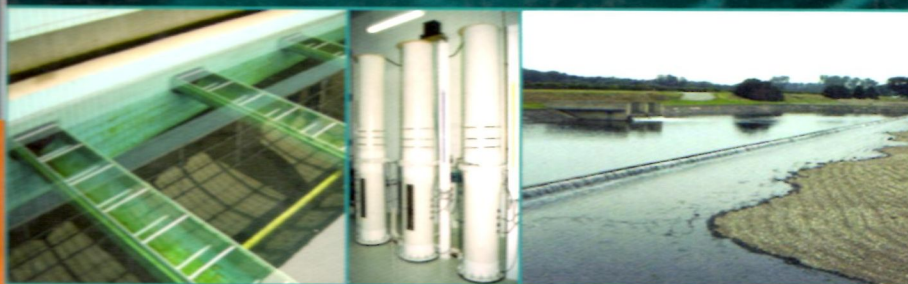


Recent Progress in Slow Sand and Alternative Biofiltration Processes
Edited by Rolf Gimbel, Nigel J.D. Graham and M. Robin Collins

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This book provides a state-of-the-art assessment on a variety of biofiltration systems from studies conducted around the world. The authors collectively represent a perspective from 23 countries and include academics, biofiltration system users, designers, and manufacturers.

It provides an up-to-date perspective on the physical, chemical, biological, and operational factors affecting the performance of slow sand filtration (SSF), riverbank filtration (RBF), soil-aquifer treatment (SAT), and biological activated carbon (BAC) processes. The main themes are: comparable overviews of biofiltration systems; slow sand filtration process behaviour, treatment performance and process developments; and alternative biofiltration process behaviour, treatment performance and process developments.

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Edited by

Prof. Dr.-Ing. habil. Rolf Gimbel

*IWW Rheinisch-Westfälisches Institut für Wasser, and Universität
Duisburg-Essen, Germany*

Prof. Dr. Nigel J.D. Graham

Imperial College London, UK

and

Prof. Dr. M. Robin Collins

University of New Hampshire, USA



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Contents

Preface	xiii
Programme Advisory Committee	xv
Part I General overview	
1 Integrated Comparison of Biofiltration in Engineered versus Natural Systems <i>G. Amy, K. Carlson, M.R.Collins, J. Drewes, S. Gruenheid and M. Jekel</i>	3
2 Removal of Microorganisms by Slow Sand Filtration <i>Y.J. Dullemont, J. F. Schijven, W.A.M. Hijnen, M. Colin, A. Magic-Knezev and W.A.Oorthuizen</i>	12
3 Assessing the Role of the Schmutzdecke in Pathogen Removal in Riverbank and Slow Sand Filtration <i>M. Unger and M.R. Collins</i>	21
4 30 Years of RWW's Practical Experience with an Advanced Microbiological Water Treatment System for Ruhr River Water - The "Muelheim Process 1976–2006" <i>G. Bundermann</i>	30
5 Advances in Hybrid Membrane Filtration System for Drinking Water Production <i>Y. Watanabe, T. Suzuki, T. Morita and G. Ozawa</i>	39
Part II Slow sand filtration – process behaviour	
6 Chironomid Midges: The Forgotten Water Industry Engineers? <i>S.P. Hurley and R.S. Wotton</i>	51
7 Role of Algal Growth and Photosynthesis in Slow Sand Filters as an Advanced Wastewater Treatment <i>N. Iwase, S. Kinoshita, M. Kojima and N. Nakamoto</i>	60
8 Development Pattern of Filamentous Diatom and its Condition related with Midge Larvae in Slow Sand Filter <i>N. Nakamoto and H. Kato</i>	68

9	The Effect of Water Temperature on the Slow Sand Filter Process <i>H. Jabur</i>	74
10	Mishaps Linked to Incorrect Use of Slow Sand Filters <i>J. Martensson and H. Jabur</i>	78
11	Dissolved Oxygen Issues with Granular Activated Carbon Sandwich™ Slow Sand Filters <i>M.E.J. Steele, H.L. Evans, J. Stephens, A.J. Rachwal and B.A. Clarke</i>	83
12	Numerical Simulation of Slow Sand Filtration and Parameter Estimation of Relevant Processes <i>M. Rödelisperger</i>	95
13	Use of a Novel Simulation Model to Define the Behaviour of Covered and Uncovered Slow Sand Filters <i>L.C. Campos, S.R. Smith and N.J.D. Graham</i>	104
14	Characteristics of Straining of <i>Escherichia coli</i> in Saturated Porous Media <i>J.W. Foppen, M. van Herwerden and J.F. Schijven</i>	113
Part III Slow sand filtration – treatment performance		
15	The Removal of Turbidity in a Multistage Slow Sand Pilot-Plant Under Challenging Conditions <i>W.B. Anderson, J.L. DeLoyde, R.A. LeCraw, M. Galan, S.A. Cleary and P.M. Huck</i>	125
16	Removal of <i>Cryptosporidium</i> oocysts and <i>Giardia</i> cysts by Pilot-Scale Multistage Slow Sand Filtration <i>J.L. DeLoyde, W.B. Anderson, S.A. Cleary, S. Ndongue, R.A. LeCraw, M. Galan and P.M. Huck</i>	133
17	Fecal Contamination Indicator Organisms in Slow Sand Filters <i>H. Petry-Hansen, H. Steele, M. Grooters, J. Wingender and H.-C. Flemming</i>	143
18	Microbiological Conditions Before and After Cleaning in Slow Sand Filters under Tropical Conditions <i>L.D. Sánchez, J. Latorre, G. Galvis and J.T. Visscher</i>	152
19	Biofiltration of Microcystin Toxins: An Australian Perspective <i>L. Ho, D. Hoefel, T. Meyn, C.P. Saint and G. Newcombe</i>	162

20	Removal of Cyanobacterial Toxins (Microcystins) during Slow Sand and Bank Filtration <i>G. Grützmacher, G. Wessel, I. Chorus and H. Bartel</i>	171
21	Removal of <i>Microcystis Aeruginosa</i> and Microcystins by Slow Sand Filtration: a Pilot Scale Study <i>J.C. Sá and C.C.S. Brandão</i>	178
22	Behavior of Selected Drugs During Slow Sand Filtration <i>B. Kuhlmann, N. Zullei-Seibert, J. Nolte and M. Grote</i>	188
23	Down-Scaled Study of Slow Sand Filtration of Secondary Effluents <i>G.B. Ari and A. Adin</i>	194
24	Performance Evaluation of Three Slow Sand Filters <i>A. Alicea, J.C. Robles, H. Guillont and R. A. Rios</i>	206

Part IV Slow sand filtration – process developments

25	Impacts of Chemical Pre-Treatment on Slow Sand Filtration. <i>C.C. Dorea and B.A. Clarke</i>	215
26	Removal of Humic Substances in Slow Sand and in Slow Sand/Activated Carbon Filtration Using Ozone and Hydrogen Peroxide as Pre-Oxidants <i>L. Di Bernardo and E.P. Tangerino</i>	224
27	Covering Slow Sand Filters; Qualitative and Operational Aspects <i>J. Abrahamsson and P. Dromberg</i>	231
28	Robotic Cleaning of Slow Sand Filters Improves Filter Quality <i>J. Back</i>	240
29	Comparison between Traditional and Under-water Rinsing Methods of Slow Sand Filters <i>H. Jabur and J. Mårtensson</i>	247
30	Extension of Slow Sand Filter Running Times by Protection Layers <i>H.-J. Mälzer and R. Gimbel</i>	251
31	Study on the Application of Alternative Filter Materials Using Slow Sand Filtration <i>U. Hütter and F. Remmler</i>	260

32	The Operation, Flow Conditions and Microbial Reductions of an Intermittently Operated, Household-Scale, Slow Sand Filter <i>M.A. Elliot, C.E. Stauber, F. Koksai, K.R. Liang, D.K. Huslage, F.A. DiGiano and M.D. Sobsey</i>	268
33	Intermittent Slow Sand Filters for Household Use – A Field Study in Haiti <i>D. L. Baker and W. F. Duke</i>	278
34	Appropriate Technology for the Treatment of Drinking Water in Roche, Tanzania <i>S.I. Pumphrey, D.W. Divilbiss and D.B. Oerther</i>	283

Part V Alternative biofiltration – process behaviour

35	Biomass Development in Biological Activated Carbon Filters <i>L.T.J. van der Aa, A. Magic-Knezev, L.C. Rietveld and J.C. van Dijk</i>	293
36	Nutritional Versatility of Two <i>Polaromonas</i> Related Bacteria Isolated from Biological Granular Activated Carbon Filters <i>A. Magic-Knezev and D. van der Kooij</i>	303
37	Biological Fouling of Structures in Roughing Filters Used Prior to Slow Sand Filtration <i>M.J. Chipps, R.G.W. Bayley, M.E. Steele, R. White, A. Mikol, E. Fricker and C.S.B Fitzpatrick</i>	312
38	Influence of Hydraulic Retention Time on the Treatment Efficiency of a Biological Aerated Filter with Shale Gravel Media <i>L. Qiu, J. Ma and L. Zhang</i>	321
39	Influence of Applied Loading on the Competition between Nitrifiers and Heterotrophs in a Two-Stage Submerged Biofilter <i>Y.Z. Peng, H.D. Wang, S.Y. Wang and S.J. Zhang</i>	329

Part VI Alternative biofiltration – treatment performance

40	The Removal of Green Fluorescent Labelled <i>Escherichia Coli</i> by Pilot Scale Drinking Water Biofilters <i>M.Silva, S. McLellan and J. Li</i>	337
41	Removal and Inactivation of Waterborne Viruses Using Zero-Valent Iron <i>Y. You, J. Han, L. Zhang, Y. Jin and P.C. Chiu</i>	345

42	Removal of MIB and Geosmin by Full-Scale Biological Sand Filters <i>D.H. Metz, R.C. Pohlman, J. Vogt and R.S. Summers</i>	352
43	Removal of Geosmin and MIB in Biofilters - On the Role of Biodegradation and Adsorption <i>W. Uhl, F. Persson, G. Heinicke, M. Hermansson and T. Hedberg</i>	360
44	Biodegradation of MIB and Geosmin in Biological Sand and BAC Filters: Acclimation, Steady-State and Varying Influent Conditions <i>R.S. Summers, S. Chae, S.M. Kim and H.W. Ahn</i>	369
45	Microcystin-LR Removal by Bench Scale Biologically-Activated-Carbon Filters <i>E. Mesquita, J. Menaia, M.J. Rosa and V. Costa</i>	373
46	Removal of Organic Pollutants from Micro-polluted Source Water by O ₃ - BAC Process <i>Z.-Y. Wang, H.-J. Han, W.-C. Ma and M. Xue</i>	384
47	Iron and Manganese Removal by Multi-Stage Filtration (MSF) <i>L.D. Sánchez and L.M. Burbano</i>	389
Part VII Alternative biofiltration – process developments		
48	Ozonation/Biofiltration for Treatment of Humic Surface Water <i>H. Ødegaard, E. Melin and T. Leiknes</i>	397
49	Ozonation/Biofiltration with Calcium Carbonate as Biofilter Media <i>E. Melin, R. Skog and H. Ødegaard</i>	406
50	The Effect of Permanganate Preoxidation on Biomass Nitrification <i>Z. Ren and M. Jun</i>	414
51	Integrated Biological Filtration and Reverse Osmosis Treatment of Cold Poor Quality Groundwater on the North American Prairies <i>H. Peterson, R. Pratt, R. Neapetung and O. Sortehaug</i>	424
52	Heterotrophic Denitrification in Drinking Water Treatment - Results from Pilot Plant Experiments in Mashhad / Iran <i>O. Dördelmann, P. Buchta, S. Panglisch, F. Klegraf, A. Moshiri and A. Emami</i>	433

53	A Biological Filtration Process for Denitrification with Polycaprolactone as Solid Substrate in a Rotating Reactor <i>A. Boley, I. Frommert and W.-R. Müller</i>	443
54	Biological Denitrification of Ground Water – 8 Years Full Scale Experiences with the BIODEN-Process <i>F. Hell</i>	451
55	Alternative Low Density Media For Use In Biological Roughing Filtration Prior To Slow Sand Filtration <i>R.G.W. Bayley, M.J. Chipps, M. Steele, R. White, A. Mikol and C.S.B. Fitzpatrick</i>	460
56	Assessment of Roughing Filtration for Pretreatment of Urban Wetland Waters <i>E. Lin, J. Hutson, C. Le Gal La Salle, P. Dillon, D. Page and P. Pavelic</i>	465
57	Performance of a Direct Horizontal Roughing Filtration (DHRF) System in Treatment of Highly Turbid Water <i>A.H. Mahvi, M. Ahmadi Moghaddam, S. Nasserri and K. Naddafi</i>	470
58	Retention of Hygienically Relevant Microorganisms from Storm Water Effluents by Sand Filters <i>S. Grobe, H. Petry-Hansen, M. Uhl and H.-C. Flemming</i>	474
59	Submerged Biological Aerated Filter for Pretreatment of Potable Water in China <i>J.J. Chen</i>	480
60	Effects of Inlet Type and Reactor Style on Biological Aerated Filter Backwashing <i>H.-J. Han, W.-C. Ma, J.-H. Huang, D. Zhong, M. Xue and Z.Y. Wang</i>	484
61	Intermittent Filtration of Bacteria and Colloids in Porous Media <i>A.A. Keller and M. Auset</i>	490
62	Technical Evaluation of Rainwater Harvesting Filtration Systems in India <i>D. Khare, Ramakant and C.S.P. Ojha</i>	495
63	Biological Filtration of Organic Solid Materials from Municipal Wastewater with the Aerated Constructed Wetland <i>D.-S. Kim, J.-H. Yoon, S.-C Kim and D.-K. Lee</i>	500

64	Method for Calculation of Filtration in Layered Filters (Linear Mass Exchange Kinetics) <i>V.L. Polyakov and V.B. Sidor</i>	506
65	Multi-Stage Filtration (MSF) to Prevent Biofilm Growth in a Distribution Network <i>L.D. Sánchez, L.M. Burbano and A. Sánchez</i>	511
Part VIII River bank filtration and groundwater recharge		
66	Bank Filtration and Groundwater Recharge for Treatment of Polluted Surface Waters <i>M. Jekel and S. Gruenheid</i>	519
67	Classification of Riverbank Filtration Sites and Removal Capacity <i>C. Skark, F. Remmler and N. Zullei-Seibert</i>	530
68	Efficiency of Riverbank Filtration Considering the Removal of Pathogenic Microorganisms of the River Rhine <i>H.-P. Rohns, C. Forner, P. Eckert, and R. Irmischer</i>	539
69	Changes in DOC Fractions in the Flow Regime of a Riverbank Filtration System <i>K. Wichmann, C. Schlinke and M. Marschke</i>	547
70	Behaviour of <i>Cryptosporidium</i> Oocysts and <i>Giardia</i> Cysts during Artificial Groundwater Recharge <i>U. Hütter, G. Preuß and N. Zullei-Seibert</i>	552
71	Assessing the Impact of Local Boundary Conditions on the Fate of Organic Micropollutants during Underground Passage <i>C.K. Schmidt, F.T. Lange and H.J. Brauch</i>	561
72	Deep Bed Regeneration of Infiltration Basins <i>M. Schöpel and H. Losen</i>	570
Author index		575
Keyword index		579

Preface

Slow sand filtration is typically cited as being the first “engineered” process in drinking water treatment. Proven modifications to the conventional slow sand filtration process, the awareness of induced biological activity in riverbank filtration systems, and the growth of oxidant-induced biological removals in more rapid-rate filters, e.g. biological activated carbon, demonstrate the renaissance of biofiltration as a treatment process that remains viable for both small, rural communities and major cities. Biofiltration is expected to become even more common in the future as efforts intensify to decrease the presence of disease-causing microorganisms and disinfection by-products in drinking water, to minimize microbial regrowth potential in distribution systems, and where operator skill levels are emphasized.

As a contribution to this growing interest in slow sand and alternative biofiltration systems, the editors with the assistance of others, have held three previous international conferences on this theme beginning in London (November 1988), New Hampshire (USA-October 1991), and London and Amsterdam (April 1996). A fourth conference, held in Mülheim, Germany (May 2006), aimed to build on the success and momentum of the previous meetings by providing an updated perspective on the physical, chemical, biological, and operational factors affecting the performance of slow sand filtration (SSF), riverbank filtration (RBF), soil-aquifer treatment (SAT), and biological activated carbon (BAC) processes. The main themes of the conference encompassed: comparable overviews of biofiltration systems; slow sand filtration process behavior, treatment performance and process developments; and alternative biofiltration process behaviors, treatment performances, and process developments.

Compiled from the contributors to the 4th *International Slow Sand and Alternative Biological Conference*, this book provides a state-of-the-art assessment on a variety of biofiltration systems from studies conducted around the world. The authors collectively represent a perspective from 23 countries and include academicians, biofiltration system users, designers, and manufacturers.

The editors would like to give special recognition to the conference sponsors and supporters including the IWA (UK), Federal Ministry of Education and Research (Germany), IWW Water Centre (Germany), RWE Aqua (Germany), Thames Water Utilities (UK), RWW (Germany), Amsterdam Water Supply (The Netherlands), Zürich Water Supply (Switzerland), AWWA Research Foundation (USA), University of Duisburg/Essen (Germany), Imperial College London (UK), and the Water Treatment Technology Assistance Center at the University of New Hampshire (USA). The editors extend appreciation to the distinguished members of the Programme Advisory Panel (listed separately) for their assistance in the selection of the conference papers. Finally, the editors wish to gratefully acknowledge Stefan Panglisch, Vaso Partinoudi, and especially Hans-Joachim Mälzer for their administrative assistance. The conference was truly an international enterprise and

such collaborative efforts are just one reason why biological filtration will continue its worldwide evolution.

R. Gimbel (University of Duisburg-Essen, Germany)

N.J.D. Graham (Imperial College London, UK)

M.R. Collins (University of New Hampshire, USA)

May 2006

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