

The network was set up in Spring 2002, with the help of UK government funding. ***BIONIS*** has now been sponsored for one year from July 2005 by LUL of Sweden. There were **19** founder members from Industry and R & D throughout the UK. There are now **239** Registered Members, from **40** countries worldwide.
Website: www.biomimetics.org.uk Visit it to learn about Biomimetics!

Events

IEEE International Conference on Robotics and Biomimetics (ROBIO 2006)

December 17-20, 2006, KUNMING, CHINA 'The Kunming meeting will build on ROBIO's success the previous two years in Shenyang and Hong Kong, and offer an excellent forum for researchers in robotics and biomimetics from Asia as well as around the world to share their ideas and latest results.' See conference website <http://www.robio2006.org/>

News Items

Learning from the plants: artificial photosynthesis could provide clean energy of future ([Royal Society Press Release](#), 10 April 2006)

At a recent meeting at the Royal Society in London ('Energy.....for the future', 10th and 11th April) it was suggested that an understanding of how leaves convert sunlight into energy could hold an important key to our long term future energy needs. In one of the presentations James Barber, Professor of Biochemistry at Imperial College, London, described a recent breakthrough in understanding the biological catalyst that allows plants and trees to 'split' water to obtain hydrogen and release oxygen New information about this water splitting enzyme provides a blueprint for the development of artificial and non-polluting chemical systems to 'mimic' photosynthesis and use solar energy to split water and produce hydrogen. This could be used directly as a fuel or combined with carbon to generate gas or liquid fuels.

The red-hot power of chillies can kill cancer

By Roger Highfield, Science Editor, [Daily Telegraph, 16/03/2006](#)

The substance in chillies that causes the tongue to burn also drives prostate cancer cells to kill themselves, according to research that could pave the way for new treatments. The pepper component capsaicin makes the cells undergo programmed cell death or apoptosis, says a study published in the journal Cancer Research The Head of Policy and Research of Britain's Prostate Cancer Charity said: "Eventually, it may be possible to extract the capsaicin and make it available as a drug treatment. In the meantime we caution men with prostate cancer in the UK against upping their weekly intake of the hottest known chillies.



How a locust's eardrum could lead to tiny microphones

University of Bristol News 31/03/2006

Being able to hear the smallest of noises is a matter of life or death for many insects, but for the scientists studying their hearing systems understanding how insect ears can be so sensitive could lead to new microphones able to capture and analyse extremely faint sounds.

[Read more](#)

Three Articles from New Scientist you may have missed:

Eagle-cam provides aerodynamic insights [New Scientist 11 April 2006](#)

By hitching a ride on an eagle's back, engineers hope to learn how to build aircraft capable of similar feats of aerobatics. In a series of unique experiments, zoologists Graham Taylor and Adrian Thomas at Oxford University in the UK have equipped an eagle with miniature spy cameras and other instruments to record its movements during flight in precise detail. The tests have already provided new insight into the way birds control themselves



in flight, the pair claim. Taylor and Thomas presented details of their work at the Society for Experimental Biology meeting in Canterbury, UK, last week

Airborne robotic spycraft inspired by seagulls

[New Scientist 03 September 2005](#)

Highly agile airborne drones with flexible wings inspired by seagulls could be used for surveillance within the narrow confines of cities. The US air force has long been interested in "morphing wing" aircraft that can change their shape in mid-flight to carry out different tasks, such as rapid dives or slow gliding for loitering over an area under observation. Now researchers at the University of Florida in Gainesville, led by Rick Lind and funded by the USAF and NASA, have built a prototype remote-controlled drone with a seagull's ability to hover, dive and climb rapidly.

Aviation - The shape of wings to come

[New Scientist 29 June 2005](#)

On 17 December 1903, Orville and Wilbur Wright's Flyer took to the air..... In the second century of powered flight, aviation engineers are still battling to find better ways to solve some of the very same problems the Wrights faced, and many others of which the pair could never have dreamed Ever since the Wrights came up with the idea of steering in the air by bending the wing tips of their aircraft - "wing warping" - aircraft designers have dreamed of being able to alter the contours of their creations while on the move. A new design-approach based on smart materials and actuators could turn shape-shifting from a dream into the hottest aeronautical essential since Frank Whittle's jet engine. The result would be planes with wings that grow, bend and shrink on command, morphing into the best shape for the task in hand.

New Biomimetics Journals

Bioinspiration & Biomimetics was launched in April by the Institute of Physics in the UK.

The first issue is live at the following site: <http://herald.iop.org/bb/m3/arm//link/224>

There is free access to the complete text of articles in Bioinspiration & Biomimetics until 31 December 2006 if you create a user account.

Issue 1 includes a topical review: Micro-optical artificial compound eyes, and three papers: Cooperative optimal control: broadening the reach of bio-inspiration; Nucleation and growth of apatite by a self-assembled polycrystalline bioceramic; 20 Four flippers or two? Tetrapodal swimming with an aquatic robot.

Two Elsevier Journals

MATERIALS SCIENCE AND ENGINEERING: C Biomimetic and Supramolecular Systems

This is an international and interdisciplinary journal which reports on scientific and technical contributions dealing with all aspects of conceiving, designing, constructing and testing man-made materials, structures, devices and systems which replicate or are based on biological entities and processes.

JOURNAL OF BIONIC ENGINEERING

The Journal of Bionic Engineering publishes original research papers and reviews on all aspects of bionic science and engineering including fundamental understandings of animals and plants for bionic engineering, such as locomotion and behaviors of animals, structures, composites, morphology and physical properties of plants and natural materials, applications of such understandings in engineering, technology and designs. The journal aims to promote research and provide a platform for communication of novel ideas, theories and technologies in bionic science and engineering.

The current issue of this journal includes the full paper by Richard Bonser referred to last month: *Patented Biologically-inspired Technological Innovations: A Twenty Year Review*.

These two journals are available online at [Science Direct](#)