Alertness CRC Media Release

28 November 2019

Innovative approach to lighting set to improve sleep quality following new research findings

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.”

**Additional background**

**The Cooperative Research Centre for Alertness, Safety and Productivity (Alertness CRC)**

The CRC for Alertness, Safety and Productivity (Alertness CRC) is an industry-focused research and development consortium funded through the Commonwealth Government’s Cooperative Research Centre Program.

With 32 participant organisations, the Alertness CRC brings together expert knowledge, state-of-the-art technologies and effective translation pathways from industry, government and university sectors in a coordinated output-driven program. Alertness and productivity have the potential to be impacted by sleep loss, sleep disruption and shift work (circadian or body clock disruption) due to widespread effects on core brain functions such as reaction time, decision-making, information processing and the ability to maintain attention.
Addressing the key challenges in alertness management through a comprehensive, integrated and state-of-the-art program, the Alertness CRC is focused on the prevention and control of sleep loss and sleep disorders and the development of novel alertness prediction and sleep health management technologies that provide viable real-world workplace and community solutions.

With world-class academic expertise and a strong focus on early career researchers, the consortium provides a unique structure and support to train future leaders in the field and deliver new tools to the marketplace.

Technology companies, insurance industry, regulatory and policy agencies and safety sensitive employment sectors are all represented as end users. Through the CRC, industry participants are able to bring to market devices, software and other solutions that are developed through this research.

The lighting project is a specific area of research and development activities headed by Dr Andrew Tucker, Program Leader – Safety and Productivity Improvements for the Alertness CRC.

Visit www.alertnesscrc.com for more information.

About Versalux

Versalux is an Australian owned and managed company which started operations in 1979 and is now supplying lighting to a range of industries across Australia and New Zealand, including the health and education sectors, correctional institutions and defence.

The company employs more than 75 people and has offices in New Zealand and four capital cities including its headquarters in Melbourne.

It works with a range of elite international commercial suppliers across Europe, South East Asia and the United States and has received numerous awards for commercial industrial and flood lighting solutions.

Versalux has been working with the Alertness CRC since 2017 and joined as a participant in January 2018.

Through its work with the CRC, Versalux is assisting in the development of new guidelines and standards for Australian lighting design that will focus on the non-visual impacts of lighting that promote worker safety, health and performance. Ultimately, the company sees an opportunity for these new lighting solutions in the domestic market.

Peter Sword is the founder, and Bruno Campisi and John Beagley are Joint Managing Directors of Versalux. Visit www.versalux.com.au for more information.
About Monash University

Monash University is a public research university based in Melbourne, Australia. Founded in 1958, it is the second oldest university in the State of Victoria. The university has a number of campuses, four of which are in Victoria (Clayton, Caulfield, Peninsula, and Parkville), and one in Malaysia. Monash also has a research and teaching centre in Prato, Italy, a graduate research school in Mumbai, India and a graduate school in Suzhou, China. Monash University courses are also delivered at other locations, including South Africa.

Monash is a member of Australia’s Group of Eight, a coalition of Australia’s eight leading research universities, a member of the ASAIHL, and is the only Australian member of the M8 Alliance of Academic Health Centers, Universities and National Academies. Monash is one of two Australian universities to be ranked in the École des Mines de Paris (Mines ParisTech) ranking on the basis of the number of alumni listed among CEOs in the 500 largest worldwide companies.

Associate Professor Sean Cain is a neuroscientist and circadian biologist at The Turner Institute for Brain and Mental Health, part of Monash University’s Faculty of Medicine, Nursing and Health Science. He has more than 20 years’ experience in lighting-related research, and is heading the research for the Alertness CRC’s lighting project.

Visit www.monash.edu for more information.

About the CRC for Alertness, Safety and Productivity

The Alertness CRC is an industry focused research program committed to maximising alertness in the workplace. The mission of the Alertness CRC is to 1) Promote the prevention and control of sleep loss and sleep disorders, and 2) Develop new tools and products for individuals and organisations to improve alertness, productivity and safety. http://www.alertnesscrc.com/

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