Peer Review: How Does it Work?

Literature Discussion with a Focus on Scientific Communication

Read the article provided then answer the following questions:

1. What is the main hypothesis of the paper?
2. What is known, what is not known?
3. What is new in this work?
4. What is the main reaction being driven photochemically in the paper? (you can just sketch this out).
   1. How does this reaction relate to the overarching goal of the paper?
5. What is MPA and how do the authors use this molecule?
6. What is *nano*ITO?
7. What is MV2+ and how do the authors use this molecule?
8. How does the UV/vis data show that CdSe nanoparticles are attached to the surface of the electrode?
9. What is electron microscopy (what techniques fall under this category and what information do they give)?
10. What is a sacrificial donor and what is the purpose of using one?
11. Explain the reaction depicted in Figure 4.
12. Why do the authors divide the moles of MV+ by the moles of CdSe in the photochemical reduction experiments?
13. What is the purpose of applying an electrochemical bias for the photoelectrochemical reduction experiment?
14. List all the goals you can think of that the authors wanted to accomplish in this paper. Judging by these criteria, how well do the authors do? Where is there room for improvement?

You may have noticed that several paragraphs in the paper were highlighted. This wasn’t done by the authors to make the paper look pretty but was done by me for pedagogical reasons. You will work in groups to carefully read and critically analyze one of the colored paragraphs. As you read the paragraph, think about how the information may be improved. Are there other data that would help in understanding the experiment? Is something missing or difficult to understand?

Discuss with your group and be prepared to report the following information to the class:

* What data and techniques were discussed in the paragraph and how do they relate to accomplishing the goal of the paper?
* What additional, related experiments could the authors use to present stronger data?

In groups of 3, take a look at the reviewer’s comments and the highlighted paragraph you have chosen. Then answer the following questions:

1. Which of the reviewer’s comments are relevant to the chemistry discussed in your paragraph and why?
2. What additional experiments or information do the authors need to provide to address the applicable reviewer comments?
3. After reading the reviews, how did your perception of the paper change?
4. In the accepted manuscript, where the reviewer comments in your paragraph addressed by the authors?
5. Do you think it is possible to publish a paper without completing all the suggestions given by reviewers?
6. What are some benefits and some disadvantages to the anonymous peer review process? What are some other possibilities for getting work published? Remember, it is not a double-blind meaning reviewers know who the authors are, but the authors cannot find out who the reviewers are.