Optics innovation an industry success

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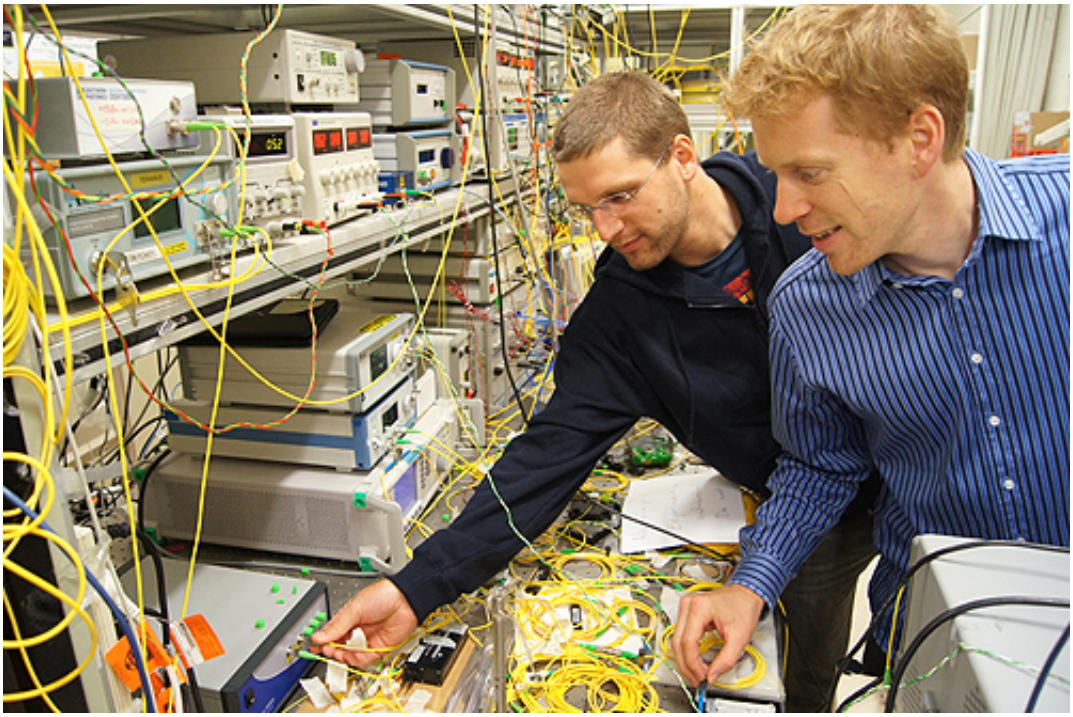

(L-R) Dr Michael Roelens and Dr Jochen Schroeder. "The new technology is particularly useful for researchers and developers of optical communication systems," said Dr Jochen Schroeder.

An optics innovation by a University of Sydney researcher has been a financial and technology transfer success story creating a wave of sales for Finisar, the Australian company that has used the new technology.

Dr Jochen Schroeder is a postdoctoral researcher from the University's School of Physics and CUDOS, the ARC Centre of Excellence for

Ultrahigh Bandwidth Devices for Optical Systems. He has created a new function for Finisar's WaveShaper Programmable Optical Processors that allows light to be split in extremely sophisticated ways.

"The processor is a computer programmable optical filter that can shape light. It can, for example, compress incoming light pulses to become very short, or shape an incoming 'rainbow' of light into an output that is only made up of red and blue light.

The new technology makes the liquid crystal on silicon optical chips within the processor act as multiple optical circuits - a bit like circuit boards in traditional electronics.

"The new technique allows for four optical fibre outputs on each optical chip, creating reconfigurable light outputs. This innovation has extended the use of the WaveShaper product to permit the development of the next generation of telecommunications systems as well as enabling the company to address additional markets in research laboratories."

The new technology has made Dr Schroeder the winner of the Innovation Prize from CUDOS, celebrating Australian innovations in optics and photonics.

"It's great to see the techniques I developed have a real impact in the industry," said Dr Schroeder.

"The new technology is particularly useful for researchers and developers of optical communication systems, as it enables more thorough system testing as well as reduced development time for optical components and systems."

"The technique lets us vary how we split light on the optical chips, so we can reconfigure the splitting for different wavelengths of light,"

explained Dr Schroeder.

Director of CUDOS, Professor Ben Eggleton, who is also in the School of Physics at the University of Sydney, is extremely pleased with the success of Dr Schroeder's innovation, having fostered collaborations between CUDOS and Finisar over the past seven years.

"Jochen's innovation is an example of incredibly insightful optical physics," said Professor Eggleton.

"This sort of successful technology transfer creates wealth in Sydney, which is incredibly important for both researchers and high tech industry here," said Professor Eggleton.

The WaveShaper product was also originally the result of a collaboration between CUDOS and Finisar.

Dr Michaël Roelens, who was previously a postdoctoral researcher in CUDOS at the University of Sydney and is now a staff member at Finisar, based in the inner Sydney suburb of Waterloo, developed the technology for the first WaveShaper around four years ago.

Dr Simon Poole, Director of New Business Ventures at Finisar Australia, said, "We have a very fruitful ongoing collaboration with the University of Sydney, via CUDOS, and successful technology transfers like this highlight the importance of research in Australian universities."

"This ultimately creates jobs in Australia and drives our economy."

Provided by University of Sydney

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