



MID TERM CONFERENCE



Dear Member of AquaFit4Use project,

We are very happy to present you the **Official Programme for our AquaFit4Use Mid-Term Conference** that will take place from 13th-16th June 2010 in Oviedo (Spain). The Conference has been organised in closed cooperation with the 7th ANQUE Congress on Water.

The last two years of the project have proven to be very active in research, implementation of pilot plants, validation of new ideas and concepts and, in definitive, application of new, reliable and cost-effective solutions to achieve a more sustainable use of water in the main water consuming industries. Consequently, large progress has been made on all work packages and we are ready to disseminate, outside the consortium, the main achievement accomplished up to now to reduce the intake of fresh water and the disposal of wastewater and, by extension, to reduce the environmental impact of our sectors

The aim of this open AquaFit4Use Mid-Term Conference is not only to present our current results but also to create a forum for the exchange of information on the identified bottlenecks and limitations of the concepts, scenarios and technologies derived from the lab results and pilot experiences, to define alternative solutions and to open new perspectives for the next two years.

I would like to express our sincere thanks for your support in organising the content of the **AquaFit4Use Mid-term Conference**, which provides an indispensable contribution to the project. Attached to this letter you will find the AquaFit4Use Mid-term Conference Programme which describes the main activities to be carried out in the course of the event. I would also like to draw your attention to the **two AquaFit-Seminars** that will be held in the conference with a theoretical and practical perspective and also to the ANQUE Congress activities related to water topics, such as sustainable water management, water in industry, water and energy, emerging contaminants and water treatments. This is important in order to move towards a sustainable water management that considers the integral water cycle and not only a sectorial part.

Additional information, including logistic, registration, program, etc., is in the web site www.anque2010.org

Remember that **this AquaFit4Use Conference is of great importance to all of us**, both to exchange results and knowledge between partners but also to show our progress to external parties. So **we expect that you all will attend this meeting**. The success of the Conference is of main importance also for the EC. Furthermore, we will appreciate if you **distribute the program between your contacts** to attract more people.

Yours sincerely,

Angeles Blanco

Leader of SP6.- Knowledge Transfer and Dissemination



MID TERM CONFERENCE



Sunday, 13th June

18:00 – 20:00 h	Registration
20:00 h	Welcome Reception

Monday, 14th June

8:00 – 9:00 h	Registration
9:00 – 9:05 h	AquaFit4Use Mid-Term Conference Opening. Ángeles Blanco (UCM) (ES)
9:05 – 11:00 h	AquaFit- MID TERM CONFERENCE S1. Sustainable Water Management Chairman: W. Torengen (TNO) (NL)
11:00 – 11:30 h	Coffee Break
11:30 - 13:30 h	Congress Opening Ceremony. “Paradigm Shift in Urban Water Management.” Peter A. Wilderer, 2003 Stockholm Water Prize. TU Munich, Germany
13:30 – 15:00 h	Welcome Lunch
15:00 – 17:00 h	AquaFit - MID TERM CONFERENCE S2. Waste Water Treatments Chairman: Jean Cantet (Veolia) (FR)
17:00 – 17:30 h	Coffee Break
17:30 – 19:00 h	Congress Round Table: Water in the Mass Media Moderator: Manuel Toharia, President of the Príncipe Felipe Science Museum.
20:00 – 21:00 h	Concert

Tuesday, 15th June

8:30 – 10:30 h	AquaFit - MID TERM CONFERENCE S3. Advanced Treatments Chairman: Inge Genné (VITO) (BE)
10:30 – 11:00 h	Coffee Break
11:00 - 11:45 h	Congress Plenary Lecture. “The Future of Water. European Perspective.” Tom Vereijken, President of the European Water Partnership. Belgium
11:45 – 13:15 h	Congress Round Table: Water Regulatory Framework. Moderator: Angel Cajigas, ATTA President.
13:15 – 15:00 h	Lunch
15:00 – 17:00 h	AquaFit - MID TERM CONFERENCE S4. Good Examples Industrial Cases Chairman: Dieter Pauly (PTS) (DE)
17:00 – 17:30 h	Coffee Break
17:30 – 19:00 h	Congress Round Table. Sustainable Water Management Moderator: Adrián Baltanás. ASAGUA President. Participants: Jorge Marquinez (CHC); Luis Alemany (EMA); Eduardo Ortega (E.ON); Andrés del Campo (FENACORE); Pedro Brufao (AEMS)
	Gala Dinner

VII ANQUE'S INTERNATIONAL CONGRESS

**INTEGRAL WATER CYCLE: PRESENT AND FUTURE
“A SHARED COMMITMENT”**

**Oviedo (Spain) 13-16 June 2010
www.anque2010.org**





MID TERM CONFERENCE



Wednesday, 16 th June	
8:30 – 10:30 h	AquaFit GA & ScP (Restricted to Members)
10:30 – 11:00 h	Coffee Break
11:00 - 11:45 h	Congress Plenary Lecture. "Present state of water desalination and its future". Marc Anderson, University of Wisconsin (USA)
12:00 – 14:00	AquaFit GA & ScP (Restricted to Members) – AquaFit4Seminars
14:00 – 15:30 h	Lunch
15:30 – 15:50 h	Congress Plenary Lecture. "The Future of the Spanish Technology Water Platform and the Strategy Research Agenda". Miguel López, AFRE
15:50 – 17:00 h	Congress Round Table. Water Opportunities for R&D+i. Moderator: Herminio Sastre FICYT Director Participants: F. García Ochoa (MICINN); To be Confirmed (CDTI); To be confirmed (Aqualia)
17:00 – 18:00 h	Congress Closing Ceremony

Wednesday, 16 th June	
AquaFit4Seminars	
DISSEMINATION AND TRAINING SP6 knowledge transfer and dissemination	
12:00 – 13:00 h	MBR seminar and Workshop - A Tazi Pain – Veolia Environment, Research and Innovation (FR)
13:00 – 14:00 h	Chemometric methods as useful tool for characterization of different environmental samples. – Darinka Brodnjak - University of Maribor (SI)
During coffee breaks and lunches	Water Quality Management Tool Demonstration – Filip Claeys – Most for Water (BE)

Monday, 14 th June	
SP5 Pilot cases in the four target industries	
17:15 – 20:00 h	Parallel session for organizing their pilots on paper, chemistry, food and textile

AquaFit4Use Mid Term Conference is organized in the framework of the VII ANQUE'S International Congress, 5 parallel sessions at the congress every day will cover the following topics:

Sustainable water management	Reuse of reclaimed water
Point and diffuse pollution	Water in agriculture
Drinking water treatment	Water in the industry
Desalination	Environmental impact of water treatments
Urban waste water treatment	Water and energy

VII ANQUE'S INTERNATIONAL CONGRESS
INTEGRAL WATER CYCLE: PRESENT AND FUTURE

"A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010

www.anque2010.org





MID TERM CONFERENCE



ORAL SESSION 1 - SUSTAINABLE WATER MANAGEMENT

14th June 9:00-11:00h

Chairman

Willy van Tongeren (TNO) (NL)

Lectures	
9:05– 9:20h	<p>2 Years of AquaFit4Use: Big steps in Sustainable Water Use in Industry thanks to strong cooperation. van Tongeren, W. Coordinator AquaFit4use (TNO) (NL)</p>
9:20 – 9:40h	<p>Assessment of sustainable water use in industry Wirén-Lehr, S¹., Latour, I²., Blanco, A². ¹European Water Partnership (BE) ²Cellulose and Paper Research Group, Chemical Engineering Department (Complutense University of Madrid) (ES)</p>
9:40 – 10:00h	<p>Methodology for Water Quality Management Sari, U.A. TNO (NL)</p>
10:00 – 10:20h	<p>A bird's eye view on the AquaFit4Use Water Quality Management Tool Claeys, F. Most for water (BE)</p>
10:20 – 10:40h	<p>Water Quality Control based on HACCP methodology and principles Grüttner, H. and Kristensen, G.H. DHI (DK)</p>
10:40 – 11:00h	<p>Successful water circuit optimization at Sappi Maastricht and Hamburger Rieger Jung, H¹., Römer, D¹., Hutter, A¹., Simstich, B¹., Defesche, M²., Eichhorn, R.v.³ ¹Papiertechnische Stiftung PTS (DE) ²Sappi Limburg Maastricht Mill (NL) ³Hamburger Rieger Trostberg GmbH & Co (DE)</p>

VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE
"A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010
www.anque2010.org





MID TERM CONFERENCE



ORAL SESSION 2 - WASTE WATER TREATMENTS

14th June 15:00-17:00h

Chairman

Jean Cantet (VEOLIA) (FR)

Lectures	
15:00– 15:15h	<p>Mathematical modelling of wastewater treatment technologies in industrial water circuits Grau, P., Lizarralde, I., Sancho, L. CEIT. (ES)</p>
15:15– 15:30h	<p>Mathematical modelling and callibration of a USB reactor treating wastewater from a paper mill Lizarralde, I.¹, de Gracia, M.², Grau, P.¹ ¹CEIT-TECNUN (ES); ²ATM S.A. (ES)</p>
15:30– 15:45h	<p>Long-term stability of membrane bioreactors on chemical waste waters De Wever, H.¹, Huyskens, C.¹, Cassiers, P.², Wegmann, U.³. ¹VITO (BE); ²BASF (BE); ³BASF (DE)</p>
15:45 – 16:00h	<p>Membrane treatment for water recycling in pulp & paper industry Engelhart, M., Düffel, J.v., Kress, A., Kotulski, P. EnviroChemie GmbH (DE)</p>
16:00 – 16:15h	<p>Combining lime softening with coagulation/flocculation to minimize the environmental impact of reverse osmosis rejects Ordoñez, R., Hermosilla, D., Moral, A. and Blanco, A. Cellulose and Paper Research Group, Chemical Engineering Department (Complutense University of Madrid) (ES)</p>
16:15 – 16:30h	<p>Laboratory scale experiments for waste water reuse in textile processes Jerič, T.¹, Mattioli, D.², Grilli, S.², Krapš, M.³, Vajnhandl, S.¹, Majcen Le Marechal, A.¹, Golob, D.¹, Kobal, L.³, Kolar, M.⁴ ¹Faculty of Mechanical Engineering (University of Maribor) (SI) ²Enea, Dipartimento Ambiente, Cambiamenti Globali e Sviluppo Sostenibile (IT) ³Tekstina d.d. Ajdovščina (SI); ⁴Svilanit d.d. (SI)</p>
16:30 – 16:45h	<p>New insights into the microbiology of water streams in the textile industry Snaidr, J.¹, Beimfohr, C.¹, Vajnhandl, S.², Kobal, L.³, Zupin, N.⁴, Majcen, A.². ¹Vermicon AG (GE) ²Faculty of Mechanical Engineering (University of Maribor) (SI) ³Tekstina d.d. Ajdovščina (SI); ⁴Svilanit d.d. (SI)</p>
16:45 – 17:00h	<p>Water quality monitoring: Evaluation of sensors Chabrol, J., Chardin, M., Ledegallierie, Y., Maurel, M., Monsorez, A., Lemoine, C. VEOLIA Environment Research & Innovation (FR)</p>

VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE

“A SHARED COMMITMENT”

Oviedo (Spain) 13-16 June 2010

www.anque2010.org





MID TERM CONFERENCE



ORAL SESSION 3 - ADVANCED TREATMENTS

15th June 8:30-10:30 h

Chairman

Inge Genné (VITO) (BE)

Lectures	
8:30– 8:50h	<p>AOPs applied to the treatment of reverse osmosis concentrates Hermosilla, D., Merayo, N., Blanco, A. Cellulose and Paper Research Group, Chemical Engineering Department (Complutense University of Madrid) (ES)</p>
8:50 – 9:10h	<p>Ozone oxidation enables waters to be re-used Bromen, M., Mielcke, J., Vogt, J. ITT-Water & Wastewater WEDECO GmbH (DE)</p>
9:10 – 9:30h	<p>Application of 3FM® to pulp and paper waste water filtration Mauchauffee, S., Denieul, M.P., Desvarreux-Larpenteur, B., Coste, M. VEOLIA Environnement Recherche & Innovation (FR)</p>
9:30 – 9:45h	<p>Denitrator reduction of bacterial growth and biofouling in water systems Gerritse, J¹., van der Zaan, B., ter Huurne, P., Legden, G., van Staveren, P., Dilven, S., van der Arend, R., Beimfohr, C. and van Tongeren, W². ¹Deltares (NL) ²TNO (NL)</p>
9:45 – 10:00h	<p>High rate crystallisation processes: Application to softening and removal of scaling compounds for industrial wastewater re-use Barbier, E¹., Mauchauffee, S¹., Denieul, M.P¹., Coste, M¹., Engelhart, M². ¹VEOLIA Environnement Recherche & Innovation (FR) ²EnviroChemie GmbH (DE)</p>
10:00 – 10:15h	<p>Ca removal by hybride Crystallisation process Van Erkel, J. FACT-TNO (To be confirmed)</p>
10:15 – 10:30h	<p>Voltea's desalination technology applied on cooling water system ice cream factory Unilever. Driessen, E.^a, Van der Arend, R.^b, Van der Wal, B.^a ^aR&D Dept.(Voltea) (NL) ^bUnilever (NL)</p>

VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE
 "A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010

www.anque2010.org





MID TERM CONFERENCE



ORAL SESSION 4 - GOOD EXAMPLES INDUSTRIAL CASES

15th June 15:00-17:00h

Chairman

Dieter Pauly, (PTS) (DE)

Lectures

15:00– 15:30h	Sustainable water use in graphic paper production Hermosilla, D ¹ ., Ordoñez, R ¹ ., San Pío, I ² ., Rodríguez, L ² . and Blanco, A ¹ . ¹ Cellulose and Paper Research Group, Chemical Engineering Department (Complutense University of Madrid) (ES) ² Development and Quality Department (Holmen Paper Madrid) (ES)
15:30– 16:00h	Examples of treatment strategies for reuse purposes in textile finishing SMEs Mattioli, D. ¹ , Grilli, S. ¹ , Majcen Le Marechal, A. ² , Vajnhandl, S. ² ¹ Enea, Dipartimento Ambiente (IT) ² Faculty of Mechanical Engineering (University of Maribor) (SI)
16:00– 16:30h	Advanced wastewater treatment: case study in chemical industry Bromen, M., Mielcke, J., Vogt, J. ITT-Water & Wastewater WEDECO GmbH (DE)
16:30 – 17:00h	Optimization of Cleaning-In-Place (CIP) processes in bottled water industry Davy, V. Engineering Group (Nestlé Waters M. T. - PTC Water) (FR)

VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE
"A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010

www.anque2010.org





AquaFit4Seminars 16th June Oviedo (Spain)



12:00 – 13:00 h

DISSEMINATION
training AND

SP6

knowledge transfer
and dissemination

MBR seminar and workshop

A Tazi Pain
VEOLIA Environnement Recherche & Innovation. France
(Annie.TAZI-PAIN@veolia.com)

Twelve years after the first full scale municipal application in Europe, the MBR technology is now mature and widely applied in different regions of the world to treat municipal or industrial wastewater. Employing membranes for the biomass separation, MBR systems have many advantages over conventional processes with a highly improved effluent quality, as well as an increased organic loading and a reduced footprint occupation, especially when advanced treatment quality is required or a compact system is desired.

The growth of MBR implementations was possible thanks to many industrial and public research projects which allowed the commercialisation of new, reliable membrane technologies and optimizations in filtration/biological system design. Additionally the comprehension of the fouling mechanisms and the development of new tools as advanced control system enabled operating condition optimization and saving energy.

This symposium will constitute a forum for the debate and exchange of information among companies, administrations and public institutions, research centres and universities, in which the latest technological advances applicable to the MBR will be presented.

In this event the following topics will be covered:

- The MBR market trends
- An overview of the MBR process
- Some example of application
- Advanced control system
- MBR configurations



VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE
"A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010
www.anque2010.org





AquaFit4Seminars 16th June Oviedo (Spain)



13:00 – 14:00 h

DISSEMINATION
training AND

SP6

knowledge transfer
and dissemination

Chemometric methods as useful tools for characterization of different environmental samples

DARINKA BRODNJAK VONČINA

*Faculty of Chemistry and Chemical Engineering, University of Maribor, Slovenia
(darinka.brodnjak@uni-mb.si)*

Chemometrics is a scientific discipline closely connected with statistics and mathematics. It has an important role in analytical chemistry. Modern analytical methods provide an opportunity to collect large amounts of data for various samples. For handling analytical results different chemometric methods are employed, such as basic statistical methods for the determination of mean and median values, standard deviations, minimal and maximal values of measured parameters and their mutual correlation coefficients, the *principal component analysis* (PCA), *cluster analysis* (CA), and *linear discriminant analysis* (LDA). The objectives of chemometrics in analytical chemistry are focused on characterization and chemometrical classification of different samples. The quality of environmental samples such as water, sediment, soil, air samples etc. can be determined according to measured physical and chemical parameters, which represent the individual samples. Chemometric methods give information regarding measured parameters about similarity between sampling locations, sources of pollution, seasonal behavior and time trends. Monitoring of general pollution of environmental samples and following measuring parameters which are above permitted level given by legislation can be used for searching of pollution source and for planning prevention measures from pollution. Food samples can also be characterized by chemometrical methods. Chemometrics can be used for fast and efficient determination of food sample categories, such as edible oils, wines, fruits and fruit juices etc. Classification can also be performed according to the origin, source or season. From all these facts it is evident that the aim of chemometrics in analytical chemistry is high and extensive.

Program:

- Exploratory data analysis
- Preprocessing data (Mean Centering, Standardization)
- Cluster analysis (CA)
- Principal Component Analysis (PCA)
- Linear discriminant analysis (LDA)

VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE
"A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010
www.anque2010.org





AquaFit4Seminars 16th June Oviedo (Spain)



During coffee-breaks
and lunches

DISSEMINATION
training AND

SP6

knowledge transfer
and dissemination

Water Quality Management Tool Demonstration

Filip Claeys
Most for Water (Belgium)
fc@mostforwater.com

The Water Quality Management Tool or **WQMT** is a versatile software tool for water network simulation and optimization. It allows users to capture knowledge on the building blocks (water sources, sinks, industrial processes and treatment processes) of existing water networks, and to graphically represent the network topology. Based on a library of mathematical block models, network topologies can be simulated under various conditions, and simulation results can be displayed in a visually appealing manner. The tool also allows for optimizing the operational settings and/or the topology of water networks, through a powerful, yet easy-to-use, scenario engine.

The WQMT is made up of two applications. The first is named **WQMTWeb** and is a web-based front-end to a centralized database containing mathematical models and various other meta-information items on water sources and sinks, as well as on industrial and treatment processes. The second programme that is part of the WQMT is a thick client application named **WQMTWin** and is intended to be run on local workstations. It allows for graphically building representations of water networks on the basis of blocks that are described by a local snapshot of the information contained in the WQMT database.

In a first instance, these water networks can be simulated and simulation results can be visualized. In a second stage, various network alternatives can be defined by the user and hence be evaluated automatically, in order to select the alternative that satisfies all constraints defined, at minimum cost.

VII ANQUE'S INTERNATIONAL CONGRESS

INTEGRAL WATER CYCLE: PRESENT AND FUTURE
"A SHARED COMMITMENT"

Oviedo (Spain) 13-16 June 2010
www.anque2010.org





MID TERM CONFERENCE



General AquaFit4Use information

Project title AquaFit4Use—Water in industry, Fit-for-use Sustainable Water Use in Chemical, Paper, Textile and Food Industry
Acronym AquaFit4use
Participants 32
Start date 1 June 2008
Duration 48 months
Total budget 14.800.000 euro
Total EC funding 9.650.000 euro



VISIT OUR WEBSITE!

www.aquafit4use.eu

Contact

Willy van Tongeren (TNO)

Telephone

+31 (0)88-8662181

E-mail

willy.vantongeren@tno.nl

Participating partners

