Useful References for Organic Chemistry Lab Work

Included in this list are a number of documents you might find useful for lab work in Organic Chemistry.

Spectroscopy Resources:

1. Spectral Database for Organic Compounds (SDBS) from the National Institute of Advanced Industrial Science and Technology (AIST) in Japan.
    a. The SDBS has recorded IR and NMR spectra for a huge range of organic compounds, with a very good search engine. Looking at spectra for similar compounds, starting materials, or possible side products can be an excellent way to help analyze experimental NMR spectra.
    b. http://sdbs.db.aist.go.jp/sdbs/cgi-bin/cre_index.cgi?lang=eng
2. Gottlieb, H. E.; Kotlyar, V.; Nudelman, A., NMR Chemical Shifts of Common Laboratory Solvents as Trace Impurities. *The Journal of Organic Chemistry* **1997,** *62* (21), 7512-7515.
    a. http://dx.doi.org/10.1021/jo971176v
    b. This is a highly referenced JOC article with a table detailing the chemical shifts of a number of common solvents (and impurities such as vacuum grease) in different deuterated solvents.
3. Fulmer, G. R.; Miller, A. J. M.; Sherden, N. H.; Gottlieb, H. E.; Nudelman, A.; Stoltz, B. M.; Bercaw, J. E.; Goldberg, K. I., NMR Chemical Shifts of Trace Impurities: Common Laboratory Solvents, Organics, and Gases in Deuterated Solvents Relevant to the Organometallic Chemist. *Organometallics* **2010,** *29* (9), 2176-2179.
    a. http://dx.doi.org/10.1021/om100106e
    b. A follow up to Gottleib et al that includes a greater range of solvents and some common organometallic impurities.

Writing Resources:

4. ACS Style Guide (from Williams College):
    a. http://libguides.williams.edu/citing/acs

Synthesis Resources:

5. Organic Chemistry Portal: Website with good databases of named reactions, protecting groups, and searchable reaction-type database.
    a. http://www.organic-chemistry.org/reactions.htm

Useful Programs:

6. SpinWorks is a free, open-source NMR processing software written by a faculty member at the University of Manitoba. It can be used as an alternative to TopSpin, and has many of the same features.
    a. https://home.cc.umanitoba.ca/~wolowiec/spinworks/
7. Chemistry Dictionary (V 3.0) is a dictionary package compatible with many word-processing programs that includes over 100,000 words common to chemistry and chemical writing. It can be extremely useful for **not** having every chemical compound you write out underlined as incorrectly spelled, as well as helping you catch spelling errors in complex names.
    a. http://www.chemistry-blog.com/2008/12/17/chemistry-dictionary-for-word-processors-version-20/