



Centre for Integrated Photonics

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Ground breaking technology deployed by consortium to enable uncooled operation of advanced photonic devices

** Centre for Integrated Photonics, Bookham, Epichem, Loughborough Surface Analysis, the University of Sheffield and the University of Surrey are jointly awarded £1.7m (\$3m) by the UK's DTI to develop new technologies for uncooled operation of advanced photonic components*

Ipswich, UK, February 9, 2006

The Department of Trade and Industry in the UK has awarded funding to a collaborative project to develop advanced InP-based photonic materials and devices as part of its Technology Programme. The organisations involved are Centre for Integrated Photonics (CIP), Bookham, Epichem, Loughborough Surface Analysis (LSA), the University of Sheffield and the University of Surrey (UniS).

The £1.7M (\$3M), 2.5 year project called ETOE (Extended Temperature Optoelectronics) has two main thrusts. The first is the development of active devices containing aluminium. This will enable the high temperature operation of a range of advanced devices including fixed frequency and widely tuneable lasers, semiconductor optical amplifiers (SOAs), superluminescent diodes (SLDs) and avalanche photo diodes (APDs). The second is the development of improved processes for the MOVPE growth of semi-insulating current blocking layers using ruthenium doping to enable higher speed modulation of devices.

Results from the project are expected to lead to uncooled operation of high speed, high power lasers and SOAs which will enable drastic reductions in power consumption and allow closer stacking of optical interfaces.

The project partners' roles cover all aspects necessary to develop new MOVPE processes from precursor technologies (Epichem), layer growth (Bookham and CIP), structural design and modelling (Bookham, CIP, Sheffield and Surrey) to device fabrication (Bookham and CIP) with comprehensive characterisation at all stages to assess progress (LSA and Sheffield and Surrey). The complementary skills assembled for the project team ensure a high level of success in this ambitious area.

Ian Lealman of CIP, project manager for ETOE said "This project brings together a number of key players in the optoelectronics industry and academia to work collaboratively on fundamental technology solutions. This will enable the development of processes and materials that will help drive increases in speed, temperature performance and tunability."

Text available at: www.wordsun.com/cip9.htm or www.ciphotonics.com/cip_press.htm

The Centre for Integrated Photonics (CIP) is a leading supplier of advanced photonic hybrid integrated circuits and InP based optoelectronic chips, devices and modules for communications, biomedical, defence and industrial markets. CIP is also a major provider of technical services and consultancy in the photonics field. The companies co-located development and manufacturing facilities are based in the UK and CIP achieved ISO9001:2000 qualification in 2004.

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Bookham is a global leader in the design, manufacture and marketing of optical components, modules and subsystems. The company's optical components, modules and subsystems are used in various applications and industries, including telecommunications, data communications, aerospace, industrial and military. The company has manufacturing facilities in the UK, US, China and Switzerland; and offices in the US, UK, Canada, China, France and Italy; and employs approximately 2000 people worldwide. Bookham is a registered trademark of Bookham Technology plc.

Founded in 1983, **Epichem** manufactures a wide range of high purity precursors used across the semiconductor, electronic and optoelectronic industries. With manufacturing and distribution facilities on three continents, Epichem has a global supply network to service all markets from local sites. Epichem's strong R&D background ensures that the product ranges available include chemicals to meet both current and future customer demands. Working with world leading groups, novel materials systems continue to be developed to meet industry roadmaps. Coupled with our innovative precursor delivery and monitoring systems Epichem is acknowledged as at the forefront of precursor technology and a leading provider of comprehensive product supply packages.

Loughborough Surface Analysis Ltd. is an independent company established in 1997 to provide a responsive surface chemical analysis service to high-technology manufacturing companies and universities worldwide. With particular expertise in SIMS analysis of compound semiconductor materials, the company presently operates three SIMS instruments, an Auger electron spectrometer and a laser ablation ToF system, all backed up by sample preparation and microscopy facilities. For more information visit www.lsaltd.co.uk

The University of Sheffield is one of the UK's leading and largest universities, and a member of the Russell Group. It has over 24,000 students from 117 countries. With its reputation for world-class teaching and research excellence across a wide range of disciplines, it has well-established partnerships with a number of universities both in the UK and abroad, as well as with many leading UK and global companies.

The University of Surrey (UniS) is one of the UK's leading professional, scientific and technological universities with a world class research profile and a reputation for excellence in teaching and research. Ground-breaking research at the University is bringing direct benefit to all spheres of life – helping industry to maintain its competitive edge and creating improvements in the areas of health, medicine, space science, the environment, communications, defence and social policy. Programmes in science and technology have gained widespread recognition and it also boasts flourishing programmes in dance and music, social sciences, management and languages and law. In addition to the campus on 150 hectares just outside Guildford, Surrey, the University also owns and runs the Surrey Research Park, which provides facilities for 140 companies employing 2,700 staff. The 2005 Guardian University League Table placed the University of Surrey 18th overall for its undergraduate programmes (out of 122 UK universities), which along with recognition from The Sunday Times for being 'The University for Jobs', underlines UniS' growing reputation for providing high quality, relevant degrees.