

# Organic Process Research & Development

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## *Editorial*

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### Does Industry Get Its Synthetic Methodology on the Cheap?

You may have seen an “advert” in many ACS journals about “most-requested articles”, where five of the top 10 most-requested articles listed in the CAS Science Spotlight are from *J. Am. Chem. Soc.*. The five articles include two from Buchwald’s group (Finkelstein reaction and amination), one from the group of Trost (total synthesis), one from Grubbs (catalyst synthesis for metathesis reactions), and one from Fürstner (ion-catalysed cross coupling).

Four out of the five papers refer to reactions which are eminently suitable for work on large scale and which may have been highlighted in this journal, and although the Trost paper is not so appropriate, his research group has produced many new reactions which the process R&D chemist can quickly adapt for kilogram preparations.

Although the bulk chemicals industry occasionally discovers new reactions using heterogeneous catalysis and continuous processes, the fine chemicals industry and pharmaceuticals industry generally relies on university research to discover new reactions, then adapts these to industrial processes. Organic chemistry is often said to be a mature science, but university professors still manage to be incredibly inventive in synthesis, and this benefits the process chemist and industry in general.

Process R&D in industry relies on a vast literature, and therefore, it is vital that young (and old) chemists keep up with the latest papers. This is why I started writing the Highlights section many years ago. However, industrial chemists must find and be allowed time in their busy schedule for literature work—too often it comes at the bottom of the priority list, a mistake in my view. Companies are also abandoning their hardcopy libraries for electronic journals, again another mistake. Whilst the electronic format is fantastic for retrieval of information, it is not the best for browsing, where hardcopy is much more convenient. I

recently made an informal survey and found that the majority of chemists preferred hardcopy to keep up with current literature and electronic format for searching for specific data.

Industry obtains incredible value for money from the literature. I often wonder whether it gives enough in return by funding academic research in organic synthesis. With mergers and acquisitions, the number of companies available to fund academia has diminished. When I started my own company 15 years ago, there were 15 medium-to-large pharmaceutical companies doing research in the UK; now there are four or five. I am sure it is the same in France, where the names Roussel, Rhône-Poulenc, and Synthelabo have disappeared; other nations have similar stories.

In the UK, university chemistry departments are being closed—the recent proposed closure at Exeter has made the news in the national newspapers and TV. Process R&D in industry depends on novel synthetic organic chemistry being carried out in the academic world, both from the viewpoint of the literature and in the training of PhDs. Maybe it is time for the fine chemical/pharmaceutical industry to increase its investment in academic research in synthetic organic chemistry to ensure the longer-term future of chemistry.

I have covered many issues in this editorial, but most are related to companies having a long-term strategy and thinking ahead. Budget cuts in library provision, training, and academic funding are short-term measures to meet accountants’ targets when profits in many pharma companies are still very large. The question is, do they have their priorities right?

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