

WINNER OF THE BEN STURGEON AWARD 2013

The Ben Sturgeon Award for 2013 has been won by Dr Jamieson Christmas, Chief Technology Officer of Two Trees Photonics. The award was presented by the Chapter Director, Dr Sally Day at the conference, Eurodisplay 2013 held at Imperial College London on 16th to 19th September, 2013. During the conference, Dr Christmas was invited to present a paper entitled 'Phase only holographic head up displays'.

Jamieson graduated from Anglia Ruskin University in 2001 with a first class honours degree in Electronic/Electrical Engineering after studying for four years part time. In parallel with this, he pursued a career as an Engineer and Project Leader at the UK arm of ALPS Electric Co. Ltd, the global manufacturer of electronic subassemblies for consumer, automotive and communications markets. He rose to become the Engineering Manager and Chief Engineer of ALPS UK.

He began his PhD studies in the Electrical Engineering Division of Cambridge University Engineering Department in 2004, where his chosen field of study was video-projection displays using liquid-crystal phase-only holograms. He played a substantial role in the day to day operations of the Centre for Advanced Photonics and Electronics (CAPE) that was established with industrial support in the Electrical Engineering Department in Cambridge University. He served on the Technical Strategy Committee and represented the interests of one of its major industrial sponsors, ALPS Electric Co. Ltd.

During this period, he led a major CAPE project, entitled Video Holographic Projectors, ViHPs, which developed the first full-colour holographic video projector based on nematic liquid-crystal technology. This was successfully demonstrated at the ALPS Electric International trade show in Tokyo in 2006.

In 2009, Jamieson co-founded the company Two Trees Photonics Ltd., where his roles are Chief Technology Officer and Company Director. The company is developing products based on phase-only dynamic holography using Liquid Crystal over Silicon (LCoS) devices. Display modules designed by Jamieson and built by the company have now established that this technology can greatly reduce the size and power consumption of projection displays.

A major European automotive manufacturer is now working with Jamieson and Two Trees Photonics on a variety of technical solutions for holographic systems in the automotive industry and holographic phase-only display devices are becoming strategic components in the international automobile market. In collaboration, the automotive manufacturer, TTP and Alps have investigated specific application areas using holographic projection systems in which Jamie has had a significant input. His knowledge and experience in the topic of phase-only holography and the understanding of light modulation in the context of the applications investigated has helped turn the technology from initial concepts into feasible design solutions which have demonstrated much promise for use in automotive applications.

The outcome of this work has been the realisation of automotive displays which have an optical efficiency ten times higher than existing automotive displays. This has resulted in a major reduction in the size and power consumption of the displays.



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