

Innovative approach to lighting set to improve sleep quality

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New Australian research by the Cooperative Research Centre for Alertness, Safety and Productivity (Alertness CRC) reveals blue light may be even more important than previously thought. The work points to

the amount of blue light at night having an extremely powerful effect on our internal clocks that control our sleep and alertness.

The research is supporting the development of a new innovative lighting system that can customise the levels of blue [light](#) content for better sleep health and wellbeing. The product will be unveiled to the Australian market this week.

The Alertness CRC has been working with Australian lighting company Versalux Lighting Systems and Monash University for the past two years, investigating how exposure to blue light affects people's sleep and internal body clocks.

Neuroscientist and [circadian rhythms](#) expert Associate Professor Sean Cain said the research revealed that the amount of blue light in a light source has the most important effects on our internal clocks.

"High dosages of electric light at night can be very confusing for the body clock and lead to disrupted sleep that over time affects people's health and mood," Associate Professor Cain said. "That's partly why many long-term shift workers experience health issues.

"At the same time, we need people to be alert at work, particularly when they are operating in safety critical roles... so that's when exposure to more blue light becomes important."

Alertness CRC Chief Executive Officer Mr Anthony Williams said the partnership with Versalux had been very successful.

"The role of the CRC is to bring researchers and industry together to develop new tools and systems for alertness and sleep management which can be then transferred to industry to commercialise the technology," Mr Williams said. "Versalux, as an already successful

Australian lighting company, is in prime position to do just that."

The lighting research project aims to find new ways to 'reset circadian rhythms' by applying a dynamic solution to lighting that can improve people's sleep quality, [alertness](#) and productivity.

Alertness CRC partner organisation, The Sleep Health Foundation, confirmed the cost of inadequate sleep to the Australian economy in 2016-17 was \$66.3 billion of which \$26.2 billion was from productivity loss, and \$40.1 billion from the adverse impact on wellbeing.

As a direct result of this research, Versalux developed a LED lighting product range called BIOGEN. BIOGEN consists of LEDs which are easily programable to vary blue light content across the one building environment. This dynamic approach regulates both visual and non-visual light to maximise well-being. For example, nursing staff in a hospital need more exposure to [blue light](#) to stay alert while less exposure is optimal for patients preparing for sleep. This new product, unlike standard commercial and industrial lighting systems, facilitates both outcomes.

The Versalux BIOGEN product will be unveiled at an industry roadshow in Sydney and Melbourne on 28 and 29 November 2019 respectively to be attended by lighting designers and engineers, architects, and representatives of government agencies including health, education, aged care and correctional services.

The company hopes the research and product innovation will contribute to new Australian lighting standards and guidelines that shift the industry's focus from the visual to the non-visual human health elements.

Joint Managing Director of Versalux, Mr Bruno Campisi, said it was just as important to consider the 'human factors' of lighting as it was the

visual effects.

"We believe this research will help to create new guidelines and standards for the lighting industry that will become the norm so that more people—be they workers, patients, aged care residents, students or inmates—can achieve better health and well-being from our new BIOGEN lighting system."

Provided by CRC for Alertness, Safety and Productivity

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