

***BIONIS*: The Biomimetics Network for Industrial Sustainability**

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The network was set up in Spring 2002, with the help of UK government funding, which lasted for 3 years. **BIONIS** was then sponsored until July 2007 by Swedish Biomimetics 3000® and from July 2007 by the University of Reading. There were 19 founder members from Industry and R & D throughout the UK. Membership has now grown to over 580, from 49 countries worldwide.

Website: www.biomimetics.org.uk Visit it to learn about Biomimetics!

Biomimetics Events

Fifth International Conference on Comparing Design in Nature with Science and Engineering

28-30 June 2010, Pisa, Italy

The Design and Nature Conference is to be reconvened in 2010 following the success of previous meetings, the first of which was held in Udine, Italy in 2002, followed by the second in Rhodes, Greece in 2004, a third in the New Forest, UK, in 2006, and the last one in the Algarve, Portugal in 2008. It is intended that the meeting will bring together researchers from around the world working on a variety of studies involving nature and their significance for modern scientific thought and design. Registration details can be found [here](#).

GEM'10 The 2010 International Conference on Genetic and Evolutionary Methods

July 12-15 July 2010, Las Vegas, USA

You are invited to submit a full paper for consideration. All accepted papers will be published in the GEM conference proceedings (in printed book form; later, the proceedings will also be accessible online). Topics include Genetic programming, Artificial life, Swarm intelligence and optimization, Biologically inspired systems, Evolutionary strategies, Ant colony optimization- please refer to the conference [website](#) for a fuller list.

International Industrial Convention on Biomimetics

16-17 March 2011, Berlin, Germany

Please note re-scheduling from September 2009. The programme combines high-level plenary talks with six deepening sessions leaving a lot of time for discussion and networking activities. The Sessions are dedicated to topics as:

- Sensors and signal processing
- Bio-inspired materials and self-x-mechanisms
- Energy Systems
- Fluid dynamics
- Functional surfaces and
- Robotics, motion systems and artificial intelligence.

An attendant exhibition completes the congress.

Further details can be found [here](#).

News Items

Funding call from Sweden

The City of Stockholm's Foundation for Innovative Culture is launching a call for projects that deals with the field of biomimetics/biomimicry. Bioinspired Forum is a partner in this initiative. The aim is to give initial support for projects that address the field from an aesthetic point of view, i.e. design, architecture, art, philosophy, etc.

More information and other partners in this call will be presented on - www.innovativkultur.se (in Swedish)

Spider silk structure holds secret to catching water as well as flies.

Nature, 3rd February

Anyone who has seen a spider web after the early morning dew will have noticed water droplets strung along its fine threads. When Lei Jiang first observed the phenomenon, he was intrigued. "How does that happen?" He wondered. After all, he says, "if you took a human hair, water would not stick to it like that". His initial curiosity led to an almost five-year-long study. The findings could have implications for the design of materials for water collection and for the efficiency of chemical reactions. See [Nature](#) for more details.

Forthcoming book: Biomimetics - Materials, Structures and Processes

The book presents an outline of current activities in the field of biomimetics and integrates a variety of applications comprising biophysics, surface sciences, architecture and medicine. Biomimetics as innovation method is characterised by interdisciplinary information transfer from the life sciences to technical application fields aiming at increased performance, functionality and energy efficiency. The contributions of the book relate to the research areas:

- Materials and structures in nanotechnology and biomaterials
- Biomimetic approaches to develop new forms, construction principles and design methods in architecture
- Information and dynamics in automation, neuroinformatics and biomechanics

Readers will be informed about the latest research approaches and results in biomimetics with examples ranging from bionic nano-membranes to function-targeted design of tribological surfaces and the translation of natural auditory coding strategies. For more details, visit the publisher's [website](#).

New adhesive device could let humans walk on walls

Cornell University, 1st February

Could humans one day walk on walls, like Spider-Man? A palm-sized device invented at Cornell that uses water surface tension as an adhesive bond just might make it possible. The rapid adhesion mechanism could lead to such applications as shoes or gloves that stick and unstick to walls, or Post-it-like notes that can bear loads, according to Paul Steen, professor of chemical and biomolecular engineering, who invented the device with Michael Vogel, a former postdoctoral associate. The device is the result of inspiration drawn from a beetle native to Florida, which can adhere to a leaf with a force 100 times its own weight, yet also instantly unstick itself. Research behind the device was published online Feb. 1 in [Proceedings of the National Academy of Sciences](#).

Robot 'skin' senses touch and force

The Engineer, 22nd February

Robotic devices that detect not only being touched but also where and how much force was applied are being developed by researchers in the US and the UK. A team from the Massachusetts Institute of Technology's (MIT's) Media Lab have commissioned touch-technology material developer Peratech to create a new type of electronic 'skin' that will give robots these enhanced capabilities. Read more [here](#).

BIONIS depends on member feedback to provide more to you; where do we want to go next, and what does BIONIS need to do to deliver your aspirations? Conferences, brokerage? Please let us know! The results of the membership survey indicated a bias toward design- designers out there, send your problems to us and our community can discuss.