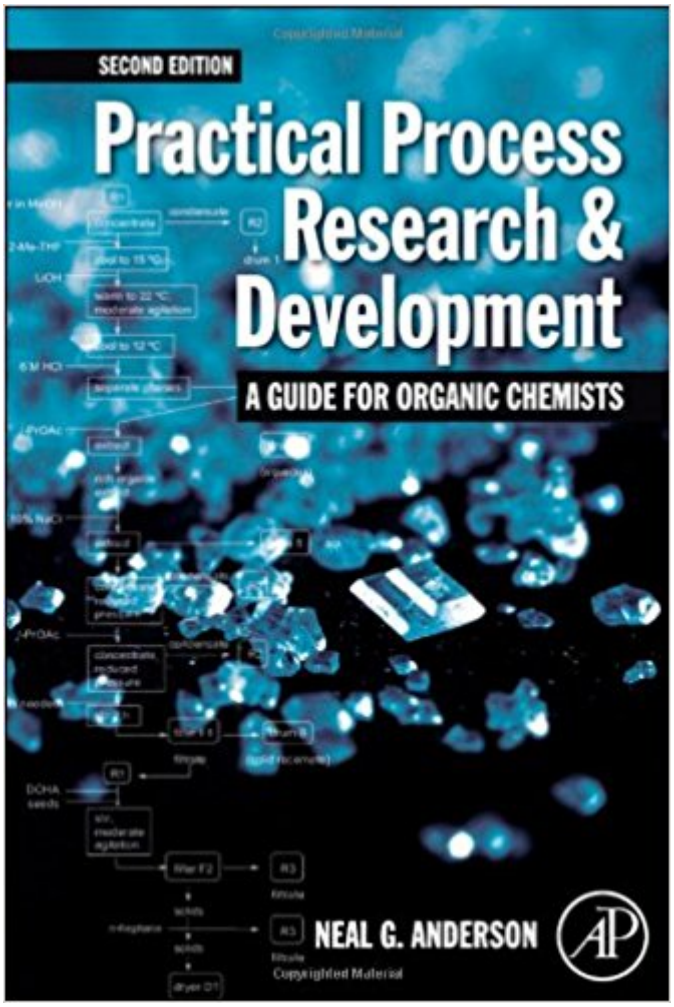
Practical Process Research And Development – A Guide For Organic Chemists, Second Edition



Synopsis

Designed to provide a comprehensive, step-by-step approach to organic process research and development in the pharmaceutical, fine chemical, and agricultural chemical industries, this book describes the steps taken, following synthesis and evaluation, to bring key compounds to market in a cost-effective manner. It describes hands-on, step-by-step, approaches to solving process development problems, including route, reagent, and solvent selection; optimising catalytic reactions; chiral syntheses; and "green chemistry." Second Edition highlights: â ¢Â Reflects the current thinking in chemical process R&D for small molecules â ¢Â Retains similar structure and orientation to the first edition. â ¢Â Contains approx. 85% new material â ¢Â Primarily new examples (work-up and prospective considerations for pilot plant and manufacturing scale-up) â ¢Â Some new/expanded topics (e.g. green chemistry, genotoxins, enzymatic processes) â ¢Â Replaces theÂ first edition, although the first edition contains useful older examples that readers may refer toProvides insights into generating rugged, practical, cost-effective processes for the chemical preparation of "small molecules"Breaks down process optimization into route, reagent and solvent selection, development of reaction conditions, workup, crystallizations and morePresents guidelines for implementing and troubleshooting processes

Book Information

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Customer Reviews

I am an inorganic/organometallic chemist by training. I took a job as a research chemist at a small metals based specialty chemical manufacturing company. After a few years in the R&D lab I took a role as the head of scale-up for our new line of organic and organometallic materials. This role

involves process development and scale-up of a wide variety of materials. This area is not something that was discussed much in graduate school (something I think should change). Because my company is small with a large ne'er of products, this is a continual learn-as-I-go experience. This book, along with McConville's The Pilot Plant Real Boom, have become my go to resources for any and all problems related to process development. Both would make excellent texts for a graduate level course on process chemistry.The examples are based on the author's experience in the pharmaceutical field. However, I feel that the information contained in the book may be used for any sort of process development, from organic to materials. It's been extremely useful for me.I would highly recommend this book for anyone in the process chemistry field, from graybeards (as a handy reference tool) to newly minted chemists (as a detailed protocol for process development).

This is *the* book for process chemistry. I'm new to the field, but everyone I've talked to recommends this as the optimal starting point for learning about how process chemists think. Anderson does a great job of taking the reader through each concept while integrating TONS of examples so it's clear that this isn't just theory. I've heard that some of the things Anderson touts as rules are actually a little more fluid in industry, but this is of course dependent on what stage your project is at. For example, solvent choices aren't as strict as the book would make you believe, but he still does a great job of explaining why certain solvents are preferred and ways to move toward these preferred solvent systems.While this book frequently discusses concepts at quite a high level, it's still endlessly entertaining to read. Pages blow by very quickly. The only thing that has been a little strange is when the same chemical process is used in different chapters as an example of multiple different concepts. It's given me deja vu repeatedly, although each different example typically revolves around different data points.

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