Water Science and Technology

Vol. 25. N°10

MEMBRANE TECHNOLOGY IN WASTEWATER MANAGEMENT

MEMBRANE TECHNOLOGY IN WASTEWATER MANAGEMENT

Proceedings of the International Specialised Conference held in Cape Town, South Africa, 2–5 March 1992

Editors

O. O. HART* and C. A. BUCKLEY**

* Water Research Commission, P.O. Box 824, Pretoria, 0001 South Africa

** Department of Chemical Engineering, University of Natal, King George V Avenue, Durban 4001, South Africa



PERGAMON PRESS

Oxford · New York · Seoul · Tokyo

CONTENTS

Preface vii

G. R. BOTHA, R. D. SANDERSON and C. A. BUCKLEY: Brief historical review of membrane development and membrane applications in wastewater treatment in Southern Africa 1

A. G. FANE, A. R. AWANG, M. BOLKO, R. MACOUN, R. SCHOFIELD, Y. R. SHEN and F. ZHA: Metal recovery from wastewater using membranes 5

T. BILSTAD, M. MADLAND, E. ESPEDAL and P. H. HANSSEN: Membrane separation of raw and anaerobically digested pig manure 19

W. R. ROSS, J. P. BARNARD, N. K. H. STROHWALD, C. J. GROBLER and J. SANETRA: Practical application of the ADUF process to the full-scale treatment of a maize-processing effluent 27

G. E. RENCKEN and C. A. BUCKLEY: Dewatering sludges using a novel membrane technology 41

R. C. SQUIRES: Removal of heavy metals from industrial effluent by crossflow microfiltration 55

N. K. H. STROHWALD and E. P. JACOBS: An investigation into UF systems in the pretreatment of seawater for RO desalination 69

J. J. SCHOEMAN, J. F. VAN STADEN, H. M. SAAYMAN and W. A. VORSTER: Evaluation of reverse osmosis for electroplating effluent treatment 79

N. K. H. STROHWALD and W. R. ROSS: Application of the ADUF^{R} process to brewery effluent on a laboratory scale 95

E. DRIOLI: Membrane operations for the rationalization of industrial productions 107

D. W. F. TURPIE, C. J. STEENKAMP and R. B. TOWNSEND: Industrial application of formed-in-place membrane ultrafiltration and automated membrane-forming in the treatment and recycle of rinse-water during the scouring of raw wool 127

J. A. C. COWAN, F. MACTAVISH, C. J. BROUCKAERT and E. P. JACOBS: Membrane treatment strategies for red meat abattoir effluents 137

V. L. PILLAY and C. A. BUCKLEY: Cake formation in cross-flow microfiltration systems 149

A. ZAIDI, K. SIMMS and S. KOK: The use of micro/ultrafiltration for the removal of oil and suspended solids from oilfield brines 163