

Book Review

Pharmaceutical Experimental Design and Interpretation, Second Edition. N. Anthony Armstrong, CRC Press/Taylor & Francis Group, Boca Raton, Florida, 2006, Hardback, 238 pages, ISBN-10: 0-415-29901-2

The discovery and subsequent development of a new drug product is arduous, time consuming, and expensive. Through the use of well-designed experiments, meaningful data can be gained, which ideally will reduce overall costs and speed the development process. Most formulation scientists, however, have little formalized training in experimental design. The text, *Pharmaceutical Experimental Design and Interpretation*, describes various experimental designs and data interpretation methods that pharmaceutical scientists will find especially helpful.

The text begins with a brief introduction on the experimental process and provides an overview of experimental design principles. Next, the author covers comparisons of mean values, including analysis of variance and least significant difference. Nonparametric tests for both paired and unpaired data are presented. The concepts of linear regression and multivariate methods are also covered. The remainder of the book is geared towards experimental design.

Chapters discuss various factorial designs, response surface methodology, and both model dependent and model independent optimization. The author also includes a discussion on experimental design for mixtures, which is of particular relevance to multi-component pharmaceutical formulations. Finally, a brief chapter covers artificial neural networks.

The author writes clearly and succinctly and covers all major areas of statistical evaluation and experimental design. References are also given with additional suggested reading for further study. The table of contents is sufficiently detailed to allow one to quickly identify a specific subject of interest. The numerous pharmaceutically relevant examples that are provided throughout the text make this book particularly appealing. This text will be a valuable asset to scientists in any pharmaceutical development laboratory including both academic and research facilities. Junior scientists with little experience in experimental design and statistical evaluation will find this book especially useful.

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