

Artificial silicon retina: the role of microelectronics in restoring vision loss

The eye is one of the most complex organs in the human body. Degenerative blindness is caused by deterioration in the chemical process in the retina that turns light into electrical impulses which form images in the brain.

One approach to repair this breakdown is the development of an artificial silicon retina.

The ICT for Life Sciences Forum will have a presentation by Professor Stan Skafidas of NICTA on Artificial silicon retina: the role of microelectronics in restoring vision loss.

Professor Skafidas is Australia's leading designer and developer of high-speed wireless integrated circuits, having led the development of the world's first integrated transceiver on CMOS operating at 60GHz. This breakthrough in wireless technology is being used as the basis for the development of a retinal prosthesis, or bionic eye, to treat forms of degenerative blindness such as Macular Degeneration and Retinitis Pigmentosa.

Professor Skafidas will describe the advanced electronics system required for such a device and the progress his team is making in its design and development. The event will be held on Monday, 6th July, commencing at 5 pm with the serving of canapes and the presentation to commence at 6 pm.

This presentation will discuss the approach taken by researchers at NICTA in Melbourne to build a microchip using advanced microelectronics that will replace the malfunctioning retina. Attempts by overseas researchers to build an artificial retina implant will also be discussed.

Issues that will need to be addressed to have such a device available to those suffering from degenerative blindness will also be discussed.

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