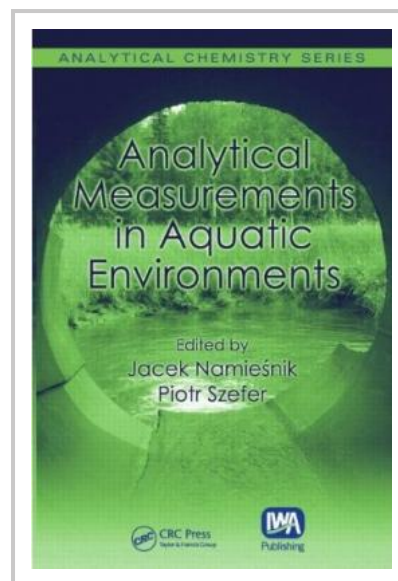


# Analytical Measurements in Aquatic Environments

**Editor(s):** Jacek Namiesnik, Piotr Szefer

Even a cursory perusal of any analytical journal will demonstrate the increasing importance of trace and ultra-trace analysis. And as instrumentation continues to develop, the definition of the term "trace element" will undoubtedly continue to change. Covering the composition and underlying properties of freshwater and marine systems, *Analytical Measurements in Aquatic Environments* provides the basis for understanding both. It discusses all aspects of analytical protocols from the handling of representative samples to the metrological evaluation of specific steps and whole procedures. The book covers:

- handling of representative samples
- sample preservation techniques
- extraction techniques
- speciation analytics
- solvent-free sample preparation for analysis
- application of biotests
- bioanalytical methods for monitoring
- green analytical chemistry-application of the concept of sustainability in analytical laboratories
- application of the Life Cycle Assessment approach
- quality control and quality assurance of analytical results
- enhanced techniques of sample preparation
- hyphenated analytical techniques



Ecotoxicological considerations and the effort to achieve an increasingly accurate description of the state of the environmental challenge analytical chemists who need to determine increasingly lower concentrations of various analytes in samples that have complex and even non-homogenous matrices. The newly coined expression "analytics" emphasizes the interdisciplinary nature of available methods for obtaining information about material systems, with many methods that exceed the strict definition of analytical chemistry. Drawing on the disciplines of chemistry, physics, computer science, electronics, material science, and chemometrics, this book provides in-depth information on the most important problems in analytics of samples from aquatic ecosystems.

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