

connective

Scottish microelectronics centre



The Scottish Microelectronics Centre
Scotland's world class Centre for
Incubation, Research and Development
in the semiconductor sector

SMC welcomes Pyreos

The Scottish Microelectronics Centre is delighted to welcome Pyreos, a spin out from Siemens that recently secured £2 million in funding for their Infrared Sensor Array Technology.

Pyreos was founded in July 2007 by Edinburgh based entrepreneurs Jeff Wright, Scott Freeborn and Carsten Giebeler with the support of Siemens Technology Accelerator (STA). The aim was to take advantage of the growing applications for advanced infrared sensor array technology, which has a significant role to play in the environmental and security related markets. Pyreos aims to make Scotland a leading global supplier of infrared sensor components, utilising a unique patented thin-film pyroelectric infrared technology acquired from Siemens. **Jeff Wright** said, "Pyreos is delighted to benefit from Scotland's world class Research & Development facilities at the SMC."

The Company's products are produced using semiconductor processes and can add value to a range of devices including motion detectors used for reducing energy consumption, flame detectors for improving industrial safety, portable spectroscopy products used for environmental monitoring and infrared cameras used in security and energy monitoring. By the year 2012, the estimated global market in these areas will rise to £500 million. Early discussions with OEMs and system integrators have been positive. Several are already testing early samples of the Company's products for specific market applications.

Investment totalling around £2m has been made in Pyreos by Braveheart, an Investment Company based in Scotland, STA (a wholly-owned subsidiary of Siemens) and the Scottish Venture Fund (SVF).

The relevant IP patents have been assigned to Pyreos from Siemens, and the close working relationship between the two companies is helping to bring the Company's initial range of novel infrared sensor arrays into production and to the market. Pyreos also has a number of other development and manufacturing partners.

Jeff Wright, Chief Executive and co-founder of Pyreos, attributed the successful funding to their close working relationship with Braveheart, STA and SVF, and added, "This will enable us to accelerate the Company's operations and bring our products to market as quickly as possible."

Commenting on the investment Geoffrey Thomson, Chief Executive of Braveheart, said, "We were delighted to work with STA and Pyreos, settling the new business in Scotland. The global market for infrared detectors is set to grow considerably, and we are confident that Pyreos will make an important contribution to this market."

Rudolf Freytag, CEO of Siemens Technology Accelerator, was also enthusiastic. "In Scotland we found the ideal mix of strong investors, an excellent management team, and the right high-tech infrastructure to support a new technology company. We are confident that the Pyreos technology will make an important difference in the infrared detector and camera markets."

Siemens continuing support is also reflected in the ongoing presence of **Christian Wiesinger, CFO of STA**, as a Non-Executive Director of Pyreos.

**For further information on Pyreos please contact Jeff Wright
Tel: +44 (0)131 650 7009**



CMOS-MEMS transducers create new ways of listening



Scottish-based Wolfson Microelectronics Plc has recently completed a successful study into the use of CMOS-MEMS ultrasound transducers as user interfaces for portable devices. Carried out in collaboration with the University of Edinburgh as part of the company's Graduate Programme, the six-month project drew on the excellent prototyping facilities of the SMC to enable

MEng student Errol McMullen to develop prototype transducers and a demo application.

Wolfson recently launched its new AudioPlus™ strategy, adding innovative technologies to their world-leading mixed-signal semiconductors for high performance audio and offering exciting new user experiences. Building on Wolfson's already renowned Pure Sound technology, the Wolfson AudioPlus™ technique is an important development in the chain of Smart Power, Enhanced Soundware and True Mic product areas. True Mics are

based on silicon microphones developed using Wolfson's proprietary CMOS-MEMS technology platform.

To extend the AudioPlus™ strategy, Wolfson is exploring the use of CMOS-MEMS transducers to connect the digital world to human senses. Such advances will be required to unlock the power of future portable devices. The successful modelling, design, fabrication and test of ultrasound CMOS-MEMS transducers is an important first step.



"Using the excellent prototyping facilities at the SMC and the processes developed for the Wolfson CMOS-MEMS microphone, it was possible to produce working ultrasonic devices at the first attempt", said Anthony Traynor, Senior Process Manager at Wolfson. "Collaboration with the University of Edinburgh, and the SMC in particular, plays an important role in Wolfson's research. In the dynamic consumer electronics market, it allows us to stay ahead through continuous innovation."

For further information, please contact Dr Tsjerk Hoekstra, Technology Manager at Wolfson Microelectronics Plc, tsjerk.hoekstra@wolfsonmicro.com

S2K Conference 2008



JEMI are pleased to announce that following the success of the 2007 conference in Cardiff S2K will stay in the city for a second year, strengthening the links between the Scottish and Welsh capitals. The dates are May 8th and 9th 2008, and the venue is Cardiff's magnificent City Hall. Iain Hyslop, Chief Executive of the Scottish Microelectronics Centre said he is delighted that the SMC are participating at the S2K conference in Cardiff this year.

The 2007 event attracted representatives from some of Europe's leading semiconductor and optoelectronics companies. The two-day conference and exhibition is now the leading networking event in the European calendar, bringing together the companies, technologies and people who are shaping the future of the industry.

In 2008 there will be a number of changes to the previous format, such as a five-paper debate from leading industry commentators on the theme of supply chain development, including key case studies from organisations that have created successful innovative models in the industry.

Speakers have been invited from Intel, Infineon, STMicroelectronics, Metryx and Yole Development. Two new workshops have also been added to the S2K agenda. There will also be an opportunity for companies to exhibit in the spacious new table-top area, where exhibitors have an opportunity to display their products and services in a positive and relevant environment.

For more information on S2K, or to become a JEMI member, please contact Ingrid Prince at the JEMI office on +44 (0)131 650 7815 or email jemi-enquiries@see.ed.ac.uk

SMC completes the first phase of a development partnership with Novatrans

At a meeting in Tel Aviv in November, the SMC successfully delivered the results of the first phase of an exciting and innovative R&D project to Novatrans. The project has significant technological challenges which the SMC looks forward to partnering with Novatrans to solve in the future, enabling an innovative and disruptive product to be brought to market.



Alan with friends and colleagues at the SMC

Best Wishes to Alan Gundlach

Friends and colleagues at the SMC gathered to say goodbye to Alan Gundlach at the end of December.

Alan Gundlach finally retired from the SMC at Christmas 2007 ending 29 years at the University of Edinburgh, working part time for the last five years.

Alan worked in microelectronics for most of his career. A physics graduate, he was involved in the manufacture of thermionic valves before switching to solid state devices at Texas Instruments. In 1978, he joined the University of Edinburgh and brought a wealth of professional industrial experience to the activities of what was then known as the Central Microelectronics Processing Facility in the Department of Electrical Engineering. Alan established what we would now call a 'silicon foundry' in Edinburgh – later renamed the Edinburgh Microfabrication Facility (EMF) – to process MOS devices for researchers in other universities. At first, a single-poly, single-metal, nMOS process was run on 3 inch wafers using contact lithography at 6 micron minimum geometry. A major upgrade of equipment and facilities in 1983 enabled smaller geometries to be offered, with stepper lithography and anisotropic etching, culminating in a CMOS process with 1.5 micron minimum geometries.

Between 1978 and 1993, some 600 different designs of chip were processed in the EMF under Alan's guidance. From the initial concept in 1997, he was involved in the design and planning of the SMC building and in the moving and re-commissioning of virtually all the processing equipment.

Alan's contribution to microelectronics research has been immense. Those of us who are still working in microfabrication, in Edinburgh and further afield, owe a great deal to him!
We wish him well in his retirement and hope that he will keep in touch!



MicroEmissive Displays shortlisted for prestigious award

The leading edge work of MicroEmissive Displays (MED), based at the SMC, won industry recognition when the company reached the finals of the Elektra 07 Awards, one of the most prestigious product technology and business awards in Europe. The awards, which recognise the achievements of individuals and firms from throughout the European Electronics industry, are designed to promote best practice and drive the industry forward.

There are fifteen categories in the awards, and MED was short-listed in the Research and Development category for the design and development of its QVGA resolution P-OLED microdisplay-eyescreen™ ME3204. MED staff attended the award ceremony and dinner at the Hilton on Park Lane in London on Wednesday 12th December, when the trophies were presented by Sir Trevor McDonald.

For further information about MicroEmissive Displays, please contact **Dr Natalie Polack**, Product Marketing Manager, on +44 (0)131 650 7764 or e-mail info@microemissive.com



contact us

Valerie McDermott, Business Manager
Tel: +44 (0)131 650 7474
Valerie.McDermott@ed.ac.uk



The Scottish Microelectronics Centre
The King's Buildings, West Mains Road,
Edinburgh EH9 3JF
Tel: +44 (0)131 650 7474
Fax: +44 (0)131 650 7475