



Tools, Techniques and Protocols for Monitoring Environmental Contaminants

2019, Pages 3-17

Chapter 1 - An overview of analytical methodologies for environmental monitoring

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Available online 7 June 2019, Version of Record 7 June 2019.

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<https://doi.org/10.1016/B978-0-12-814679-8.00001-7>

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Abstract

Biosensors gained huge attention in recent time to monitor environmental contaminants which needs high specificity and sensitivity. In contrast to the conventional analytical techniques, biosensor is advantageous in the sense of its inexpensiveness, simplicity, eco-friendliness, portability, and capability for providing real-time online monitoring. With the emerging occurrence of environmental contaminants, a number of biosensors have already been designed and developed to detect them; still there is huge scope to explore new sustainable biosensors. The chapter introduces emerging contaminants (such as pharmaceuticals, endocrine disruptors, hormones, pesticides, and heavy metals) and various conventional and advanced techniques for their identification and monitoring in water and soil. These analytical techniques are compared in terms of their economic feasibility, analysis time, and reliability. Further, it discusses the recent advancements in real-time and/or off-line technologies in monitoring emerging contaminants along with their merits and demerits.

[< Previous](#)

[Next >](#)

Keywords