Q1: Address the following questions based on the use of absorbance spectroscopy to characterize the quantum dots.

Q1a. Empirically, how does the quantum dot structure relate to the red shift in absorbance (see Figure 1b)?

Q1b: Identify the model associated with quantum mechanics that explains the relationship between quantum dot structure and absorbance.

Q1c: Apply the model from question 2 to explain the relationship between quantum dot structure and absorbance.

Q2: In addressing the below questions, consider Figure 1b and Figure 5.

Q2a: How is the growth over time different between Figure 1b and Figure 5?

Q2b: Identify the two proposed mechanisms of nanoparticle growth discussed in this paper. Which mechanism describes the growth observed in Figure 1b and Figure 5. Describe each growth mechanism.

Q3: Address the below questions by considering the polymerization mechanism.

Q3a: How do the authors control which growth mechanism is in action?

Q3b: What is the explanation for this effect?

Q4: What does it mean that the rate constant is zero order with respect to $(CdSe)_{n=3}$?