

# Environmental Chemometrics: Principles and Modern Applications (Analytical Chemistry)

By Grady Hanrahan

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## Environmental Chemometrics: Principles and Modern Applications (Analytical Chemistry) By Grady Hanrahan

Multivariate, heterogeneous data has been traditionally analyzed using the "one at a time" variable approach, often missing the main objective of discovering the relationships among multiple variables and samples. Enter chemometrics, with its powerful tools for design, analysis, and data interpretation of complex environmental systems. Delineating the rigors of modern environmental analysis and how to effectively solve limitations through multivariate approaches, **Environmental Chemometrics: Principles and Modern Applications** provides an introduction and practical guide to chemometric methods used in environmental chemical analysis.

The text begins with an overview of chemometrics in relation to quantitative environmental analysis and a review of descriptive statistical concepts. Building on this, the author covers environmental sampling considerations, experimental design and optimization techniques, multivariate analysis of environmental and chemical data sets, time series analysis, and quality assurance and method validation. Each chapter contains problem-oriented exercises and research applications from the author's own work and from other experts in the field.

The author's presentation of the basic principles of these methods together with real applications in the field of environmental chemistry makes the comprehension of complex environmental problems and chemically-related concepts more accessible. He covers all major areas of environmental analysis backed by studies from experts in the field. The book is a valuable tool for understanding the rapidly developing world of chemometric methods in environmental analysis.

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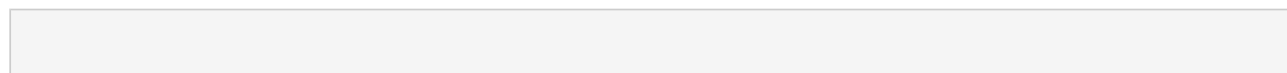
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California State University, Los Angeles, USA Professor Emeritus, Duke University, Durham, NC, USA

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