



# Fusion Business

tomorrow's technology for today

## INNOVATION CENTRE OPEN FOR BUSINESS

Welcome to this special edition of Fusion Business marking the opening of the Culham Innovation Centre. The Innovation Centre is offering engineering and science-based start-up companies the opportunity to benefit from the skills and technologies used in fusion research.

The UKAEA's fusion research facility at the Culham Science Centre, Abingdon in Oxfordshire, is a world-class centre of excellence in fusion research. Overcoming the scientific and engineering challenge of designing a fusion power plant, capable of holding the high temperature plasma formed during fusion, demands leading edge science and engineering skills and technologies.

It is to raise the possibility of drawing on these skills and technologies that the UKAEA is inviting high-technology start-up companies to base their business at the Culham Innovation Centre. Depending on their needs, this could include consultancy and access to mechanical, electrical and electronic engineering skills, as well as computer modelling, precision engineering, plasma technology and diagnostics, cryogenic systems and microwave systems.

Our objective is to create a thriving Innovation Centre in which fusion's skills and technologies can be used to their greatest effect. The Culham Innovation Centre will be managed by Oxford Innovation Ltd, part of the Oxford Trust, and the fastest growing manager of Innovation Centres in the UK with seven other Innovation Centres in Oxfordshire.



*David Potter speaking to the audience in the John Adams Lecture Theatre at Culham*

The centre was launched with a presentation by Dr David Potter CBE, the Founder, Chairman and Chief Executive of Psion plc.

Dr Potter, who worked at Culham during the 1970s, told the audience that he believes European companies can compete even in what can be "brutally competitive and increasingly global markets". To do so, he said, they must focus, not on what their engineers can do, but on what the customer needs. And to succeed and survive in the long run they have to change and learn progressively as they evolve.

The launch of the Innovation Centre has been welcomed by Peter Hain MP, Minister for Energy and Competitiveness in Europe who said: "Innovation is key to the success of the UK economy. I am very pleased that Culham Innovation Centre has been launched to use the technology and science that underpins world-leading fusion research to help develop the next generation of UK high-tech companies."

# EXPLOSIVE GROWTH OF BUSINESS INCUBATION IN OXFORDSHIRE



*Sir Martin Wood talking to Terry and Joan Joslin, Mayor and Mayoress of Didcot and Mayuri Naker, Vale of White Horse District Council Economic Development Officer*

Business Incubation is now one of the fastest growing businesses in Oxfordshire. Oxford Innovation Ltd, part of The Oxford Trust, has opened five new Business Incubation/Innovation Centres in the last year, taking its total of incubation space under management to about 12,000 sq metres, providing space for more than 140 companies. If the separately managed Oxford Bio-Business Centre and the Magdalen Centre on the Oxford Science Park are added, then Oxfordshire and its surrounding area is served by about 18,000 sq metres of business incubation space with capacity for 220 companies.

In 1985 Sir Martin and Lady Audrey Wood (the founders of Oxford Instruments) established The Oxford Trust as a charity and company limited by guarantee to "encourage the study and application of science and technology".

In 1996 a survey of the action and activities of The Oxford Trust revealed that it had provided business incubation space to about 80 companies employing about 500 people at that time, but it had also worked very closely with another 80 companies providing mentoring support and valuable introductions which again were estimated at employing about 500 people.

These results, coupled with the observation that the jobs created were all high skill, high added value and

sustainable jobs with very few failures, led to a big push to establish more Business Incubation Centres throughout Oxfordshire.

Oxford Innovation Ltd has established Innovation Centres in a variety of locations taking advantage of special situations in the property market or special needs for economic activity or regeneration.

Culham Innovation Centre will have an extra dimension as it also aims to encourage spin-outs from the fusion research programme and to accommodate companies that will transfer technology from the fusion programme.

Oxford Innovation Ltd also runs Oxfordshire Investment Opportunity Network, which we believe is the UK's best business angel network for science and technology business opportunities. Many of our tenant companies have used this route to raise investment funds for their business.



We aim for all of our Innovation Centres to be at the centres of clusters and networks linking local industry to each other and to universities, research institutes and business support organisations. Often the Managers of our centres are also acting as facilitators for clusters of specialist industry in the local area.

**David Kingham, Managing Director,  
Oxford Innovation**

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## FROM TRADERS TO TECHNOLOGY TRANSFER

From its inception in 1997 the Fusion and Industry programme has been committed to helping UK business benefit from the research into fusion at the UKAEA's Culham Science Centre. Initially our task was to aid UK companies competing for contracts both within Europe as part of the EURATOM fusion research and within the wider fusion research community globally.



*David Kingham, MD of Oxford Innovation and Cleve Forty, Fusion and Industry Manager of UKAEA in front of the MAST experiment at Culham.*

Fusion and Industry Manager Cleve Forty says: "Over time our role has evolved, to include technology transfer. Companies have used the technologies developed in fusion research to aid their product development and production processes. Our involvement in the Innovation Centre allows us to broaden this technology transfer role to include businesses at the very start of their commercial life. "

High-technology start-up companies will be in good company at the Innovation Centre. They are entering a community where three key ingredients needed to turn a bright idea into a commercially sound business are in plentiful supply: a determination to succeed, a commitment to innovate and, most important, a culture where problem solving is second nature.

David Kingham, Managing Director of Oxford Innovation Ltd, welcomes the initiative by UKAEA: "The UKAEA's support for the Culham Innovation Centre will be very important for those companies who can really make use of the skills and technologies available on the site.

"Another benefit of the site, is its links with UK and European industry and the international fusion research community. New technology-based businesses usually have international partnerships and world-wide markets to address. Being located on a site with an international reputation can help significantly."

## LAUNCH PARTY



More than 200 guests celebrated the opening of the Innovation Centre, among them senior staff from local and national companies, members and officers of local councils, and representatives from education, research, innovation and business advice organisations.

## 40 YEARS AND COUNTING

Culham has a long and proud history of forging successful links with industry. Fusion experiments started here forty years ago and throughout that time scientists here have had an eye on the opportunities for spin offs. As the Culham Yearbook recorded in the late 1960's "ideas and techniques used for fusion are developed and applied to more immediate ends than the relatively long term fusion aim."

Industry links have taken many forms. UK and international companies have long played a significant role in providing equipment, staff and supplies to the site. A variety of technologies developed for fusion have had applications in a range of industry settings, while companies from banking to engineering, including famous names like Dunlop and Kodak, have benefited from testing their products and processes in the challenging conditions fusion creates.

In recent years a number of companies have spun out directly from fusion research.

In 1997 the UKAEA Fusion & Industry programme was launched to further develop this work, helping industry win fusion-related contracts, providing consultancy and identifying new spin off opportunities. The programme has strong links with colleagues in fusion laboratories across Europe, whose work is co-ordinated through the European Fusion Development Agreement.

## NEW OCCUPIERS

The first new occupiers to take space at the Innovation Centre include Christian Bradley, vacuum science consultant, and market research business The Target Practice. Here, in the first of a series of reports for Fusion Business, we focus on another of the new occupiers, Toumaz Technology Limited.

Toumaz Technology Limited is developing Intellectual Property (IP) cores and, where appropriate, hardware products based on Radio Frequency (RF) techniques and ultra-low power silicon design. The technology will be used to develop analogue signal processing techniques where the physics of elementary transistors can be used to perform operations in an analogue way, dramatically reducing the energy per unit computation and increasing power efficiency.

Toumaz Technology was formed to exploit the expertise of Professor Chris Toumazou and various associates within the Circuits and Systems Group at Imperial College, London. It is initially targeting the medical and next generation mobile communication markets, although it is anticipated that the IP will find applications wherever low power CMOS technology is required.

In medical applications, the Group has already designed and fabricated a basic low power analogue signal processor for a fully implantable cochlear (part of the ear), which is currently undergoing pre-clinical trials in Canada. In wireless applications, the Group helped develop the world's first dual mode mobile telephone handset under a contract from a mobile telephone operator in Thailand.

CEO Keith Errey says the international reputation of the Culham Science Centre and easy access to rail and road networks were the main reasons behind the decision to move to the Innovation Centre.



*Joanne Willett, Innovation Centre Manager, handing over the keys to Keith Errey, CEO and Chris Toumazou, Chairman of Toumaz Technology Limited*

## VENTUREFEST 2001

Culham Science Centre will be hosting Venturefest 2001, an intensive programme of conference and networking activities.

The programme will offer a range of sessions describing the "How to" of new businesses, advice on business plans and a business plan competition, investment raising opportunities, an exhibition for inventors and investors and social events for making new contacts.

Venturefest 2001 Chairman Tim Cook says: "Venturefest was created to draw attention to Oxford's commitment to new business innovation and growth, highlighting the area's success in developing fast-growing high technology and knowledge-based enterprise."



In only two years, Venturefest has become a vital date in the UK's business calendar. It is attended by some of the world's most influential venture capital organisations, as well as seed fund managers, business angels and many other organisations and individuals looking for lucrative investment opportunities as well as researchers and inventors hoping to commercialise their inventions.

Last year, Venturefest introduced some 1300 entrepreneurs, scientists, researchers and developers to funders, new partners and new marketplaces and customers.

This year's Venturefest is being held on Monday 25th & Tuesday 26th June 2001 at the Culham Science Centre near Abingdon.

For details of how to attend and to ensure that you are kept up-to-date with news of the event as it develops visit the show website: [www.venturefest.com](http://www.venturefest.com)

