

1. Record Nr.	UNINA9910865233403321
Autore	Mannina Giorgio
Titolo	Frontiers in Membrane Technology : 7th IWA-RMTC 2024
Pubbl/distr/stampa	Cham : , : Springer, , 2024 ©2024
ISBN	9783031633577 9783031633560
Edizione	[1st ed.]
Descrizione fisica	1 online resource (221 pages)
Collana	Lecture Notes in Civil Engineering Series ; ; v.525
Altri autori (Persone)	NgHow Yong
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Members of the Scientific Committee of the 7th International Water Association Regional Membrane Technology Conference - IWA-RMTC 2024 -- Contents -- Resource Recovery from Wastewater -- Can Water Conserving Toilet be a Solution to Achieve Higher Energy Recovery from Co-digestion of Toilet Waste and Kitchen Waste? -- 1 Introduction -- 2 Materials and Methods -- 3 Results and Discussion -- 4 Conclusions -- References -- Mechanisms of Biochar-Mediated Promotion of Acidogenic Fermentation in Waste Activated Sludge and Acetic Acid Production Pathways -- 1 Introduction -- 2 Materials and Methods -- 2.1 Modified Sludge-based Biochar Preparation -- 2.2 Acid Production Batch Experiment Under Modified Biochar Pretreatment -- 3 Results and Discussion -- 3.1 Characterization of Modified Biochar -- 3.2 Effect of Modified Biochar on Acid Production -- 3.3 Enzyme Activity Analysis -- 3.4 An Exploration of Electronic Transfer Capabilities -- 3.5 Effect of Modified Biochar on Microbial Metabolic Processes -- 4 Conclusions -- References -- Electrodialysis as an Ammonium Reuse Process for Covering the Nitrogen Demand of an Industrial WWTP -- 1 Introduction -- 2 Materials and Methods -- 2.1 Experimental Set-up and Operating Conditions -- 2.2 LCD Experiments -- 2.3 Concentration Experiments -- 3 Results and Discussion -- 3.1 LCD Experiments -- 3.2 Concentration Experiments -- 4 Conclusions --

References -- Optimization of the Feeding Condition for Mixed Culture Photo Fermentative Hydrogen and Polyhydroxyalcanohates Production from Dark Fermentation Effluents -- 1 Introduction -- 2 Materials and Methods -- 2.1 Materials and Experimental Operating Conditions -- 2.2 Analytical Methods -- 3 Results and Discussion -- 4 Conclusions -- References -- Advancing Efficiency in EDBM: Investigating the Interplay of Pressure Variations and Volume Management.

1 Introduction -- 2 Materials and Methods -- 3 Results and Discussion -- 4 Conclusions -- References -- Domestic/Industrial Wastewater Treatment -- Combined Water Clarification -- 1 Introduction -- 2

Combined Water Clarification -- 3 DuOx Nozzle -- 4 OxTube Machine -- 5 Water Treatment Unit -- 6 Combined Applications -- 7

Conclusions -- References -- Zeolite Materials for the Removal of Pharmaceuticals from Aqueous Medium -- 1 Introduction -- 2 Materials and Methods -- 2.1 Sorbents -- 2.2 Adsorption

and Desorption Experiments -- 3 Results and Discussion -- 3.1

Characterization of Adsorbents -- 3.2 The Effect of the Initial

Concentrations -- 3.3 The Effect of Time Reaction -- 3.4 Regeneration

-- 3.5 Efficiency in the Treatment of Real Wastewater -- 4 Conclusions

-- References -- Removal of Selected PPCPs and Associated Bacterial

Community Variations in a Pilot Scale A/O-MBBR Reactor System -- 1

Introduction -- 2 Materials and Methods -- 2.1 System Setup

and Operation -- 3 Results and Discussion -- 3.1 Distribution

and Variation of PPCPs in the System -- 3.2 Removal Efficiency of PPCPs

-- 3.3 Bacterial Community Composition -- 4 Conclusions --

References -- Molecular-Level Insights into the Degradation

of Dissolved Organic Matter from Cyanobacteria-Impacted Water

by Electro-Oxidation and Electro-Fenton -- 1 Introduction -- 2

Materials and Methods -- 2.1 Electrode Material Preparation -- 2.2

Methods -- 3 Results and Discussion -- 4 Conclusions -- References

-- Development of Cellulose Filter Papers Modified with ZnO-Based

Nanoparticles to Instantly Disinfect Water with No Need for Energy -- 1

Introduction -- 2 Materials and Methods -- 2.1 ZnO-Based

Nanoparticles Synthesis -- 2.2 Modification of Filter Papers -- 2.3

Characterization of the Samples -- 2.4 Determination of Flow Rate

and the Bacterial Removal Efficiency of the Filter Papers.

3 Results and Discussion -- 4 Conclusions -- References -- Membrane

Bioreactors -- IFAS Intermittent Aeration Membrane Bioreactor System:

The Influence of Sludge Retention Time -- 1 Introduction -- 2 Materials

and Methods -- 3 Results and Discussion -- 4 Conclusions --

References -- Water Reuse from Wastewater: Comparison Between

Membrane Bioreactor and Ultrafiltration Process -- 1 Introduction -- 2

Materials and Methods -- 3 Results and Discussion -- 4 Conclusions --

References -- Kinetic Comparison of Attached and Suspended Biomass

in an IFAS-MBR System Operated Under Intermittent Aeration: Long-

Term Monitoring Under SRT Variation -- 1 Introduction -- 2 Materials

and Methods -- 3 Results and Discussion -- 4 Conclusions --

References -- Optimization of MBRs Through Integrated Modelling -- 1

Introduction -- 2 Performance Indicators -- 2.1 Effluent Quality -- 2.2

Energy Consumption -- 2.3 Operating Costs -- 2.4 GHC Emissions --

2.5 Membrane Fouling -- 2.6 Aeration -- 2.7 MBR Optimization -- 3

Conclusions and Recommendations -- References -- Removal

of Ibuprofen, Diclofenac and Metoprolol by Commercial Membranes --

1 Introduction -- 2 Materials and Methods -- 2.1 Materials -- 2.2

Methods -- 3 Results and Discussion -- 3.1 Cross Flow Experiment

of Individual Pharmaceuticals -- 3.2 Cross Flow Experiment

of Pharmaceuticals Mixture -- 4 Conclusions -- References -- MBR

Performance in a Rubber Smoked Sheet Plant: A Case Study of Small Agricultural Cooperatives -- 1 Introduction -- 2 Materials and Methods -- 2.1 Experimental Set-up -- 2.2 MBR Control -- 2.3 ASM3 Modified Modelling -- 3 Results and Discussion -- 3.1 MBR Performance -- 3.2 Biokinetic of MBR -- 4 Conclusions -- References.

Investigation of the Agricultural Reuse Potential of Urban Wastewater and Other Resources Derived by Using Membrane Bioreactor Technology Within the Circular Economy Framework -- 1 Introduction -- 2 Materials and Methods -- 2.1 Pilot Plant -- 3 Results

and Discussion -- 4 Conclusions -- References -- Towards a Unified Framework for Modelling of Bipolar Membrane Electrodialysis for Resource Recovery Processes -- 1 Introduction -- 2 Methodological Approach -- 3 Results and Discussion -- 3.1 Initialisation -- 3.2 N-tuple Level -- 3.3 Stack-Level -- 3.4 Input-Output Flows -- 4

Conclusion -- References -- Novel Membrane Materials and Hybrid Membrane Processes -- Improving Recovery of Valuable Bio-Products from Sewage Sludge Using Innovative Membrane Technologies -- 1

Introduction -- 2 Materials and Methods -- 3 Results and Discussion -- 4 Conclusions -- References -- Innovative Membrane Bioreactors for Advanced and Sustainable Wastewater Treatment -- 1 Introduction -- 2 Materials and Methods -- 3 Results and Discussion -- 4

Conclusions -- References -- Super-Hydrophilic and Positive Charged Pressure Retarded Osmosis Membrane for Efficient Ammonia Recovery and Energy Production -- 1 Introduction -- 2 Materials and Methods -- 3

Key Results and Discussion -- 3.1 RaPRO Membrane Properties -- 3.2 RaPRO Membrane Performance -- 4 Conclusions -- References -- Design of Cellulose Acetate Electrospun Membranes Loaded with N-doped Carbon Quantum Dots for Water Remediation -- 1 Introduction -- 2 Materials and Methods -- 2.1 Materials -- 2.2 Preparation

Techniques -- 2.3 Methods -- 3 Results and Discussion -- 4 Conclusions -- References -- Rotate Instead of Aerate More: The Rotating Hollow Fibre Membrane Bioreactor -- 1 Introduction -- 2

Materials and Methods -- 3 Results and Discussion -- 4 Conclusions -- References.

Magnetic Nanoparticles Decorated with Synthetic Zeolite Derived from Coal Fly Ash: Application to Removal of Heavy Metals and Organic Dyes -- 1 Introduction -- 2 Materials and Methods -- 2.1 Synthesis of NaX-UP and IL-NaX-UP Zeolites -- 2.2 Synthesis of Bare Fe<sub>3</sub>O<sub>4</sub> NPs and Fe<sub>3</sub>O<sub>4</sub> NPs-IL-NaX-UP Zeolites -- 3 Results and Discussion -- 3.1

Results -- 3.2 Discussion -- 4 Conclusions -- References -- Chemical Nanobubbles Controlled Guanidyl-Incorporated Nanofiltration Membrane with High Flux in Mg/Li Separation -- 1 Introduction -- 2

Materials and Methods -- 2.1 Fabrication of Chemical Nanobubble NF Membrane -- 2.2 Analysis Method -- 3 Results and Discussion -- 3.1 Characterization of G-NF/G-PEI-NF Membranes -- 3.2 Evaluation of Membrane Performance -- 3.3 Mechanism Analysis -- 4 Conclusions

-- References -- Keynote: Integration of Artificial Intelligence into Membrane-Based Water Treatment: From Mechanisms to Processes -- 1 Introduction -- 2 Materials and Methods -- 3 Results

and Discussion -- 3.1 Modeling and Mechanism Analysis of TrOC Rejection by Membranes -- 3.2 Modeling of Oxidation Kinetics in Catalytic Membrane at Different pH -- 3.3 Modeling of Fouling Behavior in Anaerobic Membrane Bioreactors (AnMBRs) -- 4

Conclusions -- References -- Membrane Fouling Mechanisms and Control -- Adaptive Optimal Model-Based Control of Membrane Systems Fouling: A Generic Robust Approach -- 1 Introduction -- 2

Materials and Methods -- 2.1 The Simulation Model: A Virtual Process to Evaluate the Approach -- 2.2 Modeling Fouling Dynamics -- 2.3

An Optimal Control Approach -- 2.4 An Adaptive Optimal Control Approach -- 3 Results and Discussion -- 4 Conclusions -- References -- Polyethersulfone Membrane Nano-Modified with MoS<sub>2</sub>-CeO<sub>2</sub> for the Effective Separation of Oil-in-Water Emulsions -- 1 Introduction -- 2 Materials and Methods -- 2.1 Materials. 2.2 Synthesis of MoS<sub>2</sub>-CeO<sub>2</sub>Nanohybrid and MoS<sub>2</sub>-CeO<sub>2</sub>/PES Membrane.

---