



# INTALYSIS CAPABILITIES

reliable **online analysis** for resources applications

## Innovative technology for online analysis

Intalysis Pty Ltd was born from a commitment to help industrial operators benefit from today's most advanced technology for online analysis in resource based processing plants.

Launched in October 2005, the company is 100% owned by Australia's CSIRO (Commonwealth Scientific and Industrial Research Organisation). Our technology is backed by over 20 years experience in developing solutions for online analysis and control in mineral and other process applications. Customers include BHP Billiton, Rio Tinto and Vale.

## Integrated solutions for moisture analysis

While "plug and play" instruments can work for very simple applications, most scenarios have enough variables, such as mineralogy, material profile and different process requirements, to require an expert approach.

At Intalysis we work with you to understand your process needs and develop effective online analysis solutions. Assisted by our trade partners, we can organise and support integrated online analysis solutions for moisture content, dry tonnage and bulk density – all in real time.

## The Intalysis LFM<sup>3</sup> Moisture Analyser

The Intalysis LFM<sup>3</sup> Moisture Analyser is the third generation of microwave moisture analyser developed by the CSIRO for on-line applications. The analyser can be integrated and installed on conveyors, chutes, feeders and dewatering filters. The LFM<sup>3</sup>

Moisture Analyser handles materials ranging from conventional to the highly attenuating. Applications include iron ore, selected mineral concentrates, coal, sinter and pellet feed, bauxite, alumina, fertilizers, laterites and others.

Four different antenna systems can be used to customise the LFM<sup>3</sup> Moisture Analyser for different material types and bed depths. The antenna systems are connected to state-of-the-art TPX digital circuitry, which improves the performance at high attenuation levels and simplifies spare parts holdings. The entire system is controlled by the Moistmeas software, which can be configured with different plant and external communication systems. The QNX operating system using micro-kernel architecture allows multiple applications to run with high reliability.

## Applications

- Dust control
- Rheology control
- Dewatering
- Metallurgical accounting
- Calcining and drying
- Pelletising and sintering

## Intalysis services

We offer a range of back-up services for installed LFM Moisture Analysers including commissioning, sampling, calibration service and total asset maintenance. Systems can be configured so that specialist back-up can be carried out remotely through the cellular telephone network, landline or internet.



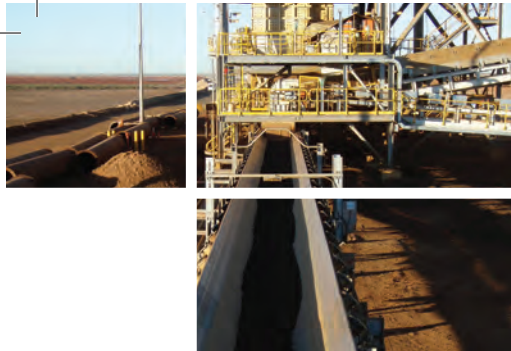
Intalysis LFMs were installed as part of an overall environmental strategy. They provide us with real-time measurements of coal moisture levels which we can use to control and optimise our water addition

**Doug Mitchell** Electrical Supervisor, Dalrymple Bay Coal Terminal



**LFM iron ore application**

**INTALYSIS**  
TECHNOLOGY FOR ONLINE ANALYSIS



## INTALYSIS Capabilities

### How the technology works

Microwave moisture analysers work on the principle that water has a very high dielectric constant compared to most other materials. When microwaves intersect with water molecules within the material they slow down (and hence change phase) and weaken (attenuate) as the energy is transferred to the material.

The LFM Moisture Analyser is based on this principle and measures the change in phase and attenuation of a microwave passing through a material to determine its moisture content.

Since phase shift and attenuation also depend on the amount of material present, a measurement of the mass loading on the belt is required to compensate or "normalise" the microwave measurements. This is generally provided by a beltweigher. Where a belt scale is not available, Intalysis can provide alternative solutions using scanning lasers and radar or ultrasound bed height instruments.

### The LFM Moisture Analyser advantage

- TPX digital signal processing capability enables very precise frequency emission and measurement
- Very low power transmission of less than 20 nano-watts ensures EMC compliance in all countries
- Through material analysis – which is inherently more accurate than surface measurement (NIR) and local measurement (microwave resonance)
- Remote monitoring and control available via dial up interface
- Effective in highly attenuating or high precision applications
- Rugged, light-weight construction
- Continuous moisture measurement



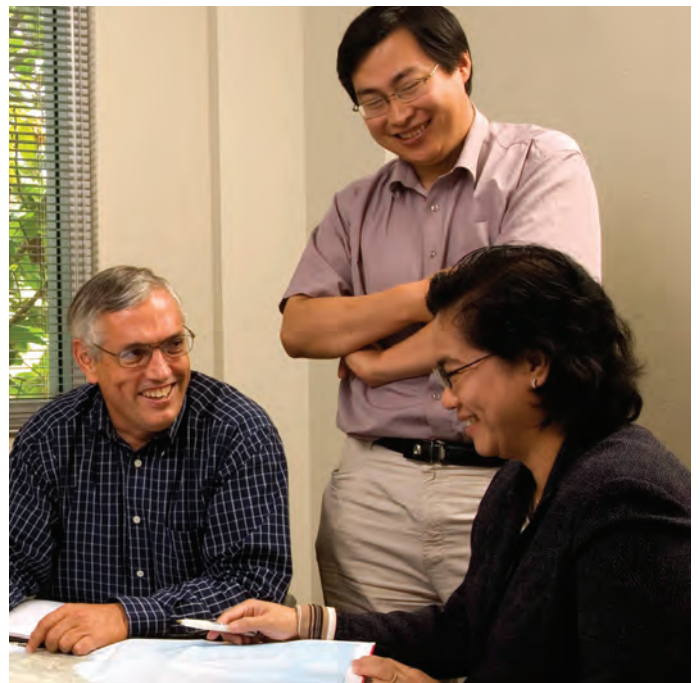
Intalysis' LFM gives us accurate, on-line measurements that enable us to successfully implement our moisture control strategy.

**John Groves** Senior Process Engineer, BHP Billiton Iron Ore



### Awards

In 2008 Intalysis received the Frost & Sullivan Asia Pacific Technology Innovation of the Year Award in the field of Moisture Analysers for Bulk Materials. The award is in recognition of our LFM Moisture Analyser technology that has helped in reducing the dust at Australian ports and therefore increased the throughput of bulk materials such as coal and iron ore.



The **team at Intalysis** enjoys working in an innovative, high performing technology based environment underpinned by a culture of open and honest communications, safety, teamwork, multiculturalism and initiative.