

1. Record Nr.	UNINA9910857792603321
Autore	Anouzla Abdelkader
Titolo	A Review of Landfill Leachate : Characterization Leachate Environment Impacts and Sustainable Treatment Methods
Pubbl/distr/stampa	Cham : , : Springer International Publishing AG, , 2024 ©2024
ISBN	3-031-55513-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (275 pages)
Collana	Springer Water Series
Altri autori (Persone)	SouabiSalah
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	<p>Intro -- Preface -- Contents -- 1 Application of Electrical Resistivity Tomography in Landfill Leachate Detection Assessment -- 1.1 Introduction -- 1.2 Preliminary Assessment -- 1.2.1 Study Area -- 1.2.2 Electrical Resistivity Tomography (ERT) -- 1.2.3 Basic Characterization of Soil -- 1.2.4 Chemical Composition of Soil -- 1.2.5 Sampling of Leachate -- 1.3 Results and Discussion -- 1.3.1 ERT Data -- 1.3.2 Physical Properties of Soil -- 1.3.3 Chemical Analysis of Soil -- 1.3.4 Leachate Analysis -- 1.4 Conclusions -- References -- 2 Biological Test Used in the Assessment of Cytotoxicity and Genotoxicity of Olusosun Landfill: The Largest and Unregulated Landfill in Nigeria -- 2.1 Introduction -- 2.2 Leachate Production at Olusosun Dumpsite -- 2.3 Genetic Assays in the Assessment of DNA Damaging Potentials of Olusosun Landfill Leachates -- 2.3.1 Chromosome Aberration Assay in the Cytotoxicity and Genotoxic Assessment of Olusosun Landfill Leachates -- 2.3.2 Application of Abnormal Sperm Morphological Assay in the Germ-Line Cytotoxicity and Genotoxicity Assessment of Olusosun Municipal Landfill Leachates -- 2.3.3 Application of Micronucleus Assay in the Cytotoxicity and Genotoxic Assessment of Olusosun Landfill Emissions -- 2.3.4 Application of Comet Assay in the Genotoxic Evaluation of Olusosun Landfill Leachates -- 2.3.5 Application of Toxicogenomic and Molecular Signatures in the Genotoxicity Assessment of Olusosun Landfill Leachates -- 2.4 Possible Mechanisms of Action of Olusosun Municipal Landfill Induction</p>

of Cytotoxicity and Genotoxicity -- 2.5 Health Implication of Olusosun Landfill Leachate Induced DNA Damage on Humans and Wildlife -- 2.6 Conclusion -- References -- 3 Landfill Leachate Characteristics -- 3.1 Introduction -- 3.2 Importance of Understanding Landfill Leachate Characteristics -- 3.2.1 Landfill Leachate Formation.  
3.2.2 Physical and Chemical Characteristics of Landfill Leachate -- 3.2.3 Biological Characteristics of Landfill Leachate -- 3.3 Challenges in Leachate Management and Treatment -- 3.3.1 Composition Variability and Complexity of Landfill Leachate -- 3.3.2 Operational and Resource Challenges in Leachate Management and Treatment -- 3.3.3 Regulatory and Environmental Considerations in Leachate Management -- 3.3.4 Recommendations to Consider in the Context of Landfill Leachate Management -- 3.4 Future Trends in Landfill Leachate Management -- 3.4.1 Advancements in Leachate Treatment Technologies -- 3.4.2 Sustainable Approaches to Leachate Management -- 3.5 Conclusion -- References -- 4 Mechanism of Leachate Formation Pollutant and Category -- 4.1 Introduction -- 4.2 Leachate Formation Mechanism -- 4.3 Pollutant Groups in Landfill Leachate -- 4.4 Leachate Categorization -- 4.5 Conclusion -- References -- 5 A Review of Landfill Leachate with Environment Impacts: Sustainable Waste Management and Treatment Methods of Vellore Dump Yard, Coimbatore Corporation -- 5.1 Introduction -- 5.2 Study Zone -- 5.3 Materials and Methods -- 5.4 Problems and Mitigation Measures -- 5.4.1 Improper Waste Management Practices and Their Environmental and Health Implications at Vellore Dump Yard -- 5.4.2 Air Pollution from Waste Burning at Vellore Dump Yard -- 5.4.3 Water Pollution from Contaminants Leaching into Groundwater at Vellore Dump Yard -- 5.4.4 Odor Nuisance from the Vellore Dump Yard -- 5.4.5 Health Concerns Due to Proximity to Vellore Dump Yard -- 5.4.6 Lack of Waste Segregation at Vellore Dump Yard -- 5.4.7 Ecological Disruption Due to Vellore Dump Yard -- 5.4.8 Public Outcry and Protests Against Vellore Dump Yard -- 5.4.9 Legal Actions and Petitions Regarding Vellore Dump Yard.  
5.4.10 Mitigation Measures and Environmental Policies and Guidelines that Can Be Implemented or Suggested for the Vellore Dump Yard -- 5.5 Conclusions -- References -- 6 Impact of Landfill Leachate on Ground Water Quality: A Review -- 6.1 Introduction -- 6.1.1 Composition of Leachate -- 6.2 Leachate and Ground Water Pollution -- 6.3 Influence of Depth and Distance from Landfill on Ground Water Quality -- 6.4 Conclusion -- References -- 7 Assessing the Impact of Landfill Leachate on Surface and Ground Water in Bangladesh: A Comparison with Other South Asian Regions -- 7.1 Introduction -- 7.2 Landfills and Leachate Generation -- 7.2.1 Mechanism of Leachate Generation -- 7.2.2 Factors Influencing Leachate Composition -- 7.3 Characteristics of Landfill Leachate -- 7.4 Impact of Landfill Leachate on Water Bodies -- 7.4.1 Impact on Surface Water -- 7.4.2 Impact on Groundwater -- 7.4.3 Case Studies of Specific Landfill Sites -- 7.5 Remedial Measures -- 7.6 Conclusion -- References -- 8 Landfill Leachate and Ecotoxicity -- 8.1 Introduction -- 8.2 Principles of Aquatic Ecotoxicology -- 8.2.1 The Test Organisms -- 8.3 Landfill Leachate: Characterization Parameters Related to Ecotoxicity -- 8.3.1 Ammonia Nitrogen -- 8.3.2 Alkalinity -- 8.3.3 Organic Matter -- 8.3.4 Salinity (Chloride) -- 8.4 Ecotoxicological Effects of Brazilian Leachates -- 8.4.1 Characterization of Samples -- 8.4.2 Experiments Performed -- 8.4.3 Results and Discussion -- 8.5 Essential Treatment Techniques for Ecotoxicity Removal -- 8.6 Conclusions -- References -- 9 Characteristics and Pollution Potential of Leachate from Municipal Solid

Waste Landfills -- 9.1 Introduction -- 9.2 Landfill By-Products -- 9.3 Formation of Leachate Plume -- 9.4 Leachate Composition and Effects on the Environment -- 9.5 Effects of Leachate on Water Quality (Surface Water and Ground Water).  
9.6 Effects of Leachate on Soil and Farmlands -- 9.7 Health Effects of Environmental (Water Resource) Contamination -- 9.8 Impact of Landfill Leachate and Public Outcry -- 9.9 Different Methods of Landfill Leachate Treatment -- 9.10 Case Study: Typical Landfill in Bayelsa State, Nigeria -- 9.10.1 Description of the Study Area -- 9.10.2 Study Objectives -- 9.11 Data and Methodology -- 9.11.1 Sample Collection -- 9.12 Result and Discussions -- 9.13 Summary and Conclusions -- References -- 10 Assessing Leachate and Landfill Biogas Generation: Key to Sustainable Waste Solutions -- 10.1 Introduction -- 10.2 Leachate Estimation Methods -- 10.2.1 Water Balance Method -- 10.3 Bigas Estimation Methods -- 10.3.1 LandGEM Model -- 10.3.2 Multiphase Model -- 10.4 Oum Azza Landfill Case Study -- 10.4.1 Leachate Estimation -- 10.4.2 Biogas Estimation -- 10.5 Conclusion -- References -- 11 Resources Recovery from Landfill Leachate: Current Status, Challenges, and Prospects -- 11.1 Introduction -- 11.2 Traditional Treatment -- 11.2.1 Biological Treatment -- 11.2.2 Chemical Treatment -- 11.2.3 Physical Treatment -- 11.3 Resource Recovery -- 11.3.1 Nutrients Recovery -- 11.3.2 Energy Recovery -- 11.3.3 Metal Recovery -- 11.3.4 HAs/FAs Recovery -- 11.3.5 Other Resources Recovery -- 11.4 Challenge and Prospects of Landfill Leachate Treatment -- 11.4.1 Traditional Treatment -- 11.4.2 Resource Recovery -- References -- 12 Leachate Discharge from a Public Landfill: Design and Sizing of a Treatment System -- 12.1 Introduction -- 12.2 Material and Methods -- 12.2.1 Presentation of the Study Area: City of Kenitra -- 12.2.2 Sampling Techniques -- 12.2.3 Physico-Chemical Analysis -- 12.2.4 Coagulation Flocculation Treatment -- 12.2.5 Physico-Chemical Characteristics of Leachate Discharge -- 12.2.6 Manual Screening -- 12.3 Calculation of Load Loss -- 12.4 Conclusion -- References.  
13 Leachate Management in Rio De Janeiro: A 2022 Overview -- 13.1 Introduction -- 13.1.1 General Objective -- 13.1.2 Specific Objectives -- 13.2 Methodology -- 13.3 Results -- 13.4 Conclusions -- Annex: Leachate Storage Volume Calculations for ERJ Landfills -- References.

---