

Suggested Review Subjects -431/531

Ground Rules: The term paper should be a critical and recent review of an area in the synthesis/synthetic methods area, and as exhaustive as a reasonable page count will allow. By way of page count, I've found that a good job can be done starting at 20 pages, double spaced, diagrams included. Much shorter than this is too cursory a treatment, and if you find yourself getting over 30 pages, you're probably just getting carried away. To re-emphasize, I am looking for a review that is **exhaustive** (to the degree possible), **recent**, and **critical** in its analysis of the papers. What is *not appropriate* is finding the most recent review on an area and writing an abbreviated, paraphrased version of it. The following are suggested areas for review and a reference or two to get you into the literature. *If you have other areas you wish to cover, I welcome this, but please check them out with me first.* As for due date, one week before class end is Nov. 25, so I'll make that the formal due date.

Update to the Homoenate chemistry of siloxycyclopropanes – i.e. Kuwajima/Nakamura chemistry
Organic Letters 2011, 13, 3648.

Baylis-Hillman reaction - Journal of Organic Chemistry (2004), 69(24), 8413.

Stetter Reaction Angewandte Chemie, International Edition (2005), 44(18), 2632-2634

Vinylcyclopropane rearrangement - Chemical Reviews (2003), 103, 1197.

Metal catalyzed C-N bond formation by cross coupling - Advanced Synthesis & Catalysis (2004), 346, 1599 **this getting too big an area now, but C-O and C-S bond formation isn't (also in review)**

Hiyama-Denmark Coupling Reaction. Name Reactions for Homologations, 2009, Pt. 1, 33-46. Acc. Chem. Res. 2008, 41, 1486.

Nazarov cyclization - Organic Letters (2003), 5, 5075.

Tamao oxidation - Chemistry--A European Journal (2002), 8, 5043.

Arylation and vinylation of enolates - Journal of the American Chemical Society (2004), 126, 5182.

Non-Wittig alkylidenation of carbonyls – Early TM - Organic Letters (2004), 6(26), 4965.

Peterson Olefination – **431 students only** - Chemical Society Reviews (2002), 31(3), 195.

Chiral lithium amide bases - Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1998), (8), 1439.

Simmons-Smith cyclopropanations - Organic Reactions (New York) (2001), 58 1.

Directed C-H activation/functionalization of aromatics - Advanced Synthesis & Catalysis (2003), 345(9+10), 1077.

Alkyne metathesis - Journal of Molecular Catalysis A: Chemical (2006), 254(1-2), 96

Directed metalation by zincates – Kondo, Y. Journal of the American Chemical Society (1999), 121(14), 3539.

Direction metalation by organomagnesiums – J. Am. Chem. Soc. (1989), 111(20), 8016-18.

Cycloadditions on Indoles - Tetrahedron (2004), 60(31), 6495; Organic Letters (2007), 9(2), 279

C-5 Indole substitution - Synlett (2003), (7), 971, yearly 'Progress in Heterocyclic Chemistry' volumes.

Cross coupling of sp³-hybridized systems

Interrupted Feist-Benary synthesis - Journal of the American Chemical Society (2005), 127(42), 14566-14567

Inverse Electron Demand Diels Alder Reactions Chem. Rev. 2013, 113, 5515 (area getting rather big).

Note: A good starting point for searching for references in an area is to find an important lead paper in a area (which may or may not be a review) from several years ago, and the searching the Science Citation Index (also called ISI Web of Knowledge/Web of Science) for every paper that has referenced that lead paper. You get an exhaustive list of references, many of which you'll end up discarding, but you are not likely to miss anything.

The web page for this is

<http://led.uwindsor.ca/web-of-science>

You may also find this through www.uwindsor.ca/leddy -Journal articles and research tools – Chem/Biochem

SciFinder, from the American Chemical Society, also has this feature, but it seems to miss a few things, especially prior to 1995. The ISI Web approach is more exhaustive.