

INDIVIDUAL PUBLICATIONS FOR MR CJ BROUCKAERT

FOR PERIOD 2001 TO 2005

Conference Proceedings :

1. **BROUCKAERT, C.J.**, HANEKOM, D.*, WOODHOUSE, C.* and BUCKLEY, C.A., 'Optimal Location of a Membrane Plant in a Power Station', Eskom International Conference on Power Plant Chemistry and Water Treatment, Eskom Conference Centre, Midrand, South Africa, 3-5 April 2001. (Paper)
2. BUCKLEY, C.A., **BROUCKAERT, C.J.** and GIANADDA, P., 'Water Pinch Analysis : Minimisation of Water and Wastewater in the Process Industry', European Commission COST 624 (European Co-operation in the Field of Scientific and Technical Research) "Optimal Management of Wastewater Systems", Working Group No. 5 Treatment Scenarios, Bologna, Italy, 26-27 April 2001. (Paper)
3. DAMA, P., BELL, J., FOXON, K., NAIDOO, V., **BROUCKAERT, C.J.**, BUCKLEY, C.A. and STUCKEY, D.*, 'The Anaerobic Baffled Reactor for the Treatment of Domestic Wastewater in Dense Peri-urban Communities', Part 2 : Proceedings of the 9th World Congress on Anaerobic Digestion 2001, Antwerpen, Belgium, 385-388, 2-5 September 2001. (Poster)
4. DAMA, P., BELL, J., FOXON, K., NAIDOO, V., **BROUCKAERT, C.J.**, BUCKLEY, C.A. and STUCKEY, D.*, 'The Anaerobic Baffled Reactor for the Treatment of Domestic Wastewater in Dense Peri-urban Communities', Part 2 : Proceedings of the 9th World Congress on Anaerobic Digestion 2001, Antwerpen, Belgium, 385-388, 2-5 September 2001. (Poster)
5. DAMA, P., GOVENDER, K., HUANG, J., FOXON, K., BELL, J., **BROUCKAERT, C.J.**, BUCKLEY, C.A., NAIDOO, V. and STUCKEY, D.*, 'Flow Patterns in an Anaerobic Baffled Reactor', Part 1 : Proceedings of the 9th World Congress on Anaerobic Digestion 2001, Antwerpen, Belgium, 793-798, 2-5 September 2001. (Paper)
6. HUANG, T-H., **BROUCKAERT, C.J.**, DOCRAT, M.*, PRYOR, M.* and BUCKLEY, C.A., 'A Computational Fluid Dynamics and Experimental Study of an Ozone Contactor', Proceedings Volume 1, The International Water Association Conference on Water and Wastewater Management for Developing Countries, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 498-507, 29-31 October 2001. (Paper)
7. GIANADDA, P., **BROUCKAERT, C.J.**, SAYER, R.* and BUCKLEY, C.A., 'The Application of Pinch Analysis to Water, Regent and Effluent Management in a Chlor-Alkali Facility', Proceedings Volume 1, The International Water Association Conference on Water and Wastewater Management for Developing Countries, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 743-753, 29-31 October 2001. (Paper)
8. FOXON, K.M., **BROUCKAERT, C.J.**, BUCKLEY, C.A. and ROZZI, A*, 'Denitrification Activity Measurements Using An Anoxic Titration (pHstat) Bioassay', Proceedings Volume 1, The International Water Association Conference on Water and Wastewater Management for Developing Countries, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 277-285, 29-31 October 2001. (Paper)
9. FOXON, K.M., DAMA, P., **BROUCKAERT, C.J.** and BUCKLEY, C.A., 'Design Considerations for the Implementation of an Anaerobic Baffled Reactor in Low-income Settlements in Kwa-Zulu Natal', Proceedings Volume 1, The International Water Association Conference on Water and Wastewater Management for Developing Countries, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 644-655, 29-31 October 2001. (Paper)
10. DAMA, P., BELL, J., FOXON, K.M., **BROUCKAERT, C.J.**, HUANG, T., BUCKLEY, C.A., NAIDOO, V., and STUCKEY, D.*, 'Pilot-scale Study of an Anaerobic Baffled Reactor for the Treatment of Domestic Wastewater', Proceedings Volume 1, The International Water Association Conference on Water and

Wastewater Management for Developing Countries, Putra World Trade Centre, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 656-664, 29-31 October 2001. (Paper)

11. BISCOS, C., MULHOLLAND, M., LE LANN, M.-V.*, BUCKLEY, C.A., **BROUCKAERT, C.J.**, BAILEY, R. and ROUSTAN, M.*, 'Optimal Operation of a Potable Water Distribution Network', Proceedings Volume 1, The International Water Association Conference on Water and Wastewater Management for Developing Countries, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 72-83, 29-31 October 2001. (Paper)
12. PASTRE, A., MULHOLLAND, M., **BROUCKAERT, C.J.**, BUCKLEY, C.A., LE LANN, M.-V.*, ROUSTAN, M.*, NAIDOO, D. And MABEER, V., 'Modelling and Control of Potable Water Chlorination', Proceedings Volume 1, The International Water Association Conference on Water and Wastewater Management for Developing Countries, Putra World Trade Centre, Kuala Lumpur, Malaysia, pp. 237-248, 29-31 October 2001. (Paper)
13. BISCOS, C., MULHOLLAND, M., LE LANN, M.-V.*, BUCKLEY, C.A., **BROUCKAERT, C.J.** and ROUSTAN, M., 'Water Distribution Network Optimisation', Water Institute of Southern Africa (WISA), Biennial Conference & Exhibition, ICC, Durban, South Africa, 19-23 May 2002. (Paper)
14. GIANADDA, P., **BROUCKAERT, C.J.**, SAYER, R.* and BUCKLEY, C.A., 'Process Water Pinch Analysis Guides Water, Reagent and Effluent Management - Selected Case Studies from the Chlor-alkali Industry', Water Institute of Southern Africa (WISA), Biennial Conference & Exhibition, ICC, Durban, South Africa, 19-23 May 2002. (Paper)
15. PASTRE, A., MULHOLLAND, M., LE LANN, M.-V.*, BUCKLEY, C.A., **BROUCKAERT, C.J.**, ROUSTAN, M.* and MABEER, V.*, 'Control of Potable Water Chlorination', Water Institute of Southern Africa (WISA), Biennial Conference & Exhibition, ICC, Durban, South Africa, 19-23 May 2002. (Poster)
16. HUANG, T., **BROUCKAERT, C.J.**, PRYOR, M.*, DOCRAT, M.* and BUCKLEY, C.A., 'Application of Computational Fluid Dynamics Modelling on an Ozone Contactor', Water Institute of Southern Africa (WISA), Biennial Conference & Exhibition, ICC, Durban, South Africa, 19-23 May 2002. (Poster)
17. **BROUCKAERT, C.J.**, SCHNEIDER, J., MANSFIELD, M.* and BUCKLEY, C.A., 'Water Pinch Analysis as a Transparent Tool for the Co-regulation of Industrial Processes', Water Institute of Southern Africa (WISA), Biennial Conference & Exhibition, ICC, Durban, South Africa, 19-23 May 2002. (Poster)
18. GIANADDA, P., **BROUCKAERT, C.J.** AND BUCKLEY, C.A., 'The Application of Combined Water and Materials Pinch Analysis to a Chlor-alkali Plant', Proceedings of the South African Chemical Engineering Congress, Chemical Engineers Competing in the Global Economy, Sun City, South Africa, 3-5 September 2003, ISBN No. 0-958-46095-7. (Paper)
19. HUANG, T.-H., **BROUCKAERT, C.J.** And BUCKLEY, C.A., 'A Computational Modelling and Kinetic Study of an Ozone Contactor', Proceedings of the South African Chemical Engineering Congress, Chemical Engineers Competing in the Global Economy, Sun City, South Africa, 3-5 September 2003, ISBN No. 0-958-46095-7. (Paper)
20. GOVENDER, T., **BROUCKAERT, C.J.** And DAVIS, S.B., 'Investigation into the Operation of a Novel Clarifier Design for Sugar Cane Juice Clarification', Proceedings of the South African Chemical Engineering Congress, Chemical Engineers Competing in the Global Economy, Sun City, South Africa, 3-5 September 2003, ISBN No. 0-958-46095-7. (Poster)
21. BISCOS, C., MULHOLLAND, M., LE LANN, M.-V., BUCKLEY, C.A. And **BROUCKAERT, C.J.**, 'Optimisation Techniques Applied to a Potable Water Distribution System', Proceedings of the South African Chemical Engineering Congress, Chemical Engineers Competing in the Global Economy, Sun City, South Africa, 3-5 September 2003, ISBN No. 0-958-46095-7. (Poster)
22. GIANADDA, P., **BROUCKAERT, C.J.** And BUCKLEY, C.A., 'The Optimisation of an Ion-exchange Demineralisation Plant Using Combined Water and Materials and Pinch Analysis', Proceedings of the

- South African Chemical Engineering Congress, Chemical Engineers Competing in the Global Economy, Sun City, South Africa, 3-5 September 2003, ISBN No. 0-958-46095-7. (Poster)
23. JEAN, R., **BROUCKAERT C.J.**, MULHOLLAND, M. And BUCKLEY, C.A., 'Modelling and Control of Cooling Water Circuit at a Power Station, Proceedings of the South African Chemical Engineering Congress, Chemical Engineers Competing in the Global Economy, Sun City, South Africa, 3-5 September 2003, ISBN No. 0-958-46095-7. (Poster)
 24. BISCOS, C., **BROUCKAERT, C.J.**, MULHOLLAND, M. And BUCKLEY, C.A., 'Optimal Operation of a Potable Water Distribution Network', City Engineers Strategies Conference, Cape Town International Convention Centre, Cape Town, 19-21 November 2003. (Paper)
 25. **BROUCKAERT, C.J.**, HARRISON, J., FOXON, K., RODDA, N., AUSTIN, A. And BUCKLEY, C.A., 'A Mathematical Analysis of the Drying Mechanisms in a Growing Heap of Faeces', 1st International Conference on Onsite Wastewater Treatment and Recycle, Esplande Hotel Fremantle, Western Australia, 11-13 February 2004. (Ref paper)
 26. **BROUCKAERT, C.J.**, GIANADDA, P. and BUCKLEY, C.A., 'Process Integration for Water and Energy Management', Waste Management Emissions & Recycling in the Metallurgical and Chemical Process Industries Conference, Mintek Conference Centre, Randburg, Gauteng, South Africa, 18-19 March 2004. (Paper)
 27. JEAN, R., **BROUCKAERT, C.J.**, MULHOLLAND, M. And BUCKLEY, C.A., 'Water Management in Zero Liquid Waster Power Station', Proceedings of the 2004 Water Institute of Southern Africa (WISA) Biennial Conference and Exhibition, Cape Town International Convention Centre, Cape Town, South Africa, 2-6 May 2004, pp. 673-682, ISBN 1-920-01728-3. (Poster)
 28. TELUKDARIE, A., **BROUCKAERT, C.J.** And MULHOLLAND, M., 'An Optimization Tool for Cleaner Production in the Metal Finishing Industry', Proceedings of the 2004 Water Institute of Southern Africa (WISA) Biennial Conference and Exhibition, Cape Town International Convention Centre, Cape Town, South Africa, 2-6 May 2004, pp. 99-107, ISBN 1-920-01728-3. (Paper)
 29. **BROUCKAERT, C.J.**, NAIDU, T.*, HUANG, T. And BUCKLEY, C.A., 'Upgrading a Potable Water Clarifier Using Computational Fluid Dynamic Modelling', Proceedings of the 2004 Water Institute of Southern Africa (WISA) Biennial Conference and Exhibition, Cape Town International Convention Centre, Cape Town, South Africa, 2-6 May 2004, pp. 1189-1195, ISBN 1-920-01728-3. (Paper)
 30. FOXON, K.M., **BROUCKAERT, C.J.**, REMIGI, E. And BUCKLEY, C.A., 'Biochemical Modelling of the Anaerobic Baffled Reactor', Proceedings of the 2004 Water Institute of Southern Africa (WISA) Biennial Conference and Exhibition, Cape Town International Convention Centre, Cape Town, South Africa, 2-6 May 2004, pp. 1435-1446, ISBN 1-920-01728-3. (Paper)
 31. HUANG, T., **BROUCKAERT, C.J.** And BUCKLEY, C.A., 'Integration of CFD Modelling and Kinetic Study to Improve the Control Strategy of an Ozone Contractor', Proceedings of the 2004 Water Institute of Southern Africa (WISA) Biennial Conference and Exhibition, Cape Town International Convention Centre, Cape Town, South Africa, 2-6 May 2004, pp. 1494-1502, ISBN 1-920-01728-3. (Paper)
 32. RIDGWAY, T., BURNETT, H., **BROUCKAERT, C.J.**, HARRISON, J.* And BUCKLEY, C.A., 'A Mathematical Analysis of the Drying of Faeces in a Urine Diversion Toilet', IWA Specialist Conference on Water and Wastewater Management for Developing Countries (WAMDEC 2004) : Innovative And Sustainable Approaches For Serving The Poor, Elephant Hills Hotel, Victoria Falls, Zimbabwe, 28-30 July 2004, Ed. K Mathew & I Nhapi, ISBN 1-84339-511-8, Ed. K Mathew & I Nhapi, ISBN 1-84339-511-8. (Paper)
 33. **BROUCKAERT, C.J.**, FOXON, K., RIDGEWAY, T., RODDA, N. And BUCKLEY, C.A., 'A Mathematical Analysis of the Drying of Faceces in a Urine Diversion Toilet - Sensitivity Analysis', Third International Conference on Ecological Sanitation, International Convention Centre, Durban, South Africa, 23-27 May 2005. (Paper)

34. BROUCKAERT, B.M., AMRITHARAJAH, A., **BROUCKAERT, C.J.** and AMBURGEY, J.E., 'Predicting the Efficiency of Filter Backwash', American Water Works Association 2005 Annual Conference and Exposition, San Francisco, California, 12-16 June 2005. (Paper)
35. MARIAH, L., **BROUCKAERT, C.**, DRIOLI, E., CURCIO, E., JIGANI, D., NAIDOO, P. And BUCKLEY, C., 'The Development of Sustainable Salt Sinks with the Scope of Producing Value-Added-Products and Re-usable Water : Evaluation of an integrated membrane system for the recovery of purification of magnesium sulphate and sodium chloride from brine streams', IWA/WISA Conference on Management of Residues Emanating from Water and Wastewater Treatment, Sandton Convention Centre, Johannesburg, South Africa, 9-12 August 2005. (ref paper).
36. FOXON, K., **BROUCKAERT, C.**, RODDA, N., PFAFF, B., SALUKAZANA, L. And BUCKLEY, C.A., 'Management of Sanitation Residues', IWA/WISA Conference on Management of Residues Emanating from Water and Wastewater Treatment, Sandton Convention Centre, Johannesburg, South Africa, 9-12 August 2005. (ref paper)

Publications :

1. HUANG, T-H., **BROUCKAERT, C.J.**, DOCRAT, M.*, PRYOR, M.* and BUCKLEY, C.A., 'A Computational Fluid Dynamics and Experimental Study of an Ozone Contactor', Water Science & Technology, **46** (9), pp. 87-93, October 2002, ISBN 1843394286.
2. GIANADDA, P., **BROUCKAERT, C.J.**, SAYER, R.* and BUCKLEY, C.A., 'The Application of Pinch Analysis to Water, Regent and Effluent Management in a Chlor-Alkali Facility', Water Science & Technology, **46** (9), pp. 21-28, October 2002, ISBN 1843394286.
3. FOXON, K.M., **BROUCKAERT, C.J.**, BUCKLEY, C.A. and ROZZI, A*, 'Denitrification Activity Measurements Using An Anoxic Titration (pHstat) Bioassay', Water Science & Technology, **46**(9), pp. 211-218, October 2002, ISBN 1843394286.
4. DAMA, P., BELL, J., FOXON, K.M, **BROUCKAERT, C.J.**, HUANG, T., BUCKLEY, C.A., NAIDOO, V., and STUCKEY, D.*, 'Pilot-scale Study of an Anaerobic Baffled Reactor for the Treatment of Domestic Wastewater', Water Science & Technology, **46**(9), pp. 263-270, October 2002, ISBN 1843394286.
5. BISCOS, C., MULHOLLAND, M., LE LANN, M-V.*, BUCKLEY, C.A., **BROUCKAERT, C.J.**, BAILEY, R. and ROUSTAN, M.*, 'Optimal Operation of a Potable Water Distribution Network', Water Science & Technology, **46** (9), pp. 155-162, October 2002, ISBN 1843394286.
6. PASTRE, A., MULHOLLAND, M., **BROUCKAERT, C.J.**, BUCKLEY, C.A., LE LANN, M.-V*, ROUSTAN, M.*, NAIDOO, D. And MABEER, V., 'Modelling and Control of Potable Water Chlorination', Water Science & Technology, **46** (9), pp. 103-108, October 2002, ISBN 1843394286.
7. GREGORY, M.A., MCCLURG, T.P. And **BROUCKAERT C.J.**, 'The Mapping of Industrial Effluent on Coastal Sediments Using EDX', International Journal of Environ. Anal. Chem., **83** (1), pp. 65-80, 2003, ISSN 0306-73199.
8. BISCOS, C., MULHOLLAND, M., LE LANN, M-V*., BUCKLEY, C.A. And **BROUCKAERT, C.J.**, 'Optimal Operation of Water Distribution Networks by Predictive Control Using MINLP', Water SA, **29** (4), pp. 393-404, 4 October 2003, ISSN 0378-4738.
9. HUANG, T-H., **BROUCKAERT, C.J.**, PRYOR, M. And BUCKLEY, C.A., 'Application of Computational Fluid Dynamics Modelling to an Ozone Contractor', Water SA, Vol 30 (1), January 2004, pp. 51-56, ISBN 0378-4738.
10. GREGORY, M.A., BROUCKAERT C.J. And MCCLURG, T.P., 'The Use of Energy-Dispersive X-Ray Microanalysis as a Rapid Method for Demarcating Areas Around Marine Outfalls that May be Influenced by Effluent: A Case Study', Spectroscopy Letters, 38 (3), pp 213-227, ISSN Print 0038-701, Editor: Robert G. Michel, 2005.

Reports :

1. **BROUCKAERT, C.J.** and BUCKLEY, C.A., 'The Application of Computational Fluid Dynamics to Water and Wastewater Treatment Works', Water Research Commission Report No. 648/1/02, 2002, 57 pages, ISBN 1-86845-857-1.
2. **BROUCKAERT, C.J.** And BUCKLEY, C.A., 'The Application of Pinch Analysis for the Rational Management of Water and Effluent in an Industrial Complex', Water Research Commission Report No. 851/1/03, May 2003, 108 pages, ISBN 1-77005-028-0.
3. **BROUCKAERT, C.J.**, HUANG, T and BUCKLEY, C.A., 'Applications of Computational Fluid Dynamics Modelling in Water Treatment', Water Research Commission Report No. 1075/1/05, March 2005, 76 pages, ISBN 1-77005-271-2.