

## OPRD's First Large Scale Review

I am proud to say that this issue heralds the appearance of a new manuscript category for *Organic Process Research & Development* (OPRD), and that is reviews focused on scale-up issues and experience. Last year in the January/February issue, the editorial challenged the readership of OPRD to write manuscripts covering specific areas of chemistry or chemical engineering that would highlight science either being done on large scale or making advances toward large scale.<sup>1</sup> As to what 'large scale' exactly means, we are flexible. Obviously, there are many transformations or techniques that have been rarely or never run at multikilogram scale. Science devoted to improving such chemistry might still qualify as work toward large scale and be reasonable to include in a review.

Javier Magano and Joshua Dunetz of Pfizer Chemical Research and Development originally proposed to write just such a review, and this issue contains the manifestation of their concept, an in-depth review on chemistry directly related to large scale reductions in the pharmaceutical industry. This is exactly what a process chemist who is about to scale up a reduction should read. The next issue of OPRD will highlight a similar review but on the topic of conjugate additions. In the wings, we have an arsenal of excellent scientists writing on various other topics. These include asymmetric hydrogenation, indole ring formation, Cu-mediated couplings, ring-closing metathesis, phase transfer catalytic alkylations, fluorinations, and CF<sub>3</sub> group introduction. I should add that, while these topics are reserved for those who inquired first, some may be willing to collaborate or may end up not completing their work, thus releasing the topic for others to report on. Thus, do not be discouraged if you see your favorite subject has already been taken. Let me know your interest, and maybe we can make something happen.

At first glance, writing a review for the first time may seem daunting. However, there may be natural synergies for you to exploit. Perhaps you just completed an exhaustive literature survey for a reaction related to your research, or you have completed a comprehensive search to support a patent application. Is there a transformation that has always interested you and thus you have maintained a card catalogue on it over the past 20 years, or maybe this is a good opportunity for you to really get to know a new class of reactions which has piqued your interest? Just remember the focus throughout needs to be about large scale or directed toward large scale.

As to what to include in such a review, there is a long list. Topics we would like to see include the following:

- typical reaction conditions for reactions run at scale, particularly if there are limitations (temperature, solvents, catalysts, etc.);
- safety considerations;
- cost or IP issues;
- trends seen in the literature, 'tricks' for running the reactions or workup, best practices, etc.;
- new and innovative ideas for how to overcome existing problems for scale up;
- greener ways to run the chemistry;
- what has not been tried but seems logical to attempt;
- recent ideas that might give new life to a mature reaction;
- some history on the large scale aspects of the chemistry, if it has evolved;
- your perspective on the future of the reaction for large scale work.

For these reviews we expect the author not just to list all the reactions found but also to deliver useful analyses of these otherwise disparate reactions and, on the basis of his/her appreciation of all the articles read for the review, to give us a broader sense of what has or has not been tried. Remember that, if there is enough material, you need not cover *all* of a category. A review on oxidation might be a very long manuscript, but oxidation of aldehydes or benzylic carbons might be reasonable subsets to tackle. However, beware of becoming too academic. The narrative must always be focused toward large scale work as other journals already do a fine job of covering the usual genre of reviews.

We particularly want to invite the engineers in the OPRD family to contribute. This journal is making a special initiative to invite engineers to think of OPRD as a place to display their science, innovation, and accomplishments. For instance, a review on drying in the plant would be a good idea or perhaps one on filtration. OPRD really does not see enough manuscripts devoted to the engineering aspects of our field, and I wish to extend a particular invitation in that direction, not just for reviews but also for engineering manuscripts in general.

After my last editorial,<sup>1</sup> we received a nice rush of requests to write reviews. That has slowed down, and I hope the appearance of this first review will revive interest for a new round of volunteers. There are still hundreds of topics remaining that are important to large scale work. Please consider reserving one in order to improve your visibility, your value to your institution, and your service to the process community.

Jaan Pesti

### ■ AUTHOR INFORMATION

#### Corresponding Author

E-mail: jaan.pesti@bms.com.

### ■ REFERENCES

- (1) Pesti, J. *Org. Process Res. Dev.* **2011**, *15*, 1.

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