

- | | |
|-------------------------|---|
| 1. Record Nr. | UNINA9910262960103321 |
| Titolo | Proceedings of the Royal Society of London : containing papers of a mathematical and phisical character |
| Pubbl/distr/stampa | London : Harrison and Sons, 1932 |
| Descrizione fisica | 705 p. : ill. ; 27 cm |
| Locazione | DINID |
| Collocazione | 15 ID A/4-77 |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
-
- | | |
|-------------------------|--|
| 2. Record Nr. | UNINA9910477060003321 |
| Autore | Evgrashkina Ekaterina |
| Titolo | |
| | // Ekaterina Evgrashkina |
| Pubbl/distr/stampa | Bern, Switzerland : , : Peter Lang International Academic Publishers, , 2019 |
| Descrizione fisica | 1 online resource (170 pages) |
| Disciplina | 016.4918 |
| Soggetti | Slavic languages - Grammar
Slavic languages - Verb |
| Lingua di pubblicazione | Russo |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | -- 1. -- 1.1.
-- 1.2.

« » -- 1.3.
-- 2. -- 2.1. |

. -- 2.2. «
»:
-- 2.3.
-- 3. :
-- 3.1.

(.) -- 3.2.
: « » .
. -- 4. «» :
-- 4.1.
-- 4.2.
-- 4.3.
--
4.4. ,
-- 4.5.
-- 4.6.
-- 4.7. , ,
-- 5. :
-- 5.1.
. "Deutsches
Roulette" (1991) -- 5.2.
. ("fin de siecle", 2000) .
("botanischer garten", 2004) -- 5.3. ():
"Uberganges" (2011) .-.
. -- 5.4. ? «»
. , . . --
-- .

Sommario/riassunto

-
.
,
, ,
.
, -
-

.

3. Record Nr.	UNINA9911019916803321
Autore	Fosso-Kankeu Elvis
Titolo	Customized Technologies for Sustainable Management of Industrial Wastewater : A Circular Economy Approach
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2025 ©2025
ISBN	1-394-21456-1 1-394-21455-3
Edizione	[1st ed.]
Descrizione fisica	1 online resource (636 pages)
Altri autori (Persone)	MasindiVhahangwele MareeJohannes MambaBhekie B
Disciplina	628.3
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Series Page -- Title Page -- Copyright Page -- Contents -- Preface -- Part I: Stepwise Treatment of Industrial Wastewater Using a Combination of Approaches -- Chapter 1 A Review of the Reducing and Alkalinity-Producing System (RAPS) for Acid Mine Drainage Neutralization -- 1.1 Background -- 1.1.1 AMD Generation -- 1.1.2 Effects of AMD on the Environment -- 1.1.3 AMD Treatment Options -- 1.1.3.1 Passive Treatment Systems -- 1.1.3.2 Selection Criteria -- 1.2 The Reducing and Alkalinity-Producing System (RAPS) as a Passive Treatment System -- 1.2.1 Setup of the RAPS -- 1.2.2 Principles of the RAPS -- 1.2.2.1 Sulfate-Reducing Bacteria -- 1.2.2.2 Limestone Dissolution -- 1.2.2.3 Metal Removal Processes -- 1.2.2.4 Performance of RAPS in Treating AMD -- 1.2.2.5 Advantages of RAPS -- 1.2.2.6 Disadvantages -- 1.2.3 Novelty Opportunities of the RAPS -- 1.2.4 Applicability of the RAPS in South Africa -- 1.3 Geochemical Modeling for the Prediction of the Dispersion of Metals in Water Systems -- 1.3.1 Equilibrium Models -- 1.3.1.1 PHREEQC -- 1.3.2 Kinetics Models -- 1.3.2.1 TOUGHREACT -- 1.3.3 Transport Models -- 1.3.3.1 MODFLOW -- 1.3.4 Empirical Modeling -- 1.4 Conclusion -- References -- Chapter 2 Novel Hybrid Nature-Based Solutions for the Sustainable

Treatment of Industrial Wastewater: Alkaline and Acid Mine Drainage --
2.1 Introduction -- 2.1.1 Importance of Industrial and Mining Waste
Water Treatment -- 2.1.2 Nature of Alkaline and AMD Water Influencing
Treatment Methods Toward Environmental and Public Health Protection
-- 2.1.2.1 Alkaline Wastewater -- 2.1.2.2 Acid Mine Drainage -- 2.1.3
Challenges with Conventional Treatment Methods -- 2.1.3.1 Alkaline
Wastewater -- 2.1.3.2 Acid Mine Drainage -- 2.2 Nature-Based
Treatment Options for Environmental and Public Health Protection --
2.2.1 Importance -- 2.2.2 Constructed Wetlands.
2.2.3 Bioremediation -- 2.2.3.1 Microbial Bioremediation -- 2.2.3.2
Phyco- and Phytoremediation -- 2.2.4 Natural Filtration Systems -- 2.3
NBS for Industrial and Mining Wastewater Treatment -- 2.3.1 Alkaline
Wastewater -- 2.3.2 Acid Mine Drainage -- 2.3.2.1 Sulfate-Reducing
Bacteria -- 2.3.2.2 Integrated Constructed Surface Water Wetlands and
Algae Pond Systems -- 2.3.2.3 Algal-Bacterial Integrated Ponding
System -- 2.3.2.4 Ecologically Engineered Wetlands -- 2.4 Novel
Hybrid NBS -- 2.4.1 Concept -- 2.4.2 Framework for Selecting Hybrid
NBS for Treating Alkaline and AMD Wastewater -- 2.4.3 Design
Principles for NBS for Treating Alkaline and AMD -- 2.4.4 Importance of
Addressing Sustainable Development Goals (SDGs) and Contributing to
the Global Sustainability Agenda -- 2.5 Conclusion -- References --
Chapter 3 Use of Chemical and Physical Techniques in Stepwise
Treatment of Industrial Wastewater -- 3.1 Introduction -- 3.2 Stepwise
Treatment of Industrial Wastewater Using Chemical Operations -- 3.2.1
Stepwise Removal of Heavy Metal Ions from Metallurgical Wastewater
Stream -- 3.2.1.1 Removal of Chromium and Other Heavy Metal Ions --
3.2.1.2 Removal of Heavy Metal Ions and Organic Pollutants in
Wastewater by Electrocoagulation -- 3.2.2 Stepwise Treatment of
Wastewater Streams from Automotive Assembly Operations -- 3.2.3
Stepwise Treatment of Wastewater Streams from Abattoir Processing
Industries -- 3.2.3.1 Dissolved Air Flotation and Anaerobic Treatment
-- 3.2.3.2 Physicochemical and Advanced Oxidation Processes for
Abattoir Wastewater Treatment -- 3.2.4 Stepwise Treatment of
Wastewater Streams from Pharmaceutical Operations -- 3.2.5 Stepwise
Treatment of Wastewater Streams from Dairy Processing Industries --
3.2.6 Stepwise Treatment of Wastewater Streams from Food Processing
Operations.
3.2.7 Stepwise Treatment of Wastewater Streams from Textile
Manufacturing -- References -- Chapter 4 Trends on the Occurrence,
Challenges, Migration, and Remediation of Emerging Contaminants in
Aquatic Environments -- 4.1 Introduction -- 4.2 Emerging
Contaminants in the Environment -- 4.3 Classes of Emerging
Contaminants -- 4.3.1 Personal Care Products -- 4.3.2
Pharmaceuticals -- 4.3.2.1 Different Type of Pharmaceutical
Compounds -- 4.3.3 Pesticides -- 4.4 Sources of Emerging
Contaminants -- 4.4.1 Agricultural Practices -- 4.4.2 Wastewater
Treatment Facilities -- 4.4.3 Landfill Leachates -- 4.4.4 Industrial
Effluents and Pharmaceutical Companies -- 4.4.5 Hospital Wastes --
4.4.6 Lifestyle Waste -- 4.5 The Effects of the Emerging Contaminants
-- 4.5.1 Effects on Human and Animal Health -- 4.5.2 Effects on the
Environment and Ecosystem -- 4.6 Variation of Emerging Contaminants
in Aqueous Environments -- 4.7 Required Limits of Potable Water
Quality Standards and Guidelines -- 4.8 Treatment of Emerging
Contaminants -- 4.8.1 Oxidation -- 4.8.1.1 Chlorination -- 4.8.1.2
Potassium Permanganate Solution -- 4.8.1.3 Ozonation -- 4.8.1.4
Adsorption -- 4.8.1.5 Filtration -- 4.8.1.6 Photocatalysis -- 4.8.1.7
Electro Fenton Process -- 4.8.1.8 Electrocoagulation -- 4.9
Conclusions -- 4.10 Future Research Outlook -- Acknowledgments --

References -- Chapter 5 An Update on the Progress, Trends and Challenges of Drinking Water Treatment and Provision -- 5.1 Raw Water -- 5.2 Drinking Water Treatment Process -- 5.3 Functionalities of Drinking Water Treatment Process -- 5.4 Final Water and Challenges -- 5.5 Distribution Water Challenges -- 5.6 Types of Disinfectants and Oxidants -- 5.6.1 Chlorine Gas -- 5.6.2 Chlorine Dioxide -- 5.6.3 Sodium Hypochlorite Solution -- 5.6.4 Calcium Hypochlorite -- 5.6.5 Chloramines -- 5.6.6 Ozonation -- 5.6.7 Ultraviolet Light (UV). 5.6.8 Photocatalysis -- 5.7 Role of Chlorine in Water Treatment -- 5.7.1 Aqueous Chlorine Chemistry -- 5.7.2 Organic Compounds -- 5.7.3 Inorganic Compounds -- 5.8 Effects of Chlorine as a Post-Disinfectant -- 5.9 Regulatory Requirements -- 5.10 Chlorine Decay -- 5.10.1 Chlorine Degradation in Water Distribution Network -- 5.10.1.1 Bulk Decay Reaction Mechanism -- 5.10.1.2 Wall Reaction Mechanism -- 5.11 Chlorine Decay Models -- 5.11.1 Zero-Order Model -- 5.11.2 First-Order Model -- 5.11.3 Second-Order Model -- 5.11.4 The Nth-Order Model -- 5.11.5 Determining the Bulk Reaction Order of the Samples -- 5.12 The Limitations of Traditional Chlorine Decay Models -- 5.13 Experimental Approaches -- 5.13.1 Bulk Chlorine Decay Using Analytical Methods -- 5.13.1.1 Effect of Water Indexes (Dissolved Organic Carbon, UV₂₅₄, Ammonia, and EEM) -- 5.13.1.2 Effect of Natural Organic Matters Toward Chlorine Decay -- 5.13.1.3 Effect of Temperature and pH -- 5.13.2 Wall Chlorine Decay Using Analytical Methods -- 5.13.2.1 The Effect of Biofilm -- 5.14 Simulations and Mathematical Estimates -- 5.14.1 Bulk Chlorine Decay Rate Using Simulations and Mathematical Estimates -- 5.14.1.1 Effect of Temperature on Bulk Chlorine Decay Rate (NOM and THMs) -- 5.14.1.2 Influence of Hydraulic Conditions -- 5.14.1.3 The Initial Chlorine Dose Effect on Bulk Decay Rate -- 5.15 The Rate Constant of Chlorine Decay with the Wall of Water Pipe -- 5.15.1 Effect of Hydraulic Conditions -- 5.16 Tools for Simulations and Mathematical Estimates -- 5.16.1 Integrated Chlorine Decay Mathematical Models Derived from Traditional Models -- 5.17 Software Packages for Chlorine Decay Simulations -- 5.17.1 EPANET Software -- 5.17.2 COMSOL Multiphysics Software -- 5.17.3 AQUASIM Software -- 5.17.4 Other Modeling Software -- 5.18 Challenges of Simulations -- 5.19 Conclusion and Avenues for Future Research. 5.19.1 Conclusion -- 5.19.2 Avenues for Future Research -- Acknowledgments -- References -- Part II: Treatment of Industrial Wastewater Using Sustainable Technologies that are Effective and Affordable -- Chapter 6 A Comprehensive Assessment of the Chemical-Based Technologies for Waste(Water) Treatment -- 6.1 Introduction -- 6.2 Overview of Chemical Treatment Technologies -- 6.2.1 Water Treatment Processes Based on Chemical Technology -- 6.2.1.1 Chemical Precipitation (Coagulation and Flocculation) -- 6.2.1.2 Disinfection -- 6.2.1.3 Adsorption -- 6.2.1.4 Advanced Oxidation Processes (AOPs) -- 6.2.1.5 Ion Exchange Water Treatment Process -- 6.3 Advantages of Chemical Technology Treatment Processes over Biological Processes -- 6.3.1 Limitations and Challenges -- 6.4 Overview on Technical Expertise -- 6.4.1 Technical Expertise Required in Chemical Technology Water Treatment Process -- 6.4.1.1 Expertise in Chemical Process Design -- 6.4.1.2 Expertise in Chemical Process Operation -- 6.4.1.3 Expertise in Chemical Process Optimization -- 6.4.1.4 Technical Expertise in Understanding Chemical Reactions, Kinetics, and Thermodynamics -- 6.5 Overview on Equipment and Machinery -- 6.5.1 Equipment and Machinery in Chemical Technology Processes for Water Treatment -- 6.5.1.1 Pumps -- 6.5.1.2 Mixers -- 6.5.1.3 Reactors -- 6.5.1.4 Filters -- 6.5.1.5 Disinfection Systems --

6.5.2 Integration of Equipment and Machinery -- 6.6 Overview Recent Chemical Materials Used in Wastewater Treatment Plants -- 6.6.1 Recent Chemical Materials Used in Wastewater Treatment Plants -- 6.6.1.1 Coagulants and Flocculants for Solid-Liquid Separation -- 6.6.1.2 Advanced Oxidation Processes (AOPs) Utilizing Ozone and Hydrogen Peroxide -- 6.6.1.3 Adsorbents and Ion Exchange Resins for Contaminant Removal -- 6.6.1.4 Advancements in Disinfectants for Microbial Control -- 6.7 Conclusions. Acknowledgment.

Sommario/riassunto

The book is essential for understanding innovative solutions to the critical challenges posed by increasing wastewater pollution and the urgent need for sustainable practices in light of climate change and resource scarcity. Increased population growth and climate change put continuous pressure on freshwater resources across the globe. The volume and diversity of pollutants in wastewater discharged from industry have significantly increased over the years, making conventional wastewater treatment systems unfit for managing industrial wastewater released into the environment. The limitations of existing treatments appear not only in the suitability of the technologies to abate emerging pollutants, but also in the approach used to mitigate the situation and ensure sustainability of the process. For wastewater treatment, the circular economy, which is based on the principles reduce, reuse, recycle, restore, and recover, will ensure that waste is minimized and the life-cycle value of natural resources and products is maximized. Considerable progress has been made in developing new technologies that can adequately address the issue. However, with larger volumes of wastewater to treat every day, the cost of treatment is overwhelming, necessitating the right combination of technologies that will promote the reuse of pollutants recovered during the treatment process to offset the treatment cost. Customized Technologies for Sustainable Management of Industrial Wastewater: A Circular Economy Approach presents fifteen comprehensive chapters that cover the sustainability of industrial wastewater treatment technologies with consideration to the circular economy. Readers will find the volume: Emphasizes the mechanisms and strategic combination of technologies that maximize the recovery of valuables during industrial wastewater treatment and deliver effluents treated to the acceptable standard; Discusses the characteristics, purity, and potential uses and applications of the recovered products; Focuses on the strategic development of technologies for the sustainable treatment of industrial wastewater at large. Audience Researchers, mining and industrial professionals, environmental managers, and policymakers involved in environmental, chemical, engineering, and mineral processing fields in the industries; water treatment plants managers and operators, water authorities, government regulatory bodies officers, and environmentalists.
