**How to Read a Journal Article: Analyzing Author Roles and Article Components**

Helland, S. D. et. al. *Inorg. Chem.* **2020**, *59*, 705 – 716.

**Part 1:** Before coming to class read the above article (PDF is posted on D2L) and use it to answer the following questions.

1. The title of this article is “Synthesis and Characterization of Strongly Solvatochromic Molybdenum(III) Complexes”. Define the term solvatochromic in your own words.
2. Below the title is the list of all the authors who contributed to this work. Look at the list of authors and the footnotes for each.
   1. At which colleges or universities was the work completed?
   2. Based on the footnotes which university is each author associated with?
   3. The last author in the list has a star next to their name. What does the star tell you about that author’s role in the project?
   4. What information do the remaining footnotes (⊥, §, and ∥) tell you about the authors?
   5. Investigate the websites for the departments where the work was completed. Which of the authors are professors, graduate student, or undergraduate students?
   6. One of the authors is not a professor or a student. What is the job title of that individual? Based on their job title, what do you think this author contributed to the project?
3. While the order may vary, chemistry research articles generally will have five main sections. Identify the sections of this research article and briefly describe what the purpose of each section is.
4. In addition to the information presented in the research article, there is also supporting information available for this paper. Locate the supporting information for this paper (follow the link at the end of the paper). What information is contained in the supporting information?

**Part 2:** During class, work together in groups to answer the following questions about the paper. Turn in your answers to both parts at the end of class.

1. Based on the introduction section, what is the purpose of this research project? How are molecules studied in this article different from previously studied solvatochromic molecules?
2. What role does the lithium ethanethiolate (LiSEt) play in the synthesis of [Mo(bpy)Cl4]-?
3. Based on the data presented in the paper, does [Mo(bpy)Cl4]- exhibit positive or negative solvatochromism? Based on this information is the ground or excited state of this molecule more polar?
4. The authors state that the visible absorption band in these complexes is due to a metal-to-ligand charge transfer (MLCT) transition.
   1. What experimental evidence did the authors use to make this conclusion?
   2. Explain in your own words what an MLCT transition is?
5. The authors synthesize three other derivatives of [Mo(bpy)Cl4]-, using other bidentate ligands in place of 2,2’-bipyridine (bpy).
   1. Sketch the three other ligands used.
   2. What variable were the authors changing by varying the bidentate ligand?