



# Welcome to iC News

October 2011

## Australian Institute for Innovative Materials building is the People's Choice

The University of Wollongong's Australian Institute for Innovative Materials building has been awarded the 2011 Australian Timber Design Awards People Choice award.

Better known for its research success, the Australian Institute for Innovative Materials (AIIM) facility which houses two of the University of Wollongong's flagship research groups – the Intelligent Polymer Research Institute and the Institute for Superconducting and Electronic Materials – was selected in an online poll, winning by an overwhelming 2,500 vote majority.

Located at the University of Wollongong's Innovation Campus, the timber building links two state-of-the-art research buildings and houses the University's Electron Microscopy Centre.

Executive Director of the AIIM Facility and Deputy Vice-Chancellor (Research), Professor Judy Raper, said that it was fantastic that the architects, SKM-S2F, were able to design a highly functional yet attractive building to house the University's electron microscopes.

"The AIIM facility is a state-of-the-art research facility housing internationally renowned researchers so it is attracting strong interest from the research community and current and future industry partners.



The extension to the Australian Institute for Innovative Materials facility which adds a \$43.8 million Processing and Devices Facility funded by the Federal Government is in the final stages of fit-out and will be Australia's first multi-functional materials facility with the capacity to scale-up lab-based discoveries and help transform them into commercial reality.

Researchers at AIIM are undertaking research in areas including clean energy technologies, electric vehicle battery technologies, health and medical bionics and innovative new materials that will help lower the cost of production and improve the performance of electronic and other devices.

For further information on the AIIM facility, please contact Paul Scully on (02) 4221 8030.

Follow us on



# Sydney Business School Awarded 2011 ASCL Best in Training, Education & Development

The Sydney Business school recently won the 2011 ASCL Best in Training, Education & Development award. The award recognises the Sydney Business School's contribution not only to formal education and developmental programs relevant to the supply chain and logistics industry but also its ongoing commitment to support the industry via its Centre for Supply Chain Solutions Research and noteworthy partnerships and collaborations.



The Centre for Supply Chain Solutions Research was established by the Sydney Business School in 2005. The objective of the centre was and continues to be to conduct applied research to solve challenging supply chain problems encountered by business for sustainable supply chain improvement. The centre is preparing for some exciting changes including a name change to S3. The current focus of research however continues to be the development and analysis of effective strategies for improving competitiveness through successful management of global supply chains.

Watch this space for future developments: [www.uow.edu.au/sbs/research/researchcentres/index.html](http://www.uow.edu.au/sbs/research/researchcentres/index.html)

If you would like to know more about the Master of Science Logistics, about research conducted at the centre or how you could get involved with the centre please contact Dr Joshua Fan – Co-Director of the Centre on 4221 4041 or via email: [joshua@uow.edu.au](mailto:joshua@uow.edu.au)

## Sustainable Buildings Research Centre breaks new ground at the iC

Construction is now underway for the University of Wollongong's \$26 million Sustainable Buildings Research Centre (SBRC) at the iC, scheduled for completion in 2012. Not only will the SBRC be at the cutting edge of sustainable building retrofitting and technology research, the building itself will push the boundaries of sustainable design to become an inspiration to researchers, industry and the community.

As well as targeting a 6 Star Green Star Design rating, the SBRC has taken the Living Building Challenge, the most advanced measure of sustainability in the built environment today. The Living Building Challenge is a holistic framework driving building designers to set new sustainability benchmarks across seven performance areas: site, water, energy, health, materials, equity and beauty.



The founder of the Living Building Challenge, Jason McLennan, will be in Australia to deliver a workshop and free public lecture series from November 7-15 covering Sydney, Melbourne, Brisbane and Canberra. The University of Wollongong is a National Supporter for the series and we warmly invite you to attend one of the events which are designed for anyone interested in creating a truly sustainable built environment.

Visit [www.ve3.com.au](http://www.ve3.com.au) for registration details or [www.ilbi.org](http://www.ilbi.org) for information about the Living Building Challenge.

## Illawarra Job Creation Fund Open for Business

Prime Minister Julia Gillard and Innovation Minister Senator Kim Carr has announced that the Illawarra Region Innovation and Investment Fund is now open for business.

Businesses with innovative projects in and around Wollongong can apply for financial assistance that will help strengthen the local economy and create new high-skill high-wage job opportunities.

Further information is available from the AusIndustry hotline on 13 28 46, by emailing [hotline@ausindustry.gov.au](mailto:hotline@ausindustry.gov.au) and from the Illawarra Region Innovation and Investment Fund page at [www.ausindustry.gov.au](http://www.ausindustry.gov.au)

## UOW's Success in 2012 ARC Discovery Projects

The Minister for Innovation, Industry, Science and Research has recently announced outcomes for the 2012 ARC Discovery Projects, Linkage Projects and Linkage Infrastructure Equipment and Facilities Schemes.

Total ARC funding awarded to University of Wollongong's researchers across these schemes was \$5.8 million. UOW was also involved in 6 successful Discovery Projects and 13 successful LIEF Projects led by other universities.

Congratulations to everyone involved.

## ENERGY EFFICIENCY TRAINING FOR ENGINEERS



The University of Wollongong (UOW) is offering a new approach to "energy efficiency training for engineers" with a focus on four key educational demand areas and skills gaps:

1. Energy Efficiency In Electricity generation, transmission, distribution and demand-side management (EEIE);
2. Energy Efficiency In the Built Environment (EEIBE). A key way to reduce greenhouse gas emissions;
3. Energy Efficiency enhancements In Industry (EEII). Such a focus is required if Engineers of the future are to make a real difference in their future workplaces; and
4. Changing user perceptions and behaviours to maximise the community's adoption of energy efficient technologies. Critical to ensuring that technical training translates to action and uptake of energy efficient practices and technologies.

CPD courses that will be on offer in 2011-2012 as part of the UOW Energy Efficiency Training for Engineers programme.

For further information on course times and program, please contact Professor Paul Cooper, Director, SBRC, Innovation Campus, University of Wollongong, e: [pcooper@uow.edu.au](mailto:pcooper@uow.edu.au), p: (02) 4221 3355

# New Twisting Artificial Muscles Propel Nano-Robots one step closer to Medical Applications

The possibility of a doctor using tiny robots in your body to diagnose and treat medical conditions is one step closer to becoming reality, with the development of artificial muscles small and strong enough to push the tiny Nanobots along.



Although Nanorobots (Nanobots) have received much attention for the potential medical use in the body, such as cancer fighting, drug delivery and parasite removal, one major hurdle in their development has been the issue of how to propel them along in the bloodstream.

A collaborative team of researchers from the ARC Centre of Excellence for Electromaterials Science (ACES) have developed a new twisting artificial muscle that could be used for propelling nanobots. The muscles use very tough and highly flexible yarns of carbon nanotubes (nanoscale cylinders of carbon), which are twist-spun into the required form. When voltage is applied, the yarns rotate up to 600 revolutions per minute, then rotate in reverse when the voltage is changed.

Due to their complexity, conventional motors are very difficult to miniaturise, making them unsuitable for use in nonrobotics. The twisting artificial muscles, on the other hand, are simple and inexpensive to construct either in very long, or in millimetre lengths.

"This new, giant, rotating type of actuation will open up lots of new opportunities for micro-machines," said Prof Geoff Spinks, ACES Chief Investigator.

Similar twisting muscles are found in nature, such as octopus limbs and elephant trunks. In these appendages, helically wound muscle fibres rotate by contracting against an incompressible, boneless core. The rotation in the helically wound carbon nanotubes used for the twisting artificial muscles is caused by an increase of liquid electrolyte volume within the yarn.

The new twisting artificial muscles research is published on Friday 14th October in Science. The paper is co-authored by collaborators across four countries, led by the ARC Centre of Excellence for Electromaterials Science, Intelligent Polymer Research Institute at the University of Wollongong.

For further queries, please contact Natalie Foxon on (02) 4221 3239.

**Living Building Challenge**  
Lecture & workshop series with founder Jason F. McLennan

INTERNATIONAL LIVING FUTURE INSTITUTE<sup>™</sup> VIRIDIS  
Verde® Greening the built environment

## Imagine

a building designed and constructed to function as elegantly and efficiently as a flower.

Sustainable development visionary and Living Building Challenge founder Jason F. McLennan will challenge the industry to use nature as the ultimate measuring stick for the built environment at workshops and free public lectures across Australia from 7-15 November 2011.

For further details or to register please visit: [www.ve3.com.au](http://www.ve3.com.au)

**Summer membership**  
3 MONTH MEMBERSHIP  
Starts now  
just \$250

Our Summer Membership is designed to give you more!  
You get access to the iC Health and URAC health clubs, the URAC 50m outdoor heated Olympic swimming pool, and access to over 40 Group Exercise Classes\*

\* All summer memberships expire on 28th February 2012  
\* \$2 fee for RPM classes, Pool access only

iC health  
iC Health | Balance fitness | Health

**You must Sign Up BY 30th NOVEMBER**