



Fusion Business

tomorrow's technology for today

INNOVATION CENTRE BENEFITS FOR OCCUPIERS

One of the occupiers in the new Culham Innovation Centre says the move could benefit every aspect of his work. Christian Bradley is a specialist designer of scientific instruments found in industrial and university semiconductor research laboratories.



Christian (right) & Robert Stephen in Culham's Electronics Suite

The instruments include plasma sources, electron beam evaporators, electron and ion guns and deposition sources, as well as complete systems and are characterised by having to work in reduced pressures from near atmospheric pressure to ultra-high vacuum.

He says he was attracted to the Innovation Centre by the Technical Support Package available to suitably qualified occupiers and is already using the expertise on site. "I was particularly impressed by the vacuum brazing and electron beam welding facilities here. Access to engineers skilled in these techniques will be of great value in developing the next generation of instruments," he says.

He has also gained from the circuit design and layout expertise of our electronics specialists. "The open access approach at Culham is great; because of the wide overlap with what I do, I can see huge benefits from interaction with people here."

Christian Bradley, tel: 01865 408372.

COMPASS SUCCESS BUILDS COMPANY CONFIDENCE

Collaboration between UKAEA scientists and a fusion spin-off company has helped develop new diagnostics equipment, which could have applications in plasma physics research worldwide.

The Thomson Scattering Polychromator, which measures the temperature and density of the plasma very precisely, was developed by Walsh Scientific Ltd. Five of the devices have recently been used on the COMPASS experiment at the Culham Science Centre with excellent results.

Company founder Dr Mike Walsh says: "This is a turnkey system, like a thermometer, which can simply be plugged into an existing experiment, and be operational immediately. This is a significant advance because until now fusion researchers have had to develop their own temperature diagnostic equipment."

During the experiments on COMPASS, Dr Walsh and his colleagues also introduced a special time delay technique, which allowed each box to take two measurements, so doubling the information captured at the same cost. Dr Walsh says: "Using this delay technique has an element of risk, but it has proved to be a high payback strategy which has worked for us. Building this equipment for a world class facility like Culham has been a big plus for the company, giving us the confidence and the portfolio to show we can deliver."

Following its success on COMPASS, the technology is now being used on the bigger MAST (Mega Amp Spherical Tokamak) experiment at Culham.

More information from Dr. Mike Walsh on 01865 408071 or visit www.walshscientific.com

PEOPLE SPIN OFF

Part Two: Dr David Potter

In this edition of Fusion Business we continue our series, profiling people who started their careers in fusion and are now using the skills they developed in other areas.



David Potter, chairman of the world leading mobile digital computing and communications company, Psion plc, was once a fusion research scientist at the Culham Science Centre.

At Culham in the 1970s he came into contact with computers and their application in scientific modelling. "I worked with Keith Roberts, a colleague who was fascinated by computer technology. His enthusiasm taught me a lot about scientific modelling using mainframe computers," he said.

Dr Potter was able to draw on his Culham experiences when he founded Psion in 1980. "I had three assets. The first was capital of £60,000 made from stock market investment. The second was expertise in software from my academic background. The third was an understanding of the potential that this new industry would develop."

Psion developed from software publishing into software development, becoming one of the UK's leading games software companies, before making the vital move into new markets.

Dr Potter says: "In the autumn of 1982 I found myself sitting in a Greek restaurant with one of my colleagues, Charles Davies, who had been my brightest doctoral student. We began to sketch out on napkins a hole in the market and a hardware product to fill it. What we identified was a personal, portable handheld computing device that could store and manipulate information." In 1984 Psion launched its hardware product, the Organiser. Today Psion has almost one third of the world's hand-held computer market and nearly 40% of the UK market.

David Potter points to his training as a physicist as key to his success. "Physics teaches you humility. You are always subject to validating your ideas. You learn to look at things in the abstract and be critical - but in a positive sense. This allows you to eliminate the things that aren't working," he says.

ITER UPDATE

Negotiations are underway in Europe on funding for the next stage (Framework Programme 6) of the fusion programme, and on our role in ITER (International Thermonuclear Experimental Reactor), which is proposed as the next step for fusion research worldwide.

In January an informal meeting of European Research Ministers considered a working document, prepared by the European Commission, on possible options for the fusion programme in the next four year Framework Programme, from 2003.

The Commissioner, Philippe Busquin, sought members' views on the role that fusion might play in future energy scenarios and on a number of options including European participation in ITER and the possibility of the machine being sited in Europe.

Following this meeting his proposals for FP6 were presented to the Committee on Industry, External Trade, Research and Energy of the European Parliament as part of the normal negotiating process with member states and Parliament. A decision is not expected until much later in the year at least.

STOP PRESS...STOP PRESS...STOP PRESS...

A reminder that the 38th Culham Plasma Physics Summer School is being held at the Culham Science Centre on 16-27 July.

More details contact: Kathy Patton on 01235 463635, or e-mail kathy.patton@ukaea.org.uk

VENTUREFEST

Please remember that the Culham Science Centre is hosting Venturefest 2001, an intensive two-day programme of business advice, investment raising opportunities, exhibitions and networking sessions.



Venturefest 2001 is on Monday 25th and Tuesday 26th June 2001.

Details at www.venturefest.com

WHAT MAKES THUNDERBIRDS GO?



Gerry Anderson (left) presenting a cheque to Tom Pim of the Chiltern and Thames Valley Air Ambulance



A 250-strong audience, from young children to long established fans, enjoyed the latest visit to the Culham Science Centre by Gerry Anderson, creator of the cult TV series "Thunderbirds".

Mr Anderson combined anecdotes, old video footage, adverts and slides to make his presentation about the special effects and techniques used in his work. During the presentation, to mark National Science Week, he also treated the audience to a sneak preview of his next project, showing a trailer for a full-length feature film starring another of his creations, Captain Scarlet.

He told the audience: "When I started in this business I had never seen a puppet in my life; I wanted to make feature films. I think people enjoy Thunderbirds

and the shows I've made, as there is a great technical fascination for seeing models behaving as realistically as possible on the screen. It makes fantasy seem acceptable."

He also took along with him some of the models from famous TV shows including Captain Black and Joe 90. Proceeds from a charity collection, which topped £400, will go to the Chiltern and Thames Valley Air Ambulance.

It is the second time in the last year that Gerry Anderson has visited Culham. Earlier he was here to research scripts for the Captain Scarlet TV film (see Fusion Business 12) which will be set in the year 2065, when fusion power stations should have been operating for some years.

CONTRACTS BULLETIN

As well as being responsible for the UK's input to the European fusion research programme, UKAEA is responsible for the care and dismantling of its old nuclear facilities, and disposal of the waste in a safe and an environmentally acceptable way.

The Contracts Bulletin is a quarterly UKAEA publication which aims to keep potential contractors fully informed about opportunities in work packages that are, or will be, available.

You can access the Contracts Bulletin via UKAEA's website at www.ukaea.org.uk or directly by joining our mailing list. Please contact: gail.steer@ukaea.org.uk



CULHAM EXHIBITIONS RAISE COMPANY PROFILES

Metals and materials suppliers Goodfellow Cambridge Limited and measurement technology specialists National Instruments are the latest companies to take the opportunity to exhibit their business at the Culham Science Centre.

Goodfellow Cambridge Limited is a supplier of small quantities of metals and materials for research, development and prototyping and has been a supplier to Culham for many years.

Goodfellow representatives, Nick Oniskey and Stephen Aldersley, answered questions ranging from general enquiries about the company's range of products to requests for materials, which would be suitable for specific applications.

The company's Business Development Manager, Stephen Aldersley, says the day was a success. "The objectives of the exhibition were to meet both existing and potential customers, and to raise the profile of Goodfellow within Culham. These have been met admirably".

Further information about Goodfellow Cambridge Limited on 01480 424800 or email info@goodfellow.com



National Instruments (NI) is a rapidly growing company involved with a number of leading edge measurement and automation technologies based on today's computer platforms.

NI's Key Account Manager, Joe Woodford said: "We were delighted to be invited to exhibit on the Culham site, enabling us to demonstrate the latest advances in CompactPCI/PXI and our major software tools such as LabVIEW and Labwindows/CVI. "

"The exhibition was a unique opportunity to meet with scientists and engineers who may otherwise have been unaware of the diversity of our product offering."

Following the show NI had several interesting enquiries. Further details from Joe Woodford on 01635 523545 or e-mail: joe.woodford@ni.com.

If your company would like to exhibit at Culham, please contact Deniese Willis on 01235 463296 or email: deniese.willis@ukaea.org.uk



Any comments?

Do you have any subjects you would like to see covered in future editions of Fusion Business, or any comments on this edition? If so, please contact miriam.mason@ukaea.org.uk or call 01235 464104.

Tender & Contracts update

Five UK companies are among those to be nominated to tender for the latest European fusion contracts. The contracts include the geological review of possible sites for fusion's next step ITER programme and work on projects at Cadarache, France and Garching, Germany.

If your company would like to be added to our approved database, please e-mail: miriam.mason@ukaea.org.uk or call 01235 464104.