

Micro Reaction Technology in Organic Synthesis

Micro Reaction Technology in Organic Synthesis. By C. Wiles and P. Watts. CRC Press: Boca Raton, FL. 2011. 431 + xxi pages. \$139.95. ISBN 978-1-4398-2471-9.

Although there have been several books devoted to micro-reaction technology over the past decade, there has not been a volume focussed on the needs of the organic chemist. This excellent new book fills that gap.

The authors are experts in the field and have done a remarkable job in covering this fast-moving subject, with references up to work published in 2010. The 431 pages are packed with useful information, written in a pleasing manner, and with plenty of tables and figures to illustrate the chemistry. When it comes to equipment illustrations, some are in black and white, but a few are in a colour centrefold in the middle of the book.

Chapter titles include “Micro Reactions Employing a Gaseous Component”; “Liquid-Phase Micro Reactions (the major chapter at 135 pages)”; “Multi-Phase Micro Reactions”; “Electrochemical and Photochemical Applications”; “Use of Microfluidic Devices for Preparation of Droplets and Particles”; “Industrial Interest in Micro Reaction Technology” (58 pages) and finally “Microscale Continuous Separations and Purifications”. There is also a useful introductory chapter, but I would also have liked to see a final chapter covering the future: Where is this technology going, particularly in industrial terms?

Overall, this is an excellent book for synthetic chemists with the focus being on chemistry rather than technology. Advantages and disadvantages are described, although I think the authors dismiss the issue of “clogging” of reactors as being largely solved, which is not what I hear from industrial practitioners.

In addition there are few references to continuous processing not in microreactors. Thus, a section for diazomethane (pp 362–363) reports on work of Stark, published in *Green Chemistry* in 2008, but fails to mention that the production of diazomethane on large scale had already been carried out by Aerojet (Batch) and Phoenix (continuous) many years earlier, the latter procedure being well described in an *Org. Process Res. Dev.* paper (*Org. Process Res. Dev.* **2002**, *6*, 884). It would have been useful to compare the Stark/Phoenix procedures in the book.

Despite these minor criticisms, I can highly recommend this book to all organic chemists, whether working in the micro-reactor field or not!

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Editor

10.1021/op200137w

Published: June 06, 2011