

REAL TIME MEASUREMENT OF CONVEYED BULK MATERIALS FOR ADVANCED PROCESS CONTROL

How does your operating strategy change when competition increases and commodity prices come under pressure?

How do you extract extra value from your process plant without major investment? Can you save millions of dollars per year with an ROI measured in weeks? Our customers do! Measuring conveyed flows continuously, and using minute by minute results to make real time changes can improve many aspects of your plant's operation. Any processing operation using ore or concentrates as a feedstock needs to measure in order to control. Improved process control can provide major benefits such as: processing less waste, stabilising feed grade, producing more consistent quality product, maximising metal recoveries, generating less tailings and improving productivity. Each of these benefits individually can amount to millions of dollars per year in savings, and being able to perform better reconciliations and metal accounting is just a bonus.

Non-contact, multi-element analysis

Process plant performance in the coal, cement and minerals sectors has been significantly improved through the application of real time, full stream, non contact, multi-element analysers. Particle size and belt speed don't affect the analysis. Grade control need not stop at the haul truck. Analysers on conveyors at the mine (after the crusher) are used to divert increments of undesirable material, be it waste, low grade ore, or high deleterious content so it does not enter the process plant. Think of the savings in grinding costs, power and reagents. Benefits really add up when that waste is replaced by good ore and the plant output increases for the same throughput. Ore of product quality, such as in iron ore plants, is diverted to bypass the beneficiation plant. One customer consistently achieves over *US\$6million per year* in beneficiation cost savings alone by doing this but also maximises plant capacity by only processing what needs to be upgraded.

Analysers help plants blend ores to ensure consistent ore feed. Reducing ore quality variability can increase metal recoveries by up to 15% (fifteen percent) in copper operations. Another customer blends copper ores to maximise leach circuit capacity and achieved a *payback of less than 2 months*. They now use elements that weren't initially of interest (Fe and S)



to control the mineralogy blend as well as copper content to further benefit their process.

Optimising processing operations

Analysers can be used on conveyors throughout the plant. Beneficiation circuit feed and product streams, such as on jigs, ensure optimal recovery. Analysers help optimise pre smelting additive control in cement plants and adjust metal concentrate chemistry pre-smelting or sinter basicity. Measurement of product flows to stockpiles and load out flows to the train or ship are used to determine real time stock levels (tonnes and grade) and indicate shipment quality compliance with product specification requirements. Where necessary, products can be blended or bulk sorted to improve shipment quality for each customer.

The combination of accurate, continuous microwave moisture measurements with elemental data allows dry weight percent of each element to be reported in real time. Real time analysis allows mines to optimise processing operations. Detailed studies continue to be undertaken to help processing operations identify further improvement opportunities, such as ore hardness through silica measurement to control grinding circuit feed rate and ore blend.

Scantech's core business is the development, supply and support of on-belt analysers for the resources sector, world-wide. Scantech first supplied this technology to the

Scantech is a world leader in on-belt analysers for conveyed bulk materials, particularly in the minerals sector. The technologies have been refined through generations of proven operational applications in commodities ranging from manganese and copper to zinc-lead, phosphate rock and iron ore. Contact Scantech to see how your plant will benefit from our experience with on-conveyor real time analysis technology solutions.

coal sector in the early 1980s and has now developed analysers for the cement, minerals, power and steel sectors. More than 1,000 analysers designed and built in Australia have been sold in 55 countries. Customer service and product support is enhanced through remote access capabilities for all current models and experienced staff located in major regional locations. As a specialised supplier Scantech is able to customise analyser solutions, including application specific calibrations and support programs including site training and radiation services.

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