Contents

1 Introduction

2 Drinking Water
2.1 Drinking Water Production: Processes and Emerging Technologies . . . . . 11
M. ROUSTAN and C. CABASSUD
2.2 Adsorption of Organic Micropollutants onto Activated Carbon Fibers:
Cloth and Felt, ......................................................................................... 35
B. DELANGHE, L. MERCIER, and P. LE CLOIREC
2.3 Removal of Micropollutants in Some Ozone Contactors:
Efficiency and Simulation, ................................................................. 46
A. LAPLANCHE, C. LANGLAIS, D. WOLBERT and V. BOISDON
2.4 Pervaporation and Membrane Stripping: Potentialities on Micropollutants
Removal from Water, ............................................................................. 62
E. JULIEN and Y. AuRELLE

3 Air Pollution
3.1 Industrial Air Pollution: Removal of Dilute Gaseous Vapors, ................. 83
M.H. MANERO
3.2 Development of Trickle-Bed Air Biofilter, ........................................... 98
M. SUIDAN, R. SMITH, G. SORIAL and R. BRENNER
3.3 Deodorization in Wastewater Treatment Plants
by Wet-Scrubbing on Packed Column and Chlorine Oxidation, .............. 108
C. BONNIN and A. LAPLANCHE
3.4 Regeneration by Induction Heating of Granular Activated Carbon Loaded
with Volatile Organic Compounds, .................................................... 124
P. MOCHO and P. LE CLOIREC

4 Wastewater Treatment
A Biological Treatment
4.1 Effect of the Grease Solubilization and the Optimal Process Monitoring
on the Grease Aerobic Digestion, ....................................................... 143
E. PAUL, X. LEFEBVRE, M. MAURET and B. CAPDEVILLE
4.2 Membrane Gas Liquid Contactors in Water and Wastewater Treatment

P. APTEL, P. MOULIN, M. CLIFTON, J.-C. ROUCH and C. SERRA


C. FONADE

4.4 Multiphase Reactors for Biological Treatment of Urban Wastewaters

D. BASTOUL, M. ROUSTAN, B. CAPDEVILLE and J.M. AUDIC

B Physical-Chemical Treatment

4.5 Physical Chemical Treatments for Wastewater

Y. AURELLE

4.6 Hydrocyclone Based Treatment Methods for Oily Wastewaters

D. HADJIEV, I. SMYTH, M. THEW and Y. AURELLE

4.7 Application of Membrane Separation Processes to Oily Wastewater Treatment: Cutting Oil Emulsions

C. CABASSUD, H. MATAMOROS and Y. AURELLE

4.8 Electrochemical Degradation of Organic Pollutants for Wastewater Treatment: Oxidation of Phenol on PbO$_2$ Anodes

A. SAVALL and N. BEL HADJ TAHAR

4.9 Treatment of Aqueous Organic Wastes by Molecular Oxygen at High Temperature and Pressure: Wet Air Oxidation Process

J.N. FOUSSARD, M. CHAKCHOUK, G. DEIBER and H. DEBELLEFONTAINE

5 Hazardous Waste Management

5.1 Hazardous Wastes Treatments

G. ANTONINI

5.2 Advanced Method for the Treatment of Organic Aqueous Wastes: Wet Peroxide Oxidation - WPO®, Laboratory Studies and Industrial Development

H. DEBELLEFONTAINE, M. FALCON, K. FAJERWERG, P. REILHAC, P. STRIOLO and J.M. FOUSSARD

5.3 Heavy Metals Recovery by Electrolyzing Technique: The 3.RE. Technology

G. LACOSTE

5.4 An Overview of Plasma Arc Technology Applied Research Projects for the Vitrification of Hazardous Wastes

H. ZAGHLOL, E. SMITH and D. FREEMAN

5.5 Permeable Barriers to Remove Cd and Cr from Groundwater

J. RAEL and S. SHELTON

6 Soil and Groundwater Contamination

6.1 How Technology is Improving Decision Marking for Environmental Restoration

J. DITMARS
6.2 Soil Decontamination Using Electrokinetics, with Application to Urban Residual Sludges. 361
M. ASTRUC, S. TELLIER, I. LE HECHO, J. LARRANAGA and M. C. FOURCADE

6.3 A Systematic Approach to Groundwater Management. 372
R. HAUSLER, P. BÉRON and A. HADE

7 Environmental Trends and Policy Perspectives
R.K. JAIN and S. P. SHELTON. 383

7.1 Technology Transfer and Utilization. 384
7.2 Environmental Technologies and Regulations. 384
7.3 Holistic Approach to Environmental Problems. 384
7.4 Environmental Forecasting and Technology Trends. 385
7.5 Privatization of the Environmental Infrastructure. 386
7.6 Increased Use of Economic Instruments in Environmental Policy. 386
7.7 Industry Trends. 387
7.8 Industrial Ecology - Going Beyond Pollution Prevention. 387
7.9 Summary. 388
Subject Index. 393