



## THE UNIVERSITY of EDINBURGH

# CMOS Sensors & Systems Group

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From the early 1970s research into IC design was carried out in the Electrical Engineering Department at The University of Edinburgh. By the early 1980s the research team, lead by Prof. John Mavor and then Prof. Peter Denyer gained an international reputation for first CCD and then MOS analogue and digital IC design with special application to signal processing.

In 1989 Renshaw, Denyer, Wang and Lu published a paper reporting work started in 1986 on CMOS image sensing that culminated in the design and demonstration of the world's first single chip CMOS video camera.

In 1990, with University and Venture Capital backing, Denyer and Renshaw set up VLSI Vision (VVL) a University Spin out company, to sell the single chip video camera device and develop a family of novel imaging devices based on this technology. This company grew from one employee to over 100 in the five years to 1995, when it became the first spin out company from a Scottish University to become a PLC, placed on the London Stock Exchange. VVL started the market in CMOS image sensors and gained a Queen's Award to Industry.

By 1995 competition started from other new companies based in the US and far east. To address the emerging market and cope with the competition, VVL sought to expand its operation and as a consequence was taken over in 1998 by STMicroelectronics, to form a new Imaging Division of that company, to address the newly emerging mass market in mobile phone cameras.

Throughout the period 1990-1995 strong links were maintained with The University of Edinburgh. Dr Renshaw maintained a part-time Senior Lecturer position to continue giving VLSI circuit courses and supervise postgraduate research student-ships supported by VVL.

From 1995 he resumed his full-time University post, setting up the Vision lab and encouraging research and entrepreneurship in image processing applications untill 2008. In 2008 Denyer, Renshaw, Wang and Lu were recognised for their pioneering research by the award of the prestigious Rank Prize in Optoelectronics.

In 2004 Dr Henderson joined The University from STMicroelectronics to start research in new CMOS imaging technologies. He has taken over, expanded and re-directed the work of the Vision Lab, now called the CMOS Sensors & Systems Group.

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*Valeo v. Magna*

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