

WWTmod2010

2nd IWA/WEF Wastewater Treatment Modelling Seminar
Mont-Sainte-Anne, Quebec, Canada

Final Program

Sunday, 28 March 2010

08:00 – 08:10 Welcome by Leiv Rieger (Chair Scientific Committee)
Word by Réseau Environnement and CAWQ

08:10 – 08:15 Welcome by Paul Reiter (Executive Director IWA)

08:15 – 09:00 Opening Lecture by Glen T. Daigger
A Practitioner's Perspective on the Uses and Future Developments for Wastewater Treatment Modelling

Parallel full-day workshops:

- 1. Data collection and reconciliation for WWTP simulation studies**
(chair: Stefan Winkler)
- 2. Modelling micropollutants fate: Status and challenges**
(chair: Lorenzo Benedetti)
- 3. The role of modelling in assessing green house gas (GHG) emissions**
(chair: Andy R. Shaw)
- 4. Understanding CFD modeling: Successful applications, limitations and future directions** (chair: Alonso Griborio)
- 5. Critical components of biofilm models for engineering practice**
(chair: Josh P. Boltz)
- 6. A generalised physicochemical framework**
(chair: Damien J. Batstone)
- 7. Biokinetic models: Reality versus modelling concepts**
(chair: Sylvie Gillot)

09:00 – 12:00 Workshop session I (incl. coffee break)

12:00 – 13:30 Lunch

13:30 – 16:30 Workshop session II (incl. coffee break)

16:30 – 17:30 Report preparation (workshop chairs)

18:30 WELCOME RECEPTION and DINNER

Monday, 29 March 2010

08:15 – 08:30 Seminar information (Leiv Rieger)

Session 1 (Moderator: Bruce R. Johnson)

08:30 – 10:00 Model synthesis and communication

Hélène Hauduc, L. Rieger, T. Ohtsuki, A.R. Shaw, I. Takács, S. Winkler, A. Héduit, P.A. Vanrolleghem and S. Gillot

Activated sludge modelling: Development and potential use of a practical applications database

Lluís Corominas, L. Rieger, I. Takács, G. Ekama, H. Hauduc, P.A. Vanrolleghem, A. Oehmen, K.V. Gernaey, M.C.M. van Loosdrecht and Y. Comeau

New framework for standardized notation in wastewater treatment modelling

10:00 – 10:30 Coffee break

Session 2 (Moderator: Joshua P. Boltz)

10:30 – 12:00 Nitrogen modelling

Jacek Makinia, K. Pagilla, K. Czerwionka and H.D. Stensel

Modeling organic nitrogen conversions in activated sludge bioreactors

Bernhard Wett, J.A. Jimenez, I. Takács, S. Murthy, J.R. Bratby, N. C. Holm and Sabine G.E. Rönner-Holm

Models for nitrification process design: One or two AOB populations?

12:00 – 13:30 Lunch

Session 3 (Moderator: Kim H. Sørensen)

13:30 – 15:00 New model concepts

Eveline I.P. Volcke, C. Picioreanu, B. De Baets, and M.C.M. van Loosdrecht

How to deal with particle size distribution in granular sludge reactor models?

Andrew Schuler, Nehreen Majed, V. Bucci, F.L. Hellweger, Y. Tu and A.Z. Gu

Is the whole the sum of its parts? Agent-based modelling of wastewater treatment systems

15:00 – 15:30 Coffee break

Session 4 (Moderator: Jean-Philippe Steyer)

15:30 – 17:30 Modelling in practice

Heather M. Phillips, S. Rogowski and W. Anderson

Long-term operations modelling: When does validation become recalibration

Andy R. Shaw, Christy White, C. deBarbadillo, P. Schauer, K.V. Brischke, A. Thornton, K. Olds, J. Ord, N. Sunner, A. Nair, J. Hardison, D. Adams, P.L. Dold and M. Haeck

The use of process models to develop, test and implement real time control in wastewater treatment

Peter L. Dold, C. Bye, K. Chapman, K.V. Brischke, C. White, A.R. Shaw, J.L. Barnard, R. Latimer, P. Pitt, P. Vale and K. Brian

Why do we model and how should we model?

18:30 SURPRISE DINNER

Break-out sessions

20:00 – 22:00 (Topics will be collected by J.P. Boltz and I. Nopens and announced during lunch break)

Tuesday, 30 March 2010

08:00 – 08:15 Seminar information

Session 5 (Moderator: Eberhard Morgenroth)

08:15 – 08:30 Reports from YWP workshop

08:30 – 09:15 Reports from Sunday workshops

09:15 – 09:30 Break

09:30 – 10:30 Reports from Sunday workshops cont'd

10:30 – 11:00 Coffee break

Session 6 (Moderator: Evangelina Belia)

11:00 – 12:30 Uncertainty in modelling

Gürkan Sin, Maria Victoria Ruano, M.B. Neumann, J. Ribes, K.V. Gernaey, J. Ferrer, M.C.M. van Loosdrecht and W. Gujer

Sensitivity analysis in the WWTP modelling community – new opportunities and applications

Christina Martin, Andy R. Shaw, H.M. Phillips, A. Gilley and E. Ayesa

Comparison of methods for dealing with uncertainty in wastewater treatment modelling and design

12:30 – 14:00 Lunch

Session 7 (Moderator: J.B. Neethling)

14:00 – 15:30 Whole plant modelling

Romain Girault, J.-P. Steyer, I. Nopens, U.E. Zaher, A.G. Sadowski, F. Béline / Agnieszka Zak, O. Kujawski, N.C. Holm and S.G.E. Rönner-Holm

Influent fractionation and parameter calibration for ADM1: Lab-scale and full-scale experiments

Maria Victoria Ruano, J. Serralta, J. Ribes, F. Garcia-Usach, A. Bouzas, R. Barat, A. Seco and J. Ferrer

Benefits of using the supermodel Biological Nutrient Removal Model No.1 for plant-wide modelling

15:30 – 16:00 Coffee break

Closing Session (Moderator: Gustaf Olsson)

16:00 – 17:15 Quo vadis WWT modelling?

Discussion starters by:

Willi Gujer

Is modeling a mature technology?

Sudhir N. Murthy

Modelling: An interface for knowledge management

17:15 – 17:30 Summary of WWTmod2010 and outlook on WWTmod2012

by Leiv Rieger (outgoing chair WWTmod2010) and incoming chair WWTmod2012

19:00 GALA DINNER

Posters

- Leon S. Downing, G. Boksiner, R. Juarez and M. Young
Accounting for nitrogen losses in a large-scale municipal WWTP
- Paloma Grau, J. Albizuri, I. Lopez, C. Martin, E. Ayesa and L. Larrea
Practical experiences in biofilm modelling for process design and operation
- Kelly J. Martin, J.P. Boltz, S.E. Keithley and R. Nerenberg
Guiding the Development of Membrane-Supported Biofilm Processes Through Modelling Studies
- Cory D. Lancaster, M.S. Burbano and J.C. Rife
Reconciling traditional design principles with modelling
- Cheikh Fall, N. Flores, M. Esparza, J. Loaiza, M.C.M. van Loosdrecht and C.M. Hooijmans
RBCOD estimates: Divergence between respirometry and physico-chemical methods in Mexican municipal wastewaters
- Matthew Gray, S. Kestel and G. Lee
Use of nutrient analyzers to verify dynamic model calibration
- María Victoria Ruano, J. Ribes, A. Seco and J. Ferrer
DSC: Software tool for simulation based design of control strategies applied to WWTPs
- Dominic Frigon
Modeling the ozonation of return activated sludge for the reduction of excess sludge production: Lessons for practice
- Jens Alex, H. Pastagiya and N.C. Holm
First results of the development of a combined high rate biomass- algal model for wastewater treatment applications
- Krist V. Gernaey, L. Benedetti, L. Corominas, U. Jeppsson, X. Flores-Alsina, C. Rosén, G. Langergraber and P.A. Vanrolleghem
Wastewater treatment plant influent disturbance models

Young Water Professionals Workshop

Saturday, 27 March 2010

Time	Topic	Type	Content/Objective
08:15 - 08:30	Welcome		Workshop general information
08:30 - 08:45	Intro morning session		<u>Coordination:</u> H.M. Phillips and M.A. Labelle
08:45 - 10:00	Whole-plant modelling	Hands-on: System design	<ul style="list-style-type: none"> • Handle modelling problems in mixed academic/practice groups • Promote YWP interaction
10:00 - 10:30	Continued hands-on exercise but with coffee/tea and substrate		
10:30 - 11:45		Hands-on: System optimisation	
11:45 - 12:00	Moderated discussion		<u>Moderation:</u> H.M. Phillips / M.A. Labelle
12:00 - 13:30	Lunch break		
13:30 - 13:40	Intro afternoon session		<u>Coordination:</u> I. Nopens and J.P. Boltz
13:40 - 15:00	Session 1	3 pres. 20 + 5	YWP Session 1 A: Paloma Grau: <i>Biofilm in practice</i> B: Kelly Martin: <i>Biofilm process design</i> C: Doris Brockmann: <i>N-removal in biofilm</i>
15:00 - 15:30	Recovering break (coffee/tea)		
15:30 - 16:45	Session 2	3 pres. 20 + 5	YWP Session 2 A: Cory Lancaster: <i>Traditional rules of thumb versus models</i> B: Matthew Gray: <i>Analysers and model calibration</i> C: Jose Porro: <i>GHG modelling</i>
16:45 - 17:00	Moderated discussion		<u>Moderation:</u> I. Nopens / J.P. Boltz
17:00 - 18:00	Panel Discussion: Advancement and integration of YWPs in the water business		What are your career prospects? What can we learn from distinguished OWPs? How do we secure the next generation in the water business that needs to take on the challenges we face?
Evening	Interactive reception with distinguished OWPs		Network, advance and integrate in YWP/OWP

The workshop is organized by the YWP committee:

I. Nopens (chair), Ghent University, Belgium
 J.P. Boltz, CH2MHill, USA
 H.M. Phillips, Black&Veatch, USA
 M.A. Labelle, École Polytechnique de Montréal, Canada

For questions please contact Ingmar Nopens: ingmar.nopens@ugent.be