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Editorial

Biocatalysis and Biotransformations

There is an increasing interest, both from academia and industry, in biocatalysis and biotransformations. For example, in the United Kingdom, the government has an initiative to create a network of bioprocessing centres for scale-up studies and has already created a Centre of Excellence based in Manchester for Biocatalysis, Biotransformations and Biocatalytic manufacture (CoEBio3), led by Prof. Stan Roberts (Managing Director) and Prof. Nick Turner (Principal Science Director).¹ This CoE will be partly funded by industry, and the number of industrial enterprises who have committed to supporting this venture is already around 30. This includes large organisations such as multinational pharmaceutical and fine chemical companies, as well as start ups with expertise in biotransformations.

With current genetic engineering techniques, biocatalysts can be tailored to have specific properties and to be focused on manufacturing needs, not just R&D's requirements. Stability, turnover number, lack of sensitivity to inhibition by substrate/product/impurities, productivity/throughput, and ease of separation are all properties which can be designed in; these usually affect the economics of the process.² Such are the improvements, that biocatalysts are being used, not only in making intermediates for high added value products such as pharmaceuticals and agrochemicals but also for commodity and speciality chemicals, where the end product needs to be produced for a few dollars per kilogram.³

It is 3 years since *Organic Process Research and Development* (OPRD) produced a special issue on Biocatalysis. The special editor for that feature section, Dr. Mahmoud Mahmoudian, commented in his editorial in 2002 that he hoped that the 2002 issue would not be the last one in OPRD. Owing to the delay in one of our planned special issues on solvents and solvent effects, we have decided that a second special issue on Biocatalysis and Biotransformations will be published in 2006. This editorial therefore serves as a call for papers for this special issue, for which the deadline for receipt of manuscripts is the end of December 2005. I (or more truthfully, Sue Parsons at Scientific Update) will be coordinating this issue with help from advisory board members. Let me or Sue know if you wish to submit a paper. Last time we received more than 25 papers for the special issue. My target is to try to better that number, with the quality being of the same high standard as the previous special issue.

Trevor Laird
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(1) See *sp²* magazine, Feb 2005, p 25; <http://www.biotechmanchester.com>.

(2) For recent examples from Du Pont see Mersinger, L. J. et al. *Adv. Synth. Catal.* **2005**, 347, 1125; Hann, E. C. et al. *Org. Process Res. Dev.* **2002**, 6, 492.

(3) For recent excellent books, see: Bommarius, A. S.; Riebel, B. R. *Biocatalysis*; Wiley-VCH: New York, 2003; Liese, A. et al. *Industrial Biotransformations*; Wiley-VCH: New York, 2000 (2nd ed., 2005); Drauz, K.; Waldmann, H. *Enzyme Catalysis in Organic Synthesis*; Wiley-VCH: New York, April 2002; Patel, R. *Stereoselective Biocatalysis*; Marcel Dekker: New York, 2000.