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Conveyor belt technologies on the rise

A new high capacity steep angle belt conveying system that has the ability to continuously transport ore and waste up steep inclines directly from the pit has the potential to revolutionise the mining industry.

The Innovative Conveying System has been developed over 10 years and recently commercialised for smaller selected applications.

An Australian Research Council grant of \$700,000 over four years will allow researchers from the University of Newcastle, in association with industry partners Rio Tinto and Innovative Conveying Systems International, to upscale and enhance the technology enabling it to perform arduous and unprecedented material handling tasks in mines.

Lead researcher Dr Craig Wheeler, from the School of Engineering, said the technology would result in major changes to the way bulk materials were transported.

“This innovative technology will reduce dependence on large haul trucks which will help reduce energy consumption, minimise the environmental impact of the mining process, and improve the health and safety of mining personnel and the surrounding community.”

Unlike conventional belt conveying systems, this system has the ability to transport bulk materials up and down steep inclines and turn tight corners. It also has the capacity to be installed in a range of settings, including ground-mounted systems or rock-bolted to the side of underground mines.

Dr Wheeler said while the initial focus had been on developing the conveyor belt system for use in the mining sector, there was great potential for associated industries.

“The mining sector is the most obvious beneficiary from the technology due to the significant gains in efficiency and environmental control, with the added advantage of being a fully automated system.”

The Australian Research Council grant, in addition to more than \$2 million in cash and in-kind contributions from the project partners, is expected to ensure this development is in full operation by 2013.

“These breakthroughs are exciting for an industry that is actively seeking to improve the energy efficiency and safety of operations”, said Dr Brent Jenkins, CEO of Newcastle Innovation.

“Innovative ideas such as this exemplify how combining the skills and experience of university researchers with the consulting and engineering design work conducted by TUNRA Bulk Solids, results in quality solutions for industry problems.”

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