

LORD SAINSBURY - successful ventures

Lord Sainsbury, Under-Secretary of State for Science and Innovation, met with the key partners of the Knowledge Starts Partnership at the Royal Victoria Inn on 20 January 2004. The Minister spent around 50 minutes in a private meeting with some of the Partnerships key players and spent time at an exhibition showing some of the successful commercial ventures from the two Universities.

The purpose of the private meeting was for Lord Sainsbury to learn more about the success of Knowledge Starts in contributing to the local economy. He was very interested in the fact that this kind of city level partnership can bring such rewards and asked for more information about a number of schemes, including the University of Sheffield's programme for bringing academics and managers from major businesses together to look at innovative approaches for the companies.

After the meeting Lord Sainsbury spent time looking around an exhibition featuring key commercial success stories from the two Universities. The exhibitors were:

- **The Advanced Manufacturing Research Centre (AMRC)**, a collaboration between Boeing, and the University of Sheffield to launch the Advanced Manufacturing Park (AMP), a high-tech hub for Yorkshire and Humber's advanced engineering and metals cluster.
- **The advanced product development centre (apdc)** at Sheffield Hallam University, a multi-disciplinary product development consultancy with a reputation for generating innovative product solutions.

- **Biofusion at the University of Sheffield**, a project to spin out a number of bioscience companies through collaboration with a group of entrepreneurs.
- **The Enterprise Centre at Sheffield Hallam University**, a department dedicated to supporting research, encouraging and assisting commercialisation and promoting enterprise.
- **The Materials Research Institute at Sheffield Hallam University**, a centre of excellence in industrially-oriented research and home of the Materials Analysis and Research Services Centre (CIC). *More details inside.*
- **The Polymer Centre at the University of Sheffield**, a consultancy which embraces topics at the forefront of polymer science and engineering. *See page 3.*

The Minister spent several minutes with each of the exhibitors and praised the project for its innovation and successful collaboration. His visit coincided with Objective One's Technology for Tomorrow's South Yorkshire conference, where he gave a key note speech about the importance of innovation for the UK economy.

Mark Mawhinney, Project Director said, "This was a prestigious visit that confirmed the uniqueness of the Knowledge Starts Project. National figures are being attracted to see the success story in Sheffield now that the processes are in place and both Universities are creating companies and jobs".



Above left: The Minister examines a wire tensioning tool developed by APDC

Above centre: Lord Sainsbury talks with Peter Grant from Biofusion

Above right: Enterprise Challenge winner 2003, Peter O'Neill, the brains behind Madhouse Software Productions



3D Imaging Technologies invited to exhibit at CeBIT

Sheffield Hallam University spin-off company, 3D Imaging Technologies, has been honoured to receive an invitation to exhibit at the internationally renowned CeBIT Information and Communication Technologies (ICT) exhibition.

The CeBIT exhibition takes place in Hanover in March and is recognised as the world's number one event for the ICT sector. The exhibition is an acclaimed showcase of innovative products and solutions, and is the only event where representatives of business, science, politics and the media can view all the latest trends.

The 3D Imaging Technologies team, headed by Prof. Marcos Rodrigues, have developed a unique technology for multiple-stripe scanning which provides a virtually instantaneous 3D picture of the target surface, using original algorithms and set-up conditions. The team is also working on new methods of surface reconstruction from point cloud data which will enable definition of some topological information in purely mathematical terms. It is hoped that this will then lead to new and improved methods for image registration and 3D reconstruction.

The market value of this process is already recognised and the group have a number of patents on 3D surface acquisition in application. This is the focus of major interest for a number of industrial applications and negotiations are underway with a large international developer and distributor of 3D imaging equipment.

Support is being provided by the Enterprise Centre's Dr Jon Harris, who is currently preparing 3D Imaging Technologies Ltd. to be launched as a spin-out company from the University. It is hoped that the CeBIT exhibition will provide the company with the platform to launch as a trading entity, attract more industrial interest and further raise the company's profile in the international market.

In Focus: Materials Analysis & Research Services Centre for Industrial Collaboration (CIC).

Yorkshire Forward's mission is to revitalise the Yorkshire and Humber's regional economy by attracting inward investment, funding community based regeneration schemes and increasing the availability of training for the region's workforce. One aspect of Yorkshire Forward's aims is to encourage knowledge transfer between academic, educational institutions and businesses of all sizes and this is the particular remit of the Centres for Industrial Collaboration (CIC).

The Materials Analysis and Research Services (MARS) centre is based at Sheffield Hallam University in one of the highest rated materials departments in the new universities sector and headed by Professor Jack Yarwood. MARS is one of six CICs set up by Yorkshire Forward to help businesses exploit world class research currently being undertaken by the universities in the region.

The centre's Commercial Manager, Dr Nick Farmilo, is available to assist industrial clients in solving their technical design, product development or production problems. Businesses which could gain particular advantage from this work would include companies operating in the aerospace or automotive industries, those who produce medical devices or companies with interests within the materials field.

The Centre offers materials expertise for applied research and consultancy backed up by a wide range of sophisticated materials analysis and characterisation techniques including Scanning Electron Microscopy (SEM), X-ray Diffractometry (XRD) and X-ray Fluorescence spectrometry (XRF) plus a number of other investigation techniques and consultancy services. It maintains a complement of staff dedicated to consultancy work and has wide experience in working with SMEs to attract SMART, CRAFT and Knowledge Transfer funding.



Further information is available from Professor Marcos Rodrigues, email: m.rodrigues@shu.ac.uk or from the following websites www.shu.ac.uk/scis/artificial_intelligence or www.3DImagingTechnologies.co.uk

The Centres for Industrial Collaboration were officially launched at a high profile reception on 12th January. The event, hosted by Yorkshire Forward, included guest speakers Lord Sainsbury and former political spokesman Alistair Campbell.

Further information is available from Dr Nick Farmilo. Tel: 0114 225 2017, email: n.farmilo@shu.ac.uk or from the website www.shu.ac.uk/schools/research/mri

Sheffield Polymer Centre: Open for Business!

Working at the industrial-academic interface of polymer science and engineering



What is the Sheffield Polymer Centre?

The Polymer Centre at Sheffield University brings together the widest range of multi-disciplinary polymer science and engineering expertise available in the UK from one organisation. There are 40 academic staff drawn from the Departments of Chemistry, Physics and Astronomy, Engineering Materials, Chemical Engineering and Mechanical Engineering, and from the Schools of Medicine and Dentistry. In total the Centre brings together more than 160 researchers working on activities ranging from the synthesis and characterisation of new speciality polymers, through studies of how they behave, to applications in advanced technologies. The objective of the Centre is to help build industrial and commercial activity in high technology areas.

A bit of science

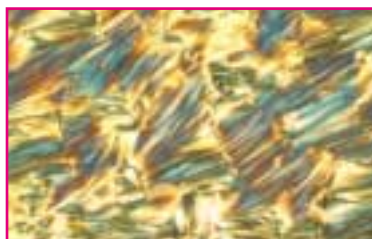
One of the key skills at the Polymer Centre is combining the polymer synthesis expertise with the specific application so that a purpose built polymer can be designed to perform a specific task.

For example 'smart' materials are those that change in response to a change in their environment. Within the Polymer Centre this concept is being applied to microwave 'stealth' technology, drug delivery systems, gas and bio-sensors, and smart packaging for food (e.g. that indicates when food is decaying).



The manipulation of the way that polymers interact with light is a central expertise at Sheffield and has been used to produce organic LED's, new photovoltaic cells, unique methods for studying polymer structures, and new colour technology for packaging and security applications.

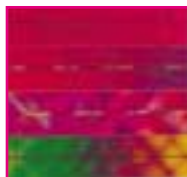
Originally plastics were seen as electrical insulators. Now polymers are being hailed as the next generation of 'organic electronics'. Work at Sheffield has focussed on battery electrolytes (now standard in most mobile phones) and the development of cheap, flexible semiconductors and transistors.



Optical image of a liquid crystal structure in battery electrolyte



A FET (field effect transistor) on a flexible substrate



Examination of modified fibre surfaces used in fibre reinforced composites.

Whether it is being applied to tissue engineering or polymer composites, the modification and understanding of surfaces and interfaces is core to many aspects of Polymer Centre work.

Polymers also have many engineering applications and those that are currently being developed within the Polymer Centre include: light weight bearings, aerospace composites, toothbrushes, mouth guards, vibration damping in engines, and self-healing composites.



Human cells growing on specific areas of a modified surface

Continued on back page >

WHAT CAN THE POLYMER CENTRE DO FOR ME?

• Contract Research, Consultancy and Testing Services

Industrially funded research projects with clear commercial benefit. These include problem solving and access to an extensive range of testing and analysis equipment facilities.

• Training and Education

A portfolio of short training courses aimed at industry to support the technology base of the UK.

• Commercial Exploitation and Entrepreneurship

A focus to identify and develop commercially viable new technologies and deliver them to the market via joint ventures, spin-out companies and licensing.

• Industrial Seminars

Giving regular opportunities for industrialists, and others, to learn about recent developments in polymer science and engineering, and to identify opportunities for collaboration.

> Continued from page 3

Polymeric materials can be built up from individual molecules making them ideal for micro and nano-scale applications. This property is currently being exploited to make chemical microreactors, molecular machines, self-assembled monolayers, nano-devices and thin films.

WHAT ELSE DO WE GET UP TO?

• **Research** – Pure, applied and collaborative multi-disciplinary research to explore the frontiers of polymer science and engineering knowledge and work with both industrial and academic partners to maximise the impact of this work.

• **Research and Training Partnerships** – Forming partnerships with both small and large companies (and relevant funding bodies) that deliver research and training expertise of mutual benefit to both parties over the longer term.



A light weight polymer bearing.

• **Demonstrator Projects** – Projects designed to show the commercial potential of products, processes and applications arising from Polymer Centre research.

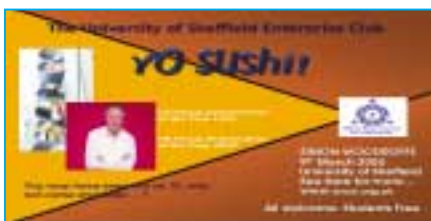
• **Outreach Activities** – To interact with local schools and community groups to increase the public understanding and awareness science

If you would like any further information regarding these and the other activities of the Polymer Centre then please visit our website (www.polymercentre.org.uk) or contact Dr Malcolm Butler (m.a.butler@sheffield.ac.uk or 0114 222 9537)

THE ENTERPRISE CLUB - YO SUSHI!

The Enterprise Club will be hosting a special event in the spring of 2004.

The event will promote innovation and entrepreneurship, indicating what has been achieved by The University of Sheffield and the organisations that can assist those who would like to try. Entrance will be by ticket only but is open to all. Admission to students will be free. The headline speaker will be Simon Woodroffe of Yo Sushi who will talk about Entrepreneurship.



Lambert Review of Business-University Collaboration

The Lambert Review, commissioned by HM Treasury, the Department for Education and Skills and the Department for Trade and Industry, was published in 2003. It makes a series of recommendations aimed at smoothing out the path between Britain's strong science base and the business community.

They include a greater role for the Regional Development Agencies in facilitating knowledge transfer in their regions, increased and improved "third stream" funding for knowledge transfer, Universities to develop a code of governance and to demonstrate good

protocols for intellectual property (IP) and through encouraging new forms of formal and informal networks between business people and academics.

The need for greater and better informed demand from industry was a strong theme of the report. A separate report from DTI in December noted that returns on Mergers & Acquisitions are poorer than returns on R&D, and yet industry still sees M&A as more effective.

Lambert's note on a need for 'demonstration of good management' by Universities is an area currently being addressed through the Knowledge Starts project here in Sheffield.

www.hm-treasury.gov.uk/consultations_and_legislation/lambert/consult_lambert_index.cfm

Corporate Venturing UK



Dr Nick Cox, Director of Corporate Venturing, recently presented to the Knowledge Starts Strategic Board.

Corporate Venturing UK is sponsored by the DTI as part of a wider initiative to encourage economic growth at all levels through entrepreneurship and innovations.



The organisation's objective is to stimulate use of corporate venturing by educating businesses and providing a market place and administrative resource for establishing corporate venturing deals.

A confidential web based 'shop window' is offered to customers, which companies looking for corporate venturing opportunities can access to locate partners matching their requirements.

For more information about Corporate Venturing UK visit www.corporateventuringuk.org

