

Nanotechnology
meets
water treatment

Dissemination
Workshop of the
nano4water cluster

26 October 2010
Aachen, Germany



The nano4water cluster projects are co-funded by the Research DG of the European Commission

Programme

08.30 - 09.00 Registration
09.00 - 09.15 Meeting opening
Thomas Melin, (RWTH Aachen University / DE)

Overview presentations
 Introduction to the nano4water cluster

09.15 - 09.45 European Research Programmes in the field of Nano- and Environmental Technologies
Michel Schoupe and Stefan Vandendriessche, European Commission DG Research

09.45 - 10.15 New ED - Advanced bipolar membrane processes for remediation of highly saline wastewater streams
Thomas Melin (RWTH Aachen University / DE)

10.15 - 10.45 CleanWater - Water detoxification using innovative vi-nanocatalysts
Polycarpos Falaras (NCSR / GR) and José M. Doña Rodríguez (ULPGC / ES)

10.45 - 11.15 Nametech - Development of intensified water treatment concepts by integrating nano- and membrane technologies
Inge Genne (VITO / BE)

11.15 - 11.45 Coffee break & Poster presentation

11.45 - 12.15 WATERMIM - Water treatment by molecular imprinted materials
Costas Kiparissides (CPERI / GR)

12.15 - 12.45 MONACAT - Monolithic reactors structured at the micro and nano levels for catalytic water purification
Enrique García-Bordeje (CSIC / ES)

12.45 - 13.15 MEMBAQ - Incorporations of aquaporins for industrial applications
Hans Enggrob (DHI / DK)

13.15 - 14.30 Lunch break and poster presentation

Presentations on specific aspects of the nano4water projects

14.30 - 15.00 New ED - Enhanced performance of structured electro dialysis membranes
Harmen Zwijnenberg (TU Twente / NL)

15.00 - 15.30 CleanWater - Development and optimization of photocatalytic nanofiltration membranes

P. Falaras and Georgios Romanos (NCSR / GR)

15.30 - 16.00 Nametech - Nanosilver in membranes: integration concepts for different applications

Eric Roesink and Wilco Wennekes (Norit / NL)

16.00 - 16.30 Coffee break

16.30 - 17.00 MONACAT - Catalytic testing in ozonation and reduction reactions
Enrique García-Bordeje (CSIC / ES)

17.00 - 17.30 WATERMIM - Design of MIP nanoparticles and membranes for water purification
Iva Chianella (Cranfield Biotechnology Centre / UK)

18.00 Reception



About

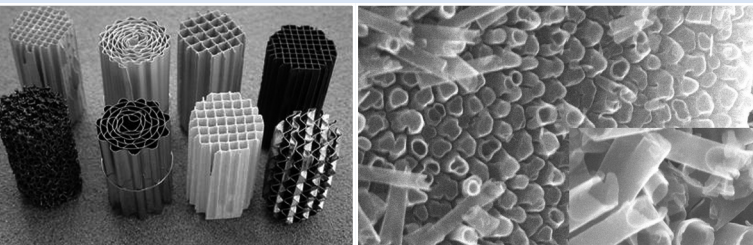
The nano4water cluster is a coalition of research projects, funded by the European Commission following a Joint Call on nanotechnologies for water treatment (FP7-ENV-NMP-2008-2). The action aims to support research and technological development in the field of water treatment by applying developed or adapted nano-engineered materials to promising separation, purification and detoxification technologies.

The projects of the nano4water cluster mainly follow two approaches in improving efficient water treatment: the development of nanomembranes, where engineered nanomaterials are incorporated into the membrane matrix or are deposited on membrane surface, and the use of nanomaterials in catalytic reactors in order to accelerate degradation reactions

This 1-day workshop on 26 October 2010 is a joint dissemination activity of the cluster - a unique opportunity to learn about the potential of nanotechnology in water treatment generally and membrane applications in particular.

For more information about the project visit

www.nano4water.eu



Poster presentations

WATERMIM

Nanostructured molecularly imprinted polymer spheres by miniemulsion polymerization for the recognition of endocrine disrupting compounds

Klaus Niedergall, A. Kuhnt, G.E.M. Tovar, T. Hirth

Molecular Dynamics Simulations of a Miniemulsion MIP Prepolymerization System: Novel Insights Into The Basis For Polymer-Template /Ligand Interaction *Gustaf D. Olsson, B.C.G. Karlsson, K. Niedergall, A. Kuhnt, T. Hirth, G. Tovar and I.A. Nicholls*

An artificial estrogen receptor obtained by combinatorial imprinting for analysis and removal of estrogen active compounds

Eric Schillinger, M. Möder, Gustaf Olsson, I. Nicholls, F. Ghorbanibidkorpheh and B. Sellergren

Hydrodechlorination of clopyralid on noble metal catalysts

Linda Teevs, U. Pruesse, K. Vorlop

Removal of trace levels of atrazine from water using molecularly imprinted polymers

Johan Billing and Ecevit Yilmaz

NAMETECH

Ensuring responsible nanotechnology applications for water treatment - approaches and methods adopted within the NAMETECH project

Stefano Zuin, A. Marcomini, G. Pojana, I. Genné

Development of polyelectrolyte-modified membranes for enhanced water treatment

Jozef Kochan, M. Bikel, J. Wong, J. van Erkel, T. Melin

MONACAT

Modeling and simulation of catalytic nitrates reduction

X. Fan & A. Lapkin

NewED

Model Electrodialysis using Bipolar Membranes of Chloride and Phosphate Industrial Effluents

Said Abdu and Thomas Melin

On the development of new bipolar membranes with active water transport

R. Messalem, O. Kedem, E. Korngold, A. Ghermandi and T. Bejerano

CleanWater

Tailoring the synthesis of nanostructured TiO₂/CNT composites for solar photocatalysis

Rita Marques R.N., Ricardo A. Segundo, G. Romanos, D. Portillo-Carrizo, C. Fernández-Rodríguez, J.L. Faria, J.M. Doña-Rodríguez, P. Falaras and A.M.T. Silva

A combination of advanced techniques for characterizing the surface chemistry of SWCNTs

G.E. Romanos, A.M.T. Silva, V. Likodimos, R.R.N. Marques, T. Steriotis, S. Papageorgiou, J.L. Faria, J.L. Figueiredo and P. Falaras

Synthesis and characterization of N-F TiO₂ nanomaterials for MC-LR photodegradation

Miguel Pelaez, P. Falaras, V. Likodimos, A.G. Kontos, A.A. de la Cruz and D.D. Dionysiou

Approach to evaluate the efficiency of novel photocatalysts under solar light for the elimination of emerging pollutants

V. Maroga Mboula, V. Héquet, Y. Andrès, M. Pelaez and D.D. Dionysiou

Synthesis and characterization of novel highly active photocatalysts based on TiO₂

J.M. Doña-Rodríguez, C. Fernández-Rodríguez, D. Portillo-Carrizo, C. Han, M. Pelaez, A.G. Kontos, V. Likodimos, D.D. Dionysiou and P. Falaras

Photocatalytic removal of phenols, azo dyes and pesticides from water by using highly active photocatalysts

J.M. Doña-Rodríguez, J. Araña, C. Fernández-Rodríguez, D. Portillo-Carrizo, O. González Díaz and J. Pérez-Peña

Development and validation of analytical methods for the quantification of MC-LR, GSM and 2-MIB

A. Hiskia, T. Triantis, T. Fotiou and T. Kaloudis

Photodegradation of MC-LR using innovative TiO₂ photocatalysts

A. Hiskia, T. Triantis, T. Fotiou, T. Kaloudis, A.G. Kontos, P. Falaras and D.D. Dionysiou

Supported Photocatalytic Materials and Membranes integrated in a Novel continuous flow PC membrane Reactor

G. E. Romanos, V. Likodimos, E. Kantilaftis, P. Aloupogiannis and P. Falaras