Nanocyl participates in AMBIO, a nanotechnology project funded by the European Commission to study and develop new coating materials for the control of biofouling in aquatic environments.

Sambreville, Belgium, April 2006 – Nanocyl, one of the world's main producers of nanotubes, participates in the AMBIO project. Nanocyl participates with other key industry and university partners in this European research project. The project proposal entitled AMBIO – Advanced Nanostructured Surfaces for the Control of Biofouling – will facilitate the incorporation of novel 'nanoscale' technologies and new ways of thinking, into the innovation processes used by major European industries and SMEs involved in developing antifouling materials and coatings to meet a range of end uses to control aggressive biofouling including ship hull and pleasure craft coatings, membrane filters, aquaculture equipment, instrumentation, water-inlets and heat exchangers..

EU companies are world-leaders in anti-biofouling* coating technology. Many of the technologies in use are being subject to restrictions due to novel and more stringent environmental protection criteria, namely to eliminate the currently applied biocides. Nowadays there are no overall suitable alternative non-toxic coating technologies, so that new research is needed to overcome this technology gap and to provide EU companies with the fundamental science necessary to maintain their position at the forefront of the marine coating market. AMBIO is funded by the European Community in the Sixth Framework Programme of Research and Technological Development.

Biofouling is caused by the adhesion of organisms such as bacteria, barnacles and algae to a surface. It generated large economic costs due to clogging of water pipes, increase of mass on boats and marine structures, etc. This adhesion involves interfacial interactions, between the living organisms and the marine structure, which occur within a few nanometres of a surface. The aim of AMBIO is to study and develop different types of nano-structured surface to avoid the adhesion of marine fouling organisms. The research on nanoscale interfacial properties of different surfaces and how organisms adhere will allow understanding how anti-biofouling systems can work, starting at the nanoscale to scale-up to future industrial applications.

* Biofouling: the process by which any surface in a marine or freshwater environment acquires a growth of organisms of different types.

New Materials and Improved Understanding

Nanocyl participates with other industries, universities and research organisations into a coordinated, interdisciplinary research incorporating all the necessary elements from nanomaterials engineering technologies to biological evaluation and end-user trials. Partners include amongst others the Universities of Pisa and Mons, BASF AG and Wallenius Marine. The consortium is composed of 31 partners.

The AMBIO project is currently in its 1st Phase. In this period of 3 years (up to 2008) a range of surface nanostructuring methods will be used to create experimental test surfaces with controlled and well-characterised physical and chemical properties at the nanoscale. Surfaces will be evaluated by rapid, laboratory-scale adhesion and biofouling assays with different types of biofouling organism. Theoretical and experimental studies on dynamic interfacial properties of test surfaces will be integrated with biological adhesion assays to provide a critical understanding of how anti-biofouling surfaces work at the nanoscale.

In Phase 2 (2008-2009), the most promising test surfaces will be selected for scale-up and development as practical coatings. In Phase 3 (2010) the most promising coatings will be evaluated as possible prototypes through quantitative, comparative field trials involving a minimum of 7 end-users where biofouling is a problem.

Francis Massin, Managing Director of Nanocyl explains that "the AMBIO project is just one example of a project employing novel nanotechnologies to introduce change into R&D operations relevant to a commercial business sector. It goes without saying that nanotechnology will change future business drastically."

About Nanocyl

Nanocyl is a company, founded in February 2002, emerged from the Universities of Namur and Liège (Belgium) and is supported by individual and institutional investors. The purpose of Nanocyl is to develop new business for the supply of specialty carbon nanotubes based on an existing and expanding portfolio of intellectual property. Nanocyl is one of the first companies to be established in Europe for the commercial supply of this family of novel material. Currently, pilot production is dedicated to associated laboratories and selected industrial partners. Nanocyl is investing in production equipment, laboratories and process development at its facility in order to supply commercial quantities of carbon nanotubes. For more information, please visit the company's website at www.nanocyl.com

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