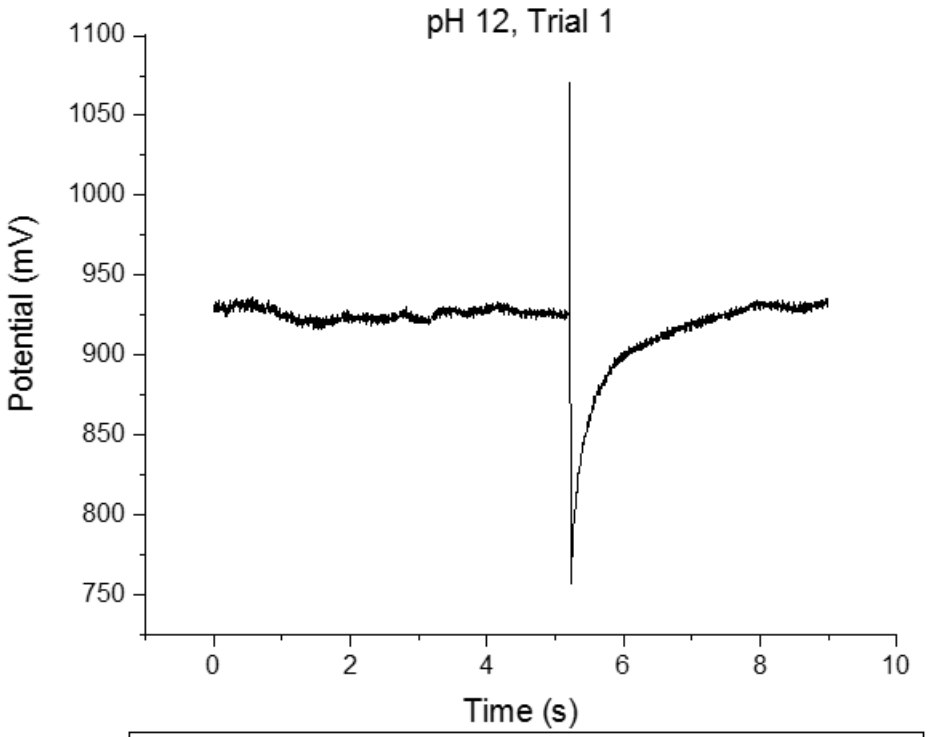
- $I_t =$ intensity at time t
- $I_0 =$ average intensity of the first readings before actual photolysis

$$\frac{1}{A} = \frac{1}{A_0} + \frac{k_{obs}}{\varepsilon l} t$$

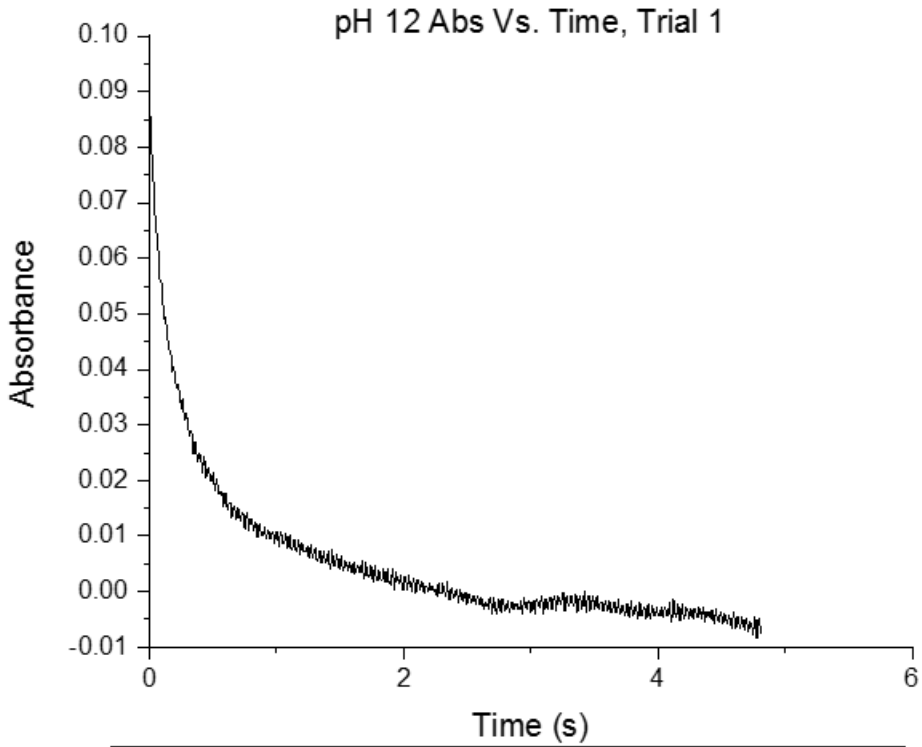
2. Calculate $1/A_t$ **and plot against *time* (*t*)** using linear least-squares analysis. You will have to determine the best number of data points that gives the best correlation (R^2 value closest to 1.0 and positive "y" intercept)
3. Best straight line fit for the 3 trials for each pH will be plotted separately.
   Note that your axes should intersect at (0,0)
4. $k_{obs}(rate\ constant) = slope \times \varepsilon \times l$

   where ε = extinction coefficient, 5000 M^{-1} cm^{-1} and, l = cell path length, 5 cm

   NOTE: k_{obs} for 9 trials and then average k_{obs} for the 3 trials for each pH will be calculated.
5. Calculate $[H^+]$ for each pH



Graph 1: Potential Vs. Time graph for pH 12, Trial 1.



Graph 2: Absorbance Vs. Time graph for pH 12, Trial 1.