

IT'S CADARACHE FOR ITER

The decision to site the International Tokamak Experimental Reactor (ITER) at Cadarache near Aix-en-Provence in France was announced on the 28th June 2005.

"The selection of a site for ITER is wonderful news. Rapid construction of ITER will be a major step in the development of fusion as a potential large-scale source of electricity that will not contribute to climate change."
Professor Sir Chris Llewellyn Smith, UKAEA Culham Director.

Dan Mistry, UKAEA Fusion and Industry Manager, also welcomed the decision. "Now that ITER has been given the go ahead, we will be working closely with UK companies to give them timely information on the project and alerting them to procurement processes and deadlines. It is important that companies take time to look at the ITER website. Organisations who are interested in business opportunities should understand the requirements of ITER and then register their interest on our website."

ITER will require the services of numerous organisations with business opportunities for both large and small companies. The ITER procurement philosophy will be to involve industry as much as possible and SMEs in particular.

How will the EU benefit from hosting ITER?

By hosting ITER, the EU will maintain its position at the forefront of fusion research. The existence of such a high technology, cutting edge research facility in the EU will have considerable benefits for EU industry. In addition to the commercial benefits of winning ITER related business, working on fusion projects can have knock-on benefits to companies through improved business processes for quality and project management. Research conducted by CERN, another similar large European science project, indicates that companies benefit up to three times the value of the initial contract through business won from improved competitiveness.

Over the next few months the ITER negotiations including the procurement details will be completed and a Director General for the ITER organisation

appointed. Simultaneously the six parties participating in the ITER project will form their own legal entities to begin the procurement process. The European Legal Entity will be based in Barcelona and will be established in 2006. Its main task will be to procure the components that Europe will provide "in kind."

UK companies wishing to supply to ITER are invited to register their details on the Fusion and Industry web site www.fusion.org.uk

For more information on ITER and Cadarache go to www.iter.org and to www.itercad.org



The new ITER site at Cadarache with the French fusion experiment, Tore Supra, in the foreground

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Meeting the Buyers at Old Trafford

Representatives from UKAEA Culham recently attended a UK Trade & Investment 'Meet the Buyers' event at Manchester United's Old Trafford stadium. The event attracted some 200 companies many of whom expressed an interest in hearing about ITER. "For many companies it was the first time they had come across fusion," said Fusion and Industry Manager Dan Mistry.

Several 15 minute appointments were organised for local industry to meet the buyers. "This was an ideal format with which to introduce ITER and give companies details of the project's scope and how they can find out more. It may be the type of format we might want to use to introduce UK companies to the ITER procurement team," added Dan Mistry.



Nuclear Congress 2005 Event in South Wales

Sir Chris Llewellyn Smith, Director of UKAEA Culham and Dan Mistry, Fusion and Industry Manager attended the "Fuel for Thought" Nuclear Congress 2005 in South Wales.

Over 200 delegates attended the event including key individuals from the government, the Nuclear Decommissioning Authority, UKAEA, British Nuclear Fuel Limited and many contracting organisations engaged in the nuclear

decommissioning programme. Dan told Fusion Business "Chris Llewellyn Smith gave an excellent presentation on fusion and the ITER programme. This was well received as many delegates were not aware of fusion or the forthcoming ITER programme. For me, this was a good networking event and an excellent opportunity to make industry aware of the potential business opportunities that may be available to them from the fusion/ITER programme. Since then several organisations have shown considerable interest in ITER by registering their details on our website database."

2005 MAST Campaign Progressing

Well

The 2005 Physics Campaign on MAST is well underway. A wide range of experiments has already been carried out including studies of high confinement (H-mode) regimes, current generation by neutral beam injection, pellet fuelling and plasma start-up.

EFDA Gives Green Light to JET Enhancements

The EFDA Steering Committee has approved the detailed preparation of three key enhancements of JET, as a part of a proposed "JET programme in support of ITER", which, if funding is secured, will be installed in 2008.

- a new beryllium ITER-like wall
- a major upgrade of the neutral beam heating system
- a new pellet injector

With these upgrades it is anticipated that JET would operate at least until 2010.

More details can be found on www.jet.efda.org.

OXFORD INNOVATION HOLDS NETWORKING EVENT AT CULHAM

Over 60 investors, entrepreneurs and senior representatives of businesses and research organisations gathered at Culham Innovation Centre for a networking event, 'Raising Early Stage Finance', organised by Oxford Innovation in June. The event provided a rare opportunity to gain valuable information on

some potential sources of finance currently available to support start-up businesses and entrepreneurs. Some delegates also toured the Culham Innovation Centre which is designed to encourage the establishment and growth of new businesses by providing flexible premises and business support.

Dr David Kingham, Chief Executive of Oxford Innovation, said: "At Oxford Innovation we support the growth of hundreds of technology businesses through our Innovation Centres. We have seen many examples of the crucial role that small amounts of capital can play in enabling innovative technology companies to expand and grow. So we thought it would be good to bring together all those with an interest in how start-ups raise finance. We were delighted with the very positive feedback from the delegates."

Kurt J Lesker supplies Culham's Special Techniques with Electron Beam System

Kurt J Lesker has recently supplied the Special Techniques Group, at Culham with a new PVD 75 electron beam evaporation system. The device fills a lacuna that has existed for some time between an existing sputter coating unit, requiring sizeable targets of a coating material offering relatively low yield rates, and a thermal evaporator, which is unsuitable for higher melting point materials.

The electron beam unit is able to evaporate high melting point materials and also those with low vapour pressures, at reasonably high coating rates. Coating thickness accuracy is easy to maintain with the system's integral crystal thickness monitor, and processing may be automated for repeatable results.

Simon Hanks, Manager Special Techniques Group at Culham, said, "I have been particularly impressed with the service that Kurt J Lesker has

offered during installation and commissioning of the equipment, which has enabled the system to be brought on-line quickly and efficiently with the minimum of disruption. It is a great addition to the existing inventory of plant and equipment that is so regularly deployed in support of fusion tasks. Indeed the facility has already been relied upon by fusion scientists, who have required a number of probe heads to be coated with precise thicknesses of tin, and have sought aluminised surfaces for a rotating microwave mirror assembly."



PVD75 Evaporator System



Culham Innovation Centre

For more information about Culham Innovation Centre and its companies please telephone 01865 408300. The CIC is run by Oxford Innovation at Culham Science Centre, Abingdon, Oxfordshire OX14 3DB.

Culham's unique Technical Support Package continues to provide support for companies in Culham Innovation Centre

The Technical Support Package (TSP) for suitably qualified companies in the Culham Innovation Centre continues to provide valuable assistance for new product development. The TSP has a proven track record of assisting start-up companies at the Centre with product development and problem solving with the assistance of UKAEA's Special Techniques Group.

Oxford Scientific using TSP to develop new RF plasma source instruments

Since our last report in August 2004, Oxford Scientific has reached an important milestone. The company has sold more than 100 instruments to the HV, UHV, Molecular Beam Epitaxy (MBE), surface science and vacuum deposition communities worldwide. The TSP draws on fusion's advanced brazing techniques to assist Oxford Scientific in the development of new RF plasma source instruments (see below).



"We started by offering only a microwave ion source but soon realised that researchers wanted the option of using a RF plasma source as well. We now offer both microwave and RF plasma sources, and are uniquely able to offer impartial and comprehensive advice on the instrument best suited to their application. Our customers greatly appreciate this objectivity which no other company is able to offer them," says Managing Director, Christian Bradley.

Laplacian using TSP to improve QA on novel magnet

Meanwhile, Laplacian Managing Director, Peter Aptaker has reported that the latest development in magnetic resonance imaging of pre-stressed concrete structures is the production of a lightweight version of the Laplacian scanner.

"The portable scanner will allow engineers to evaluate integrity of critical concrete structures such as bridges. As well as using the UKAEA's TSP for brazing expertise in the manufacture of the magnet, they have helped devise instrumentation needed to validate the unique magnetic field profiles"

Oxis Energy using TSP's specialist skills and resources

Rechargeable battery innovator Oxis Energy Ltd (previously known as Intellikraft) is developing a lithium-sulphide rechargeable battery with greater capacity than lithium ion. The target market for this in the first instance will be rechargeable batteries for power tools. Over the past 12 months the TSP has assisted Oxis Energy with tooling and access to specialist equipment.

"The TSP has been a great help in providing us with a range of specialist resources and skills that would be difficult to find altogether in one place," says Gleb Ivanov, Chief Technology Officer, Oxis Energy Ltd. Recent venture capital investment has allowed Oxis Energy to focus its efforts on lithium-sulphide electrochemistry and as a result the company has taken more space in the Innovation Centre to accommodate product manufacturing and test facilities.



A potential application for the lithium sulphide battery is this prototype electric vehicle being developed by Modec Ltd

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