

Environmental News

Newsletter of LTN's Environmental Technologies Group

Issue 12, November 2010

Hello and welcome to the 12th newsletter of the Environmental Technologies Group. Since our last newsletter we have held events exploring the CRC Energy Efficiency Scheme, implementing green technologies in the field of cloud computing, and Climate Change Risk, Adaptation and Resilience. Environmental technologies also featured heavily in the October Nanotechnologies event, where many of you met our visiting Catalan companies - as detailed below. We hope you enjoy this latest edition, and wish you a happy festive season and a prosperous, and innovative, new year.

- Dr Andy Hebb, Environmental Technologies Group Leader, LTN

LTN and ACC10 networking mission yields Spanish-UK collaborations

SPANISH EEN PARTNER ACC10 REPORTS ON THE PROMISING RESULTS OF OCTOBER'S EVENT.

Companies' goals were exceeded during CONNECT-London, the technological mission organised by ACC10 and LTN in October.

Ten Catalan companies and technological centers were selected to be part of CONNECT-London, organised under the framework of the LTN event on Nano & Microtechnologies.

The participants created a network of almost 150 new professional connections that will very likely lead to potential future cooperation in smart materials projects and applications.

CONNECT missions are part of a program organised by ACC10, the government agency that works for the competitiveness of Catalan companies, to promote technological cooperation by helping to find international partners with expertise in innovative technology solutions, as part of Enterprise Europe Network. LTN, as a partner in Enterprise Europe Network

South-East UK, also promotes professional networking and transnational technology transfer.

LTN's environmental technologies team spent two months applying the CON-

ACC10
Competitivitat per l'empresa

NECT mission methodology, which encompassed individual interviews with Catalan companies during a visit to Barcelona. Their aim was to gain a more detailed view of the needs of Catalan companies. The team was then able to identify UK companies with technology profiles that matched the needs of the Catalan partners.

Participants who attended the event were shown the latest innovations in

nanoparticles and nanosensors applications through medical, environmental, telecommunications and automotive showcases. Talks were given by leading experts from research areas and innovation centers like Fiat, World Gold Council, Nokia and Nanomol, among others.

Catalan companies have been very satisfied for the outcomes of the 40 matches arranged, since 33 out of 40 meetings concluded with serious possibilities of an agreement. Also, they achieved almost 150 professional contacts, especially during the "one2one" networking activity that LTN organised specifically for smart materials professionals.

Catalan companies including Ate Composites, Zanini and CTM, have also reported that cooperation agreements are about to be completed with some of the English partners.

www.acc10.cat

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Innovation training for South-East companies and organisations

The Framework 7 funding calls often cause panic and confusion with applicants uncertain about how to form a team, write a proposal or gain a clear understanding of whether applying is right for their organisation. To this end, Enterprise Europe South-East and the Digital Communications Knowledge Transfer Network have joined forces to hold a training event at the Kent Science Park, on 2 December.

The morning will explore the following questions:

- * why is your organisation participating in a FP7 funding call?
- * what does your organisation want out of the FP7 funding call?
- * what is the FP7 funding call about, and is it right for your organisation?

Once these have been discussed the afternoon will continue with practical tips and strategies for forming a team

and writing a successful proposal.

It will be generic training for FP7 participation and so is applicable to any sector.

Here is what others who have attended previous Masterclasses said:



...I found the session was very informative and it gives me a clear idea as regards to what involves and what you have to do at each stage of the submission of a proposal. I think you have thought through very carefully how to deliver your material to the class.....

.....I found the content extremely useful and you were able to break down what had initially come across to me as a black box of EU FP7 into its very visible and reachable moving parts.

The event is free to attend. To book or register your interest contact the Events Team at events@LTNetwork.org or on 0870 730 8688

Major eco-construction match-making event for 2011

Enterprise Europe Network South-East UK are hosting a matchmaking event to be held alongside a major eco-construction event in 2011.

Eco-Build is one of the biggest events in the world for sustainable design, construction and the built environment.

More than 1000 exhibitors showcasing an extraordinary variety of products and services and more than 40,000 visitors.

On the second day of the prestigious Ecobuild event, held in March 2011, Enterprise Europe Network are proud to be hosting a matchmaking event for companies in the Eco-Construction sector to meet potential partners, customers and suppliers from across Europe.



The event takes place at the heart of the Ecobuild Trade Fair and demand for the limited matchmaking appointments with European companies will be high. To ensure that you get the best chance you simply register on our interactive website then browse other registered companies and arrange your meetings with interesting companies.

You may register for the matchmaking event at www.ecobuild.b2b-match.com or for more information on Eco-Build visit www.ecobuild.co.uk or contact Enterprise Europe Network South-East UK by phone on: 0044 (0)844 725 2244 or email info@enterprise-europe-se.eu

Entrance to Ecobuild and the match-making event is free of charge.

Upcoming LTN events

Decontamination and Recovery Technologies for CBRN threats

23 November 2010

Southbank University, London



Maximising Collaborations in the Automotive Industry

25 November 2010

SMMT Headquarters, London

Nanotechnologies for efficient and clean transportation: innovative projects from Torino Piemonte

[Event supported by LTN]

30 November 2010

Cavendish Conference Centre, London



The Future of E-Health: User and technological perspectives

[Event co-marketed by Health Hub Imaging]

1 December 2010

UCL, London



Framework 7 Master Class: Forming a Team and Writing a Proposal

2 December 2010

Kent Science Park

Nutrition and Health: Food ingredients and nutraceuticals for performance and well-being

8 December 2010

Imperial College, South Kensington Campus, London

LTN events have restricted access.

Visit www.LTNetwork.org/events, email Holly at

h.parker@LTNetwork.org or phone 0870 730 8688.

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Carbon Trust entrepreneur support scheme



A NEW SERVICE TO SUPPORT EARLY-STAGE CLEAN TECH COMPANIES OFFERS EVERYTHING FROM GRANTS TO PR ADVICE

The Carbon Trust has launched a new service designed to 'turbo charge' and stimulate investment in early-stage clean tech companies.

The Carbon Trust Entrepreneurs Fast Track provides a customised package of expert advice, research and development funding and networking opportunities to the leading UK's low carbon technology start-ups.

The Carbon Trust is a key UK low carbon technology innovation specialist and has developed a customised set of services that will help support entrepreneurs get to market faster and with a greater likelihood of success. A new addition from the Carbon Trust is the support to low carbon entrepreneurs to turn their concepts into working prototypes. This will sit alongside an integrated set of services to provide support for technology research and development, as well as strategic commercial and expert technical advice. Each entrepreneur will receive a customised program of support based on their specific needs.

The Entrepreneurs Fast Track provides:

- Advice through commercial and technical consultancy services up to the value of £70k; this can be fully-funded by Carbon Trust
- Grants for research and development from £20k to £500k; these grants will only provide a proportion of the project costs and applicants should demonstrate the source of the remaining funds
- Networking with investors and industry partners through Carbon Trust's contacts.

Some of the key elements of the service may include

Grant funding for technology development of up to £500k including:

- Proving viability of technical solutions
- Building and testing prototypes up to

full scale to develop and demonstrate the technology.

Commercial advice and support of up to £70k including:

- Advising on IP strategies
- Prioritising markets and providing advice on how to enter them



- Building capable management teams
- Help finding customers, partners and investors
- Developing an investor ready business plan and pitch
- Boosting marketing and PR capabilities
- Providing expert engineering, modelling and product development
- Meeting product tests and regulations
- Assistance with scale-up for manufacture

The Trust have built up a great network and try where possible to introduce entrepreneurs to this network. Some of the examples of how our network has helped organisations in the past includes:

- Introductions to suitable potential customers – corporate and SME
- Facilitation with potential partners
- Press opportunities with national, international and trade press
- Introductions to suitable investors
- Involvement in our investor and corporate showcases and forums
- Involvement in Carbon Trust and industry events, debates and consultations

The Entrepreneurs Fast Track scheme has been designed to be simple, effective and quick. Key aspects of the scheme include:

- A fast and efficient application process
- Applications can be received at any time, there are no closed periods
- Close and proactive interaction and feedback from the Carbon Trust on the suitability and status of your application
- A dedicated relationship manager responsible for making sure you get the right help at the right time

For more visit <http://bit.ly/9Ez1QZ>

Upcoming external events

Biodiesel Industry Forum
27–28 January 2011

Kingsway Hall Hotel, London
<http://biodieselforum.agraevents.com>

EU Funding for Utilities: Energy, Water, Waste, Transport
31 January – 1 February 2011

Berlin, Germany
<http://bit.ly/drT7hn>

Sustainable Development
Harnessing the Energy of Communities

24 February 2011
The Barbican, London
<http://bit.ly/b0Hnbd>

World Biofuels Markets
22–24 March 2011

Rotterdam, The Netherlands
www.worldbiofuelsmarkets.com

International Conference on Composite Structures (ICCS16)
28–30 June 2011

Porto, Portugal
<http://bit.ly/akMq8P>



Sponsored postgraduate research group design projects and placements for your organisation



CRANFIELD UNIVERSITY'S FREDERIC COULON REPORTS ON A PROMISING NEW OPPORTUNITY

As the UK's leading industry-focused university, Cranfield has completed a wide range of industrial projects with input from their postgraduate researchers. The Centre for Energy and Resource Technology has MSc students in the following areas (with their respective Course Directors):

- Environmental Management for Business, Dr Raffaella Villa: 01234 750 111 (ext 2320)
- Environmental Engineering & Management, Dr Simon Collinson: 01234 750 111 (ext 2371)
- Environmental Diagnostics & Management, Dr Fabio Chinalia: 01234 750 111 (ext 2794)
- Waste & Resource Management, Dr Frederic Coulon: 01234 754 981

Cranfield's Centre for Energy and Resource Technology undertakes research in relation to the general themes of energy from waste, environmental management system, contaminated land, landfill science, risk assessment and decision-making, life cycle engineering, green chemistry, anaerobic digestion and sustainable resource recovery.

Increasingly, our research includes cross-cutting contributions to the fields of renewable technology, carbon management and sequestration, reliability engineering, environmental diagnostics, risk and decision science and

infrastructure management.

Group design projects typically involve teams of 5-6 students working on an industrially relevant project. MSc project placements form the basis of an MSc student's individual thesis. Previous sponsors have highlighted the following direct benefits for their organisations from sponsoring projects:

- the ability to deliver work through a dedicated project for 4 months of "in-house" research;



- an opportunity to see how potential candidates perform in the workplace;
- the potential, through MSc projects, to tap directly into Cranfield University's broader interests and technical facilities in environmental science and engineering; and,
- the potential for enhanced technical credibility through academic publication of results obtained, subject to commercial constraints;

We aim to complete our project allocations by the end of January at the latest. Therefore, we would be grateful if you could let us know at your earliest opportunity whether you are willing and able to sponsor a project for this academic year. If so, we can

then discuss and develop the subject area of the project and the industrial need that it addresses for you. Cranfield is fully able to respect the confidentiality requirements of our clients.

The group design projects run from mid-February until the end of April. Group design projects are charged at a rate to be agreed depending upon the number of students involved. There is also the option to combine courses to produce a multidisciplinary team.

Msc thesis Projects run from May to end of August. Project details are circulated to the students in January so that we can match projects with student interests. These are then submitted in early September and presented within a 1-day conference to which all sponsors are cordially invited to attend. Project sponsorship comprises a fixed fee of £3,500 for projects undertaken outside of the University campus. Projects organised on campus may require additional resources.

Please feel free to contact us for details.

We look forward to hearing from you soon and meeting your project needs.

- Dr Simon Collinson
Group Design Project coordinator
s.collinson@cranfield.ac.uk

Dr Frederic Coulon
Thesis Project coordinator
f.coulon@cranfield.ac.uk

Want to contribute?

If you have an idea for an article or would like to include an event in the next Environmental Technologies Group newsletter, or on our website at www.LTNetwork.org/sig/env, please contact Andy at a.hebb@LTNetwork.org

Newsletter Feedback!

We are always seeking to improve our news services and would be grateful if you would complete a short online questionnaire about "Environmental News". All answers will be handled in the strictest confidence.
Visit www.tinyurl.com/ltnsurvey.

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Innovation and Industrial Anaerobic Digestion

CLEARFLEAU'S RICHARD GUETERBOCK REPORTS ON THE FUTURE OF ANAEROBIC DIGESTION

The potential for Anaerobic Digestion (AD) is attracting increasing interest in a number of industry sectors, not only for the generation of renewable energy but also for its potential as treatment of waste materials. The new Carbon tax being imposed on businesses will also encourage interest in AD.

Much of the technology available to developers of UK AD plants comes from elsewhere in the EU. While UK companies are investing in developing novel technologies for the home market, we still lag behind much of the EU in this sector. If AD is to contribute to the UK's renewable energy sector, the Government must do more to create an environment which encourages further investment, including an appropriate regulatory framework.

There is a need to stimulate process innovation, encourage the creation of jobs in the sector and develop the skills base to support the industry. These are issues that should be part of the review of AD being undertaken by DECC and DEFRA.

Many existing AD projects involve treating centrally collected food waste or biodegradable materials in large scale "merchant" plants (largely funded by gate fees); the main AD feedstock is the huge volume of food that is thrown away on a daily basis. As these larger AD plants struggle to make efficient use of surplus renewable heat, they will miss out on business opportunities provided by the Renewable Heat Incentive (RHI) to be introduced in June 2011. In addition, as the number of energy from waste plants increases, gate fees are unlikely to remain at current levels.

As the sector develops more innovative technologies other business models can be considered, focussing on a number of different sectors. Currently the main opportunities are

focused on:

- *Merchant Waste Treatment* – large scale AD plants for landfill diverted materials, including household food waste and catering and retail waste.

- *On-farm Slurry Management* – digestion of livestock slurry that tends to be mixed with other wastes, including imported materials or crops like maize and silage

- *Industrial Effluent Treatment* – digestion of liquid effluents and co-products from food and drinks processing as well as from other industrial sectors.

disposal routes add to manufacturing costs and contribute to the sector's carbon footprint.

One large UK food manufacturer spends over £3m pa on the treatment and off-site disposal of waste from its manufacturing site. Now many companies are faced by a carbon tax on their energy use. Many UK food companies are also concerned about their effluent disposal costs. AD offers a number of advantages for such wastes:

- *Cutting the cost of disposal of effluent to sewage works* – this cost is set by the Mogden Formula, as applied by water companies for commercial sites

- *Reducing the haulage of liquid materials off-site for disposal to landfill or other routes, such as for land application or for feeding to farm livestock*

- *Replacing energy supplied from fossil fuel sources with renewable energy produced from biogas that can be returned to the plant as power or heat*

- *Generating income from support provided to renewable energy generators through the various support schemes (ROCs, FITs and the proposed RHI).*

To date, most commercially available on-site AD technologies have either been too bulky or too complex to attract food processors. A number of larger drinks companies in the UK have installed suspended media AD plants on their production sites but this technology is unable to treat waste with a modest fat content. This system is less suited to treating liquid feedstocks from food processing that contain fats and suspended biodegradable solids.

More innovative design solutions are being developed for digestion of industrial feedstocks. Clearfleau has developed a high rate AD process for the on-site digestion of liquid feedstocks from food processing that allows energy to be fed back into the production site. For more information please visit www.clearfleau.com or call Richard Gueterbock on 07831 626206.

Clearfleau™
Energise Liquid Wastes
Optimise Liquid Assets

Each sector needs a different approach and distinct technologies. For instance, the development of smaller scale farm AD, suited to the majority of UK pig and dairy farms, needs technology providers to come up with lower cost designs. To attract farmers with an average 100 cow dairy herd, farm scale AD plants must be easy to install and operate. Another requirement is cost effective delivery mechanisms for injection of upgraded biogas to the gas grid. Both will provide a boost to the industry.

An interesting market for digestion technology is the waste produced by the food and drink processing sector. Many food processing sites generate considerable volumes of "trade effluent" and waste ingredients or co-products, that are readily degradable and often has an energy value, thus is suited to AD. Some of these materials are consigned to sewer or landfill, disposal routes that are increasingly being restricted at considerable cost. Some material is fed to farm livestock or treated on site. Such inefficient

Online technology profiles from Europe

The following profiles are examples of the latest innovations available online now, at www.LTNetwork.org/services/tech-search.asp, as part of an additional free service offered by LTN providing links to innovation on the Continent.

If you're seeking new technologies or would like to market your own innovations to Europe, then visit www.LTNetwork.org or call Andy Hebb on 0870 730 8681.

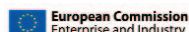


Business Support on Your Doorstep

Title	Abstract	Origin	Type
Know-how and tools for alternative fuel testing in internal combustion engines (Ref: 10 EE 21B9 3J60)	An Estonian university spin-off company specialising in testing alternative fuels and testing the use of said fuels in internal combustion engines. Company has fuel testing and engine laboratory with 3 engine test cells and numerous modern spark ignition and diesel engines.	Estonia	Offer
PS FP7 – 1. SMEs experienced in real time wastewater measurement/industrial wastewater treatment and 2. industrial wastewater plant (Ref: 10 AT 0102 3J33)	An Austrian coordinator seeks partners for an FP7 proposal to improve the efficiency of wastewater treatment of industrial plants with strong deviations in inflow quality. The project aims for the introduction of a model predictive control in wastewater treatment for the management of load variations and dynamic wastewater quality.	Austria	Request
Innovative tool with software for measuring thermal conductivity and effusivity of materials (Ref: 10 FR 36L7 3J09)	A small French company, specialising in thermal metrology, designed a thermal conductivity measurement device based on the Hot-Wire method. The company is looking for technical cooperation but will also consider licence agreement and joint venture.	France	Offer
PS: FP7 – Research for SMEs – Enhanced biogas production through biomass pretreatment (Ref: 10 DK 20B7 3J4E)	A Danish private RTD performer and a Danish SME producing technology for biogas plants are looking for partners to research and develop a superior pretreatment technology which should work in combination with enzymatic pretreatment with the purpose to increase the gas production of less degradable biomasses (agricultural byproducts).	Denmark	Request
Innovative energy saving system for apartment buildings (Ref: 10 EE 21B9 3J5B)	An Estonian SME has developed a novel energy saving solution for apartment buildings that collects the heat departing through central ventilation and uses it in the heating system (including for hot water) of the building. At the same time, the ventilation of the building is improved. A heat catcher is built on top of the building's ventilation chimneys, redirecting the heat to the building's head heating unit.	Estonia	Offer
Windows manufacturing techniques for innovative solution, ecobuilding oriented (Ref: 10 IT 53V2 3J9I)	A small Italian company active in the field of windows manufacture search new manufacturing techniques (profiles, materials) and know-how for making windows. Partners are sought for a technical cooperation or commercial agreement with technical assistance.	Italy	Request

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Title	Abstract	Origin	Type
Material and/or chemical analysis of Organic Light Emitting Diode (OLED) displays and their related devices (Ref: 10 CH 84FB 3J4W)	A Swiss engineering laboratory specialising in analysing audio and video products is seeking an engineering service company experienced in the semiconductor testing field which offers advanced chemical and material analysis of Organic Light Emitting Diodes (OLED) displays such as optical microscopy, scanning electron microscopy or scanning transmission electron microscopy.	Switzerland	Request
Energy efficient ventilation and heat exchange systems with state-of-the-art components (Ref: 10 SE 67CG 3HA0)	An SME from Northern Sweden has developed a line of energy efficient ventilation systems. The products are suitable for new production of buildings, as well as replacement of older systems. Smaller but very strong cabinets make the installation easier. 40-60% energy saving at a given air flow. Low noise and vibrations.	Sweden	Offer
PS: Monitoring the life cycle of industrial waste: traceability and measure of environmental impact. (Ref: 10 IT 56Z4 3J10)	A company from Italy, specialising in handling and disposing of wastes from the industrial sector, wants to launch a research proposal related to the monitoring of the industrial waste life cycle. The project will involve the application of the GALILEO system. Partners needed for Call FP7-Galileo-2011: technical researchers or experts in satellite navigation systems and interested in large-scale experimentation; experts in carbon footprint and corresponding logistics processes.	Italy	Request
Water saving system for water or boiler heaters (Ref: 10 PT 65BN 3ITU)	A researcher from a Portuguese University has developed a system for water or boiler heaters, aiming to promote potable water saving that usually goes down the drain. The invention assures that the water is above a preset temperature. The advantages of this invention comprise economic and environmental gains. The university is looking for water or boiler heater companies for joint development and licensing.	Portugal	Offer
PS: FP7 – Research for SMEs – Bio-oil upgrading for transportation fuel and chemical industry raw-material (Ref: 10 DK 20B7 3J3F)	A Danish SME is urgently looking for a European SME (outside Denmark) in bioplastics, biopolymers or rubber production industries. The proposal is focused on upgrading bio-oil (produced by catalytic conversion of biomass/waste) for use as biofuel or as feedstock for chemical industries.	Denmark	Request
Technology of coal-water slurry fuels (Ref: 10 PL 64BF 3J20)	Researchers from South Poland conduct research on producing coal-water slurry fuels that will be easily transported and enable to decrease NOx and particulates emission to the atmosphere. The research is in the initial stage.	Poland	Offer
New technology which saves energy and reduces heat in LED lighting (Ref: 10 NL 60AF 3IXF)	A Dutch SME is working on LED assimilation technology and testing and developing of LED fixtures. The company holds several patents. One patent is on an efficient power supply that, including circuitry, consumes only 6% of the total energy consumption.	The Netherlands	Offer

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