



Press Release

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Carbon Trust awards grant to C-Tech Innovation for chemical energy efficiency project

C-Tech Innovation has been awarded a development grant of £227,000 from The Carbon Trust to demonstrate the potential of energy savings for a range of chemical reactions.

C-Tech Innovation's expertise in microwave engineering will help build and test a continuous flow, laboratory microwave reactor system that is capable of producing kilogrammes of material per day.

Microwave-enhanced chemistry has been used for a number of years by laboratory chemists, particularly in pharmaceutical discovery, to speed up chemical reactions. However, to date, the technology has only been capable of producing milligrammes or, at most, a few grammes of material.

A key feature of C-Tech's reactor design is that it is scalable, enabling it to form the basis of future industrial units that will be capable of producing much larger quantities of material, up to hundreds of kilos, or even tonnes, of material per day.

The UK Chemical industry's annual energy usage is currently around 68,000GWh, with a significant proportion of this being used in processes associated with the production of chemicals. Advantages achieved through the use of microwaves can lead to substantial energy savings and, for example, the reduction in reaction time achieved at laboratory scale by using microwave technology has been significant. Moving to industrial scale production can result in dramatic energy savings (up to 90%). Couple this with the added



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benefit that higher yields can be produced at the same time, the quantity of reactant that needs to be processed can be cut by up to 50%, resulting in further energy savings.



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The developer, C-Tech Innovation, is a technology development and multi-disciplinary consultancy company based near Chester. The company has more than 10 years' experience in applying microwave and RF heating technology to lab-based and also large-scale production equipment. C-Tech offers a complete, bespoke development service, so that customers receive heating technology solutions that are customised to suit their particular application requirements.

C-Tech Innovation has developed production-scale microwave heating systems for the drying of ceramics, for pyrometallurgy, for plastics processing companies, and large-scale systems for food and beverage manufacturers. By working closely with chemical company partners, C-Tech believes it can help develop industrial microwave heating systems that produce chemical compounds in large, production-scale quantities, whilst simultaneously reducing energy usage and optimising energy efficiency for the customer.

C-Tech Innovation will be presenting on microwave chemistry at Achema 2009, 11-15 May 2009 in Frankfurt. For more details, please contact Paul Radage at C-Tech Innovation on 0151 347 2900 or email: paul.radage@ctechinnovation.com



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Note to Editors: C-Tech Innovation (www.ctechinnovation.com) is an internationally renowned, independent research and technology development company with more than 30 years' experience in providing research and development services to companies, universities and government bodies.

Activities range from research to commercialisation of innovative new products and multi-disciplinary consultancy. Based near Chester in North West England, the company's worldwide customer base ranges from small start-up companies to large multi-nationals.

C-Tech Innovation's facilities and experienced staff provide a complete, flexible service to customers. Fully equipped laboratories and workshops enable experimental and prototype equipment to be designed, constructed and fully proven in complete confidence.

INNOVATION MANAGEMENT

RESEARCH & TECHNOLOGY DEVELOPMENT

INTELLECTUAL PROPERTY EXPLOITATION

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