

## WINNER OF THE BEN STURGEON AWARD 2007

The Ben Sturgeon Award for 2007 was won by Dr Carl Brown, Reader in Physics at the School of Science and Technology, Nottingham Trent University. He was presented with the award by Dr Richard Harding, Chairman of the UK and Ireland Chapter of SID at a chapter technical meeting at Bletchley Park on 17 October 2007.

Carl read physics at Queen's College, University of Oxford and was awarded an upper second class BA (Hons) in Physics in 1990. He then joined the Department of Physics at the University of Nottingham, where he was awarded a PhD in 1994 with a thesis entitled, 'Quantum Transport Effects in Low Dimensional GaAs Devices'.

His first job was as a Higher Scientific Officer (1993-1996) and then Senior Scientist (1996-1998) at DERA Malvern. During this time, he was a researcher and a technical task manager for two major industrial collaborations: with the Ford Motor company to develop 3d holographic Computer Aided Design systems and with Sharp (S.L.E. Oxford UK and F.D.L. Sharp Corporation, Tokyo, Japan) to develop a ferroelectric liquid-crystal television. His work on smectic C liquid crystals led to a method to quantify the temperature and frequency dependence of the biaxial permittivity tensor. His work on modelling nematic alignment textures on grooved surfaces during this time, led to the co-invention, with Guy Bryan-Brown and Cliff Jones, of the ZBD liquid-crystal display mode which is being commercially exploited by the SME ZBD Displays Ltd ([www.zbdsolutions.com](http://www.zbdsolutions.com), founded July 2000).



*Carl Brown*

In 1999, he joined the Department of Engineering Science, Oxford as a lecturer in optoelectronics where he was engaged in research on optically addressable spatial light modulators (OASLMs). In 2002, he was appointed a Reader in Physics in the School of Science and Technology at Nottingham Trent University. He has built a good group at Nottingham, which has attracted funding for a number of projects. Throughout his career, Carl's work has resulted in an impressive number of publications and patents.

As a Departmental Lecturer in Engineering Science at Oxford University (1999-2002), Carl led research into amorphous silicon and ferroelectric liquid crystal optically addressed displays for an electroholographic display system (funded by DERA), into Surface Stabilised Cholesteric Texture devices and the physical properties of nematic liquid crystals (funded by EPSRC and Merck Ltd.), and on bistable nematic liquid crystal displays (EPSRC grant GR/R17423).

At Nottingham Trent (2003-present) Carl is a Reader in Physics and has led research into materials physics aimed at elucidating nematic bistable switching mechanisms and in particular the role of ionic contamination coupled with flexoelectric polarisation (EPSRC grant GR/S90621). His interest in low-power displays has developed to include novel azimuthal bistable and multistable switching devices (Scottish Enterprise grant PoC 06OPT004 and EPSRC grant EP/F014988/1). He has also widened his interest in the science that underpins new display technologies to include electro-optic devices based on microfluidic motion (ICASE funded by Kodak Ltd. and DTI/COMIT Faraday partnership). In addition to his ten patents, he has also published 45 refereed journal papers mainly during his academic career (1990-1993 and 1999-present). At Nottingham Trent, Carl has organised public outreach events to celebrate Einstein Year when acting as chair of Nottingham branch of The B.A. (2005) and continues, with his colleagues at CELS ([www.ntu.ac.uk/cels/](http://www.ntu.ac.uk/cels/)), to deliver Ballistics and Displays master classes to school visitors with a range of ages.

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