OCUITY DEMONSTRATE 3D DVD PLAYER

At SID’s EuroDisplay 05 conference in Edinburgh, UK on September 19-22 Ocuity will present a 15” switchable 2D/3D display showing real-time glasses-free 2D to 3D conversion of standard DVD media

For release Monday September 19th 2005:

Ocuity Ltd. (Oxford, UK) is demonstrating for the first time in public its high performance 3D DVD player display technology. Using commercially available software DVD content is converted in real-time from standard 2D DVD movie format into stereo 3D video images on its 15” 2D/3D laptop screen. Ocuity’s proprietary Polarisation Activated Microlens technology enables autostereoscopic (i.e. glasses-free) 3D display movies to be switched at will between 2D and class-leading quality 3D images. Paul May, Ocuity’s Chairman, explained that ‘the wide spread adoption of 3D displays has always been constrained by the availability of appropriate 3D content, and this demo shows that high quality 3D video can be experienced using existing standard media content’.

The principle of Ocuity’s Polarisation Activated microlens technology and of other 3D display systems will be described by Graham Woodgate, a co-founder of the company, in an invited paper ‘Key Design Issues for Autostereoscopic 2D/3D displays’ at the conference on Tuesday morning. Graham will also be presented with the prestigious Ben Sturgeon prize for the significant contributions made in the display field through his work at Ocuity. ‘I am very pleased and honoured that the work I have done at Ocuity on switchable 3D displays, together with my co-founder Jonathan Harrold, has been recognised through this award.

In a related development Ocuity can also announce that they have been awarded a significant Grant for Research and Development from the South East Development Agency. The aim of the project is to develop next generation manufacturing techniques for switchable microlenses that will enable scaling of the technology to very large screen sizes.
Such techniques will eventually enable the application of switchable 2D/3D to large flat-panel TV screens.

3D DVD player display technology demonstrator

Ocuity Background

Ocuity specialises in producing enhancements to flat panel displays. Its mission is to be the leading supplier of reconfigurable optical technology to the flat panel display industry. It was founded in January 2001 by Graham Woodgate and Jonathan Harrold, both veterans in the stereo 3D industry, and is based near Oxford, England.

The company’s key invention is the Polarisation Activated Microlens technology formed by an array of liquid crystal lenses together with a polarisation switch. For one polarisation of light the index of refraction of the microlens is matched to that of its surroundings and therefore no lensing takes place; for the orthogonal polarisation there is an index step at the lens interface and lensing takes place. The polarisation switch ensures that either a 2D (no lensing) or 3D image (lensing) is seen.
Ocuity's Polarisation Activated Microlenses have different optical properties depending on which polarisation of light passes through them.

3D mode of Ocuity's reconfigurable 2D/3D display using Polarisation Activated Microlens technology

In 2D/3D displays, for light of one polarisation the microlenses are transparent and a 2D image is seen. If the opposite polarisation is used, then the microlenses focus light to the left and the right eyes from alternate columns of pixels. The brain fuses the two images to give the appearance of depth on the display.
The Ocuity technology can be applied to a range of flat panel display platforms from mobile phones through to desktop monitors. Ocuity’s technology has already successfully been licensed on a non exclusive basis by a major Asian manufacturer.

![2D/3D cell phone display technology demonstrator](image)

The use of a reconfigurable technology makes the technology suitable for mass market applications where most of the time the standard 2D display is needed and the 3D is switched on for particular gaming or picture messaging applications. For example this provides a new dimension to gameplay by making images ‘jump’ off the screen.

Ocuity’s technology is the only reconfigurable, glasses free, 3D technology that maintains the brightness of the underlying display in both 2D and 3D modes as well as providing high quality 3D images. Ocuity’s component can be fitted to an existing LCD or OLED panel. Moreover, it uses standard materials and manufacturing processes in its fabrication and is therefore available at a small premium to the base display panel cost.

Other applications for the reconfigurable lens technology have been identified and demonstrated. For instance a switchable Enhanced Brightness display which allows a brighter image to be displayed over a concentrated field of view. This can be used, for example, in extremely bright ambient light conditions where some LCD displays are difficult to view.

Further information on Ocuity is available at [www.ocuity.co.uk](http://www.ocuity.co.uk).

**Ben Sturgeon Award**

The Ben Sturgeon Prize is awarded by the Society for Information Display (SID UK) and British Liquid Crystal Society (BLCS) to a young scientist or engineer, under the age of 40, who in the last 10 years has made a significant contribution to the displays field.

www.sid.org/uk

Paul May, 16th September 05