Organic Process Research & Development

BOOK REVIEW

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Process Analytical Technology: Spectroscopic Tools and Implementation Strategies for the Chemical and Pharmaceutical Industries, 2nd ed. Edited by Katherine A. Bakeev. Wiley: New York. 2010. xxiv + 576 pp. €162. ISBN 978-0-470-72207-7

This second addition of *Process Analytical Technology* has a new subtitle which accurately reflects the contents. The volume begins with a brief overview of Process Analysis and PAT by Jason Dickens of GSK, which amongst other things, discusses challenges and pitfalls. The following chapter from scientists/engineers at Merck discusses implementation of PAT in an industrial setting; here this means manufacturing rather than development. Both of these early chapters could have benefited from some examples to illustrate important issues.

A very practical chapter on Sampling and how to get accurate representative analytical measurements is then followed by individual chapters on various Spectroscopic Techniques used for PAT, including UV−visible, near IR, IR Raman, process NMR, NIR, Acoustic Chemometric Monitoring, and Fluorescent Sensing. An important 80 pages on Chemometrics in PAT examines issues such as data processing and calibration, as well as model building and validation.

A chapter on online PAT applications covers areas such as API drying, granulation, powder blending, compression, and freeze-drying. Future trends for PAT for increased understanding and growing application in Biomanufacturing concludes this excellent work.

If I have one criticism it is that the mainly industrial authors could have brought more of their industrial experiences into the chapters; the chapter on acoustic chemometric monitoring written by academics surprisingly seems to have more real industrial examples than do most other chapters.

Overall, this excellent compilation is highly recommended.

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Editor

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