BioNexGen
Clean Water. Clear Solutions.
Newsletter
No.05

In this issue…

BioNexGen ID

Title

Development of the **Next Gen**eration membrane **Bio**reactor system

Programme

Seventh Framework Programme, Collaborative Project

Duration

01/09/2010-28/02/2014

Main objective

BioNexGen is developing a new class of functional low fouling membranes for membrane bioreactor technology with high water flux and high rejection of organic matter with low molecular weight

Partner countries

Egypt, Germany, Greece, Italy, Syria, Tunisia, Turkey, UK

Editorial

Dear Readers,

Welcome to the fifth issue of our **BioNexGen** newsletter! This issue contains activities where our consortium was involved during the past few months. First of all, we would like to present an article on the second training workshop of **BioNexGen** held in Cetraro, Italy. Secondly about the poster competition held in relation to **BioNexGen**. We would also like to inform about the upcoming events of **BioNexGen** final conference in Izmir, Turkey in October 2013 and the Second International WATERBIOTECH Conference in Marrakesh, Morocco .

Moreover we also warmly invite you to regularly visit our project website under www.bionexgen.eu in order to be updated on the latest developments.

Yours sincerely,
BioNexGen consortium

BioNexGen Partners

The project is carried out by **7 European, 1 Turkish and 3 MENA partners,** namely two partners from North Africa and one from the Middle East.

The consortium has been carefully selected to ensure a multidisciplinary approach which is necessary to realise this innovative concept. It consists of academic and industrial partners and of technology transfer institutions.

Technology transfer: Coordinator, Karlsruhe University of Applied Sciences (Germany), Steinbeis-Europa-Zentrum (Germany)

Membrane's development: Institute on Membrane Technology at Italian National Research council (Italy), Foundation for Research and Technology, Hellas (Greece), Izmir Institute of Technology (Turkey), Swansea University (UK), as well as Microdyn Nadir (Germany) and Nanothinx (Greece), as European leaders in innovative MBR membrane technology and carbon nanotubes' manufacturing

Demonstration and field test activities: Centre de Biotechnologie de Sfax (Tunisia), Central Metallurgical Research and Development Institute (Egypt) and Al Baath University (Syria)

Second BioNexGen Training Workshop: Functionalized membranes for wastewater treatment -Nanoparticles and surfaces modifications

The second training workshop of BionexGen was held in Cetraro, Italy from 15th-17th May 2013 with the main objective to present the basic principles and a state-of-the-art of "Functionalized membranes for wastewater treatment - Nanoparticles and surfaces modifications". It has been hosted by CNR-ITM and organized in collaboration with SEZ and HSKA. Besides theoretical seminars, this workshop was combined with a visit to the CNR-ITM MBR plant.

There were more than 40 participants from different companies, universities and research institutes and companies of different European and MENA countries. This 3-day workshop covered with 20 oral presentations, 11 poster presentations from the field of water engineering experts, researchers, stakeholders, municipalities and companies from all Europe and MENA countries.

The workshop started with welcome by Dr. Alberto Figoli from ITM-CNR, partner in the BioNexGen project. He introduced the BioNexGen project to the audience and delivered lecture on novel nano-structured membrane coating developed within the project. Later, the overview on the results and progress in BioNexGen project was presented by Prof. Jan Hoinkis, the co-ordinator of the BioNexGen project from Karlsruhe University of Applied Sciences, Germany. Many speakers delivered interesting lectures on functionalised membranes, antimicrobial materials, nano-particles, carbon nano-tubes and membrane applications in wastewater treatment, which are also the main topic developed and elaborated within the BioNexGen Project.

Two keynote speakers had been invited to deliver the speech. One was presented by Dr. Lidietta Giorno, the director of ITM-CNR (Italy) on membrane application in wastewater treatment emphasising on applications of biomembranes and how the nature inspires the research of membranoologists. The next titled as "Explaining ultra-high water flow rates observed in carbon nanotube membranes" was delivered by Dr. Davide Mattia from University of Bath, England. He explained the future prospects of carbon nanotube membranes for water treatment and some of the main results on the work done by his group in the years.

Though some researchers presented posters, the poster session was mainly contributed by PhD students in the field of nano-structured membranes, nanoparticles and membrane application in wastewater treatment. The workshop ended with visiting various sections of membrane process technology at ITM-CNR guided by Dr. Lidietta Giorno and Dr. Alberto Figoli.

This conference presented a golden opportunity for academics, water engineering experts, researchers, stakeholders, municipalities and companies at fostering new contacts and collaborations.

Poster Competition

The European Membrane Society (EMS) organized annual summer schools with the aim to provide young researchers, in particular Ph.D. students, and young professionals in depth insights into the fundamentals of membrane technologies and recent trends of the field. The topic was "Membranes for liquid separation" which included the development, production and characterization of polymer-based membranes for separations in aqueous systems and organic media discussed from a fundamental and industrial point of view.

A poster competition was held based on BioNexGen activity. Ioannis Anastasopoulos, Ph.D. student of FORTH/ICE-HT was awarded by The European Membrane Society (EMS) and the University Duisburg-Essen a cash prize of 300€ for his outstanding poster presentation entitled: "Novel membranes for water technologies: Formation of aligned nanotubes (CNTS) with tailored physical and chemical properties" by J. A. Anastasopoulos, A. Soto Beobide, Th. Karachalios and G. A. Voyiatzis (by FORTH and NanoThinx).

Other upcoming events

Second International WATERBIOTECH Conference

January 8th –10th ,2014, Université Cadi Ayyad (UCA) Marrakesh, Morocco

Call for submission of papers

The closing event of the Waterbiotech project is the Internal Conference "Biotechnology for Africa's sustainable water supply" with an aim to bring together the members of this consortium in conjunction with national and regional decision makers, water professionals, scientists and experts in water treatment. It also aims at the promotion of knowledge transfer between African organisations and other regions in the world.

The Waterbiotech topics of interest include:

- Requirements and practical experiences in water treatment and re-use in Africa.
- Biotechnologies for water treatment and re-use in the African context.
- Operation and maintenance related to biotechnologies for water treatment and re-use.
- Energy efficiency in wastewater treatment.
- Water treatment policies.

The conference is open to all interested participants especially scientists, policy makers, water and waste managers, operators, PhD students, stakeholder representatives and NGOs.

Abstracts of 1000 words should be submitted to the submission system on the conference website before 30th August 2013.

Please find more information on the following

website: http://www.waterbiotech.eu/

Upcoming project events

BioNexGen Final Conference: "Use of nanotechnology in membrane for water treatment", 9th-10th October 2013 in Izmir, Turkey

From 8th-10th October 2013 the BioNexGen Final Conference under the topic "Use of nanotechnology in membrane for water treatment" will be held in Izmir, Turkey.

Keynote speakers will address critical issues for membrane application in wastewater treatment and, in addition, the conference will serve as a platform for the partners to convey their experiences, research results, and ideas through podium and poster presentations. Participants include a wide variety of stakeholders from policy, business, science, industrial sectors, retailers and government organizations. It should be noted that the official language of the organization is English.

The focus of the talks and presentations will be put on:

- Membrane Development and Characterization for (Waste) water Treatment
- Nanotechnology in (waste)water treatment
- Modeling and simulation
- Surface modification and functionalization
- Biofouling
- Antifouling membranes for (waste)water treatment
- Antimicrobial membranes for (waste)water treatment
- Antibacterial nanoparticles and their application in (waste) water treatment
- Reactive membranes and nanocatalysts for (waste) water treatment
- Nanocomposite membranes for (waste) water treatment

Further information about the agenda and registration procedures are available on the website :

http://www.nanomemwater.org/