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Editorial

Process R&D: Past and Present

I, along with some other scientists, was recently asked to be a judge in a competition for Process Chemistry and found it amazingly difficult to come to conclusions on which submission was best. What were we looking for in good process chemistry?—innovative synthetic chemistry must be a key requisite, but even that is not so easy to classify. I tend to look for simplicity in synthesis since that is often what works best in manufacture. In fact, when I analyse my criteria for good process R&D, I am always thinking ahead to manufacture. Economics, availability of raw materials and reagents, simple work-up, scaleability (now there's a vague concept), robustness, product purity, and environmental friendliness are all key elements which I look for in current processes. Above all, I look for efficiency, both in synthesis and in the overall process, the latter usually defined by space-time-yield. For the pharmaceutical industry, cost is less of an issue prior to launch than for an agrochemical, fragrance ingredient, or colour chemical, so the pharma industry can learn from other industries when it comes to efficiency. When drugs go generic, then efficiency and cost are the key parameters, along with product purity.

It is interesting to compare current attitudes to process R&D with those from the past. In this issue of *Organic Process Research & Development* you have a chance to do that. The first article is a "memoir" written by Seemon Pines, formerly of Merck Process R&D, which describes work done on cortisone many years ago. One can see that there are differences, for example in the choice of solvents and in environmental awareness, when compared with those of todays' processes. But the principles have not changed. I hope you enjoy reading this unusual article, which contrasts with the more "conventional" reports in this issue.

Trevor Laird

Editor

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