

Editorial

Do You Want to be Famous?

You too can be published in *Organic Process Research & Development* and never even enter the lab! Interested? Read on.

As we learned in our undergraduate chemistry classes, there are several classes of scientific publications. The primary literature consists of the first disclosure, whether they are lecture transcripts, patents, or just a garden variety publication; the secondary literature, wherein science that has previously appeared is now presented with either a different focus or as part of a larger work; and finally the tertiary literature, wherein the knowledge is usually combined with similar topics in a collection, such as in textbooks, monographs, and the object of this editorial, reviews. This is your path to fame!

This is prompted by two industrious Pfizer chemists, Javier Magano and Josh Dunetz. They have proposed to write for *Organic Process Research & Development* several review manuscripts covering large-scale treatment of reductions and amide formation. The final form of these reviews in regard to what is large scale and how much of the topic to cover (reduction is a rather broad brush) is still to be finalized, but the idea is good. As reviews can be rather flexible documents, do not let your preconceived notions of what is a review stop you from writing one yourself. Perhaps you have already done the literature research for a potential review? All of us occasionally end up doing an extensive literature survey when a particular reaction is to be optimized. That literature collection should include a lot of information on scalable conditions. Why not write it up, now that the hard part, collection of the literature, is done?

But we are not looking for simply a tabular collection of every sodium borohydride reduction done at 100 mmol scale or higher. Our readers expect more. We would hope your review might include these concepts:

- typical catalysts, solvents, or reagents used for the reaction and that are somewhat particularly well suited
- potentially scalable conditions, even if not demonstrated yet on large scale
- cost issues, if any
- patent and IP situation, if important
- safety considerations (consider this mandatory)
- trends observed for how the reaction is conducted, reagents used, workup protocols, best practices, etc.
- 'lost' ideas, a reaction that was published but never picked up by others and is now rarely cited.

Scientists with a good overview of the field should be able to include a discussion of likely future directions for the reaction or what is still needed for scaling such reactions.

At all times, the focus should be on the use of the reaction at large-scale work, whether that is ton scale for widely used compounds or kilogram scale for highly potent drugs. Many useful reactions have not been scaled but certainly have the potential. This should be made clear in the review. These attributes would differentiate your review from those we see

elsewhere and provide the value for the process chemist. Your review might be the first place for a process scientist or engineer to turn when presented with a new problem. Such reviews become even more valuable as organizations continue to convert their hard copy libraries into virtual libraries, and the books we once used for introduction to a new field disappear. Needless to say, none of what is in the review would constitute a guarantee of safety. Reactions that are to be run on scale require sufficient testing for thermal events and toxicity.

The length of these reviews would depend on how you define the area to be examined. While a topic such as oxidation might be too big to handle in a single review, good internal organization would allow even huge reviews to be useful, or you can define a subset of the field to generate an appropriately sized review. Reactions infrequently run in industry might have relatively short treatments. Some topics we would love to see include:

- oxidations (most likely subsets of reagent classes or functional group oxidation)
- hydrogenation/asymmetric hydrogenation; transfer hydrogenation
- Suzuki–Miyaura reactions or perhaps simply Pd-catalyzed couplings
- Fischer indole reactions
- Buchwald–Hartwig reactions
- metathesis
- introduction of fluorine into organics
- halogenations
- olefin formation
- synthesis of specific classes of heterocyclic rings
- cycloadditions
- acylations
- formation or introduction of cyclopropanes and/or small rings
- or anything that we might wish to scale up, which is really everything

We hope you would not limit your sources to strictly industry publications, as there are patents and many good ideas that arise in academic laboratories that should be included.

We hope you are inspired to tackle this challenge, and we envision a long series of useful reviews. I would ask that you contact me before you do any serious writing to be sure you are not duplicating the efforts of another writer. In those circumstances, perhaps we can form some teams to produce the review.

So, who's first?

Jaan Pesti

Associate Editor

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