

Paper #2 – “Hydrophobic Effects Are Dominant over Secondary Orbital Interactions for a Simple Diels-Alder Reaction in Salt Solutions” by D. Sarma & A. Kumar, *Org. Lett.*, **2006**, *8(10)*, 2199-2202 (DOI 10.1021/ol060741q).

As you read the second paper, again realize that the paper must be studied carefully at different levels. This paper also raises some new reading ‘problems’.

- First, although the authors write well, some of their expressions are awkward. Allow extra time to make sense of this paper.
- Second, this paper does not “stand alone” in the same way paper #1 did. Therefore I ask that each of you read one additional paper (they are all short) and summarize the contents of the second paper in writing. I would also like to distribute these summaries to all students in the class, so please let me have your summaries no later than 9 a.m. on Wednesday so that I can photocopy them for the entire class. Guidelines for preparing summaries: 1) write a single paragraph (250 words or less) that summarizes the most important findings in your paper; 2) include either one or two graphics that supplement your written description (the graphic can be a reaction scheme, a table, or a graph, and you can cut and paste it directly from the paper into your summary); 3) refer to the content of your graphics in your written description. The reading assignments are:
  - Todd – R. Breslow, C.J. Rizzo, *JACS*, **1991**, *113*, 4340 (DOI 10.1021/ja00011a052)
  - Sarah – D.C. Rideout, R. Breslow, *JACS*, **1980**, *102*, 7816 (DOI 10.1021/ja00546a048)
  - Melissa – E.T. Kool, R. Breslow, *JACS*, **1988**, *110*, 1596 (DOI 10.1021/ja00213a036)

Questions for discussion:

1. Basics:
  - a. Do you understand the scientific vocabulary and statements inside the paper?
  - b. Can you draw all of the compounds mentioned in this paper?
  - c. Can you draw equations for chemical reactions studied in this paper?
  - d. Can you describe the experimental conditions, the mixture of compounds (or isomers) used as reagents or obtained as products, and any other measurements that were made?
2. Advanced:
  - a. Do you understand the main issues<sup>1</sup> and findings described by the authors?
  - b. Can you state the take-home lessons?
  - c. Did the paper leave any questions unanswered?
  - d. Was this work *data/discovery*-driven or *hypothesis*-driven? Explain. If the former, identify the data/discovery that was desired. If the latter, state the hypothesis that was being tested.

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<sup>1</sup> Ignore the material on secondary orbital theory. We will discuss this theory later in the semester.