27 June 2023

New Product Launch

XRF Scientific Ltd ("XRF" or "The Company") is pleased to announce the launch of a new product, xrTGA, following an extensive product development process. xrTGA is a thermogravimetric analyser (TGA), which is a laboratory instrument used for heating samples to different temperature points and observing a change in weight.

Image: xrTGA Thermogravimetric Analyser

The instrument primarily consists of a furnace for heating samples and a precision balance for recording weights. The xrTGA builds upon our extensive experience in laboratory furnaces (xrFuse range) and precision weighing equipment (xrWeigh range).

xrTGA can be used for a number of analytical techniques including moisture analysis, volatiles determination, ash content determination and loss on ignition analysis. TGA's provide data that is complementary to the XRF analysis process in determining elemental concentrations, such as in iron ore mining.

TGA's have applications in our existing markets such as mining of iron ore, bauxite and nickel and in the production of construction materials such as cement. In addition it provides access to new industries where they are used in production quality control, such as food, plastics, and agricultural products.

xrTGA is available for first delivery in the December 2023 quarter and is manufactured in Melbourne. Attached is a presentation that further outlines this new product and its applications.

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About XRF Scientific:
XRF Scientific Limited is an Australian listed company (ASX: XRF) based in Perth, Western Australia. XRF manufactures equipment and chemicals, which are distributed to production mines, construction material companies and commercial analytical laboratories, in Australia and overseas, and used in the preparation of samples for analysis.

XRF has manufacturing, sales and support facilities located in Perth, Melbourne, Europe and Canada, plus a global network of distributors. The Company has representation in the United States, South America, Africa, the Middle East and Asia and has a customer base that includes multinational blue-chip customers such as:- BHP Billiton, Rio Tinto, Vale, South 32, Glencore, Alcoa, Lafarge, Holcim, ArcelorMittal, CSIRO, Intertek, Bureau Veritas, SGS and ALS.

XRF's technology is used to measure the composition and purity of materials and is mainly applied in industrial quality control and in process control for manufacturing processes in industries such as metals and mining, construction materials, chemicals and petrochemicals.

XRF's products help customers to improve product quality and performance, increase productivity and yield and reduce downtime and waste. Its businesses have established positions in their specialised markets.

Read more about XRF Scientific at: https://www.xrfscientific.com/general-overview/

New Product Launch
TGA Instrument

Introducing our new laboratory instrument **xrTGA**

Introduction

- Thermogravimetric analyser (TGA):
  - A laboratory instrument for heating samples to different temperature points and observing the change in weight
  - The instrument primarily consists of a furnace for heating samples and a precision balance for recording weights
  - The ‘macro’ TGA is for larger samples and the analysis process is automated
- The TGA builds upon our experience in lab furnaces of 25+ years (xrFuse range) and precision weighing equipment of 7 years (xrWeigh range)
- The instrument covers various analytical techniques performed at a range of temperature points:
  - Moisture analysis
  - Volatiles determination
  - Ash content determination
  - Loss on Ignition analysis

Introduction

Competitive Advantages:

- Large sample carousel with 30 positions for greater throughput
- Higher maximum temperature range up to 1100°C
- Highly automated and user-friendly interface
- Fast heating and cooling cycle times
- Fully integrated PC without the need for an external unit

Industries

Example target industries for TGA instruments:

Mining

- Iron ore
- Bauxite
- Coal
- Nickel laterite
- Commercial Labs

Construction Materials Production

- Cement
- Limestone / Lime
- Industrial minerals

Food Production

- Milled products / flour
- Pasta, biscuits, cereals
- Chocolate
- Animal feed

Other Materials

- Plastics
- Agricultural products
- Soil, plant tissue / Biomass
- Pharmaceutical materials
- Ceramics
- Alumina

Iron Ore Analysis by TGA

Moisture Analysis:

- In iron ore mining water is used to control product quality and dust
- Excess water content can affect the price paid for iron ore by the purchaser and can also be a safety issue during shipping
- Moisture analysis by TGA allows for accurate determination of water content and provides assurance for iron ore for pricing purposes

Loss on Ignition Analysis:

- Loss on Ignition analysis by TGA allows for production determinations to be made at the blast furnace for steel production
- In XRF analysis, Loss on Ignition analysis by TGA is also complementary to the determination of elemental or oxide concentrations

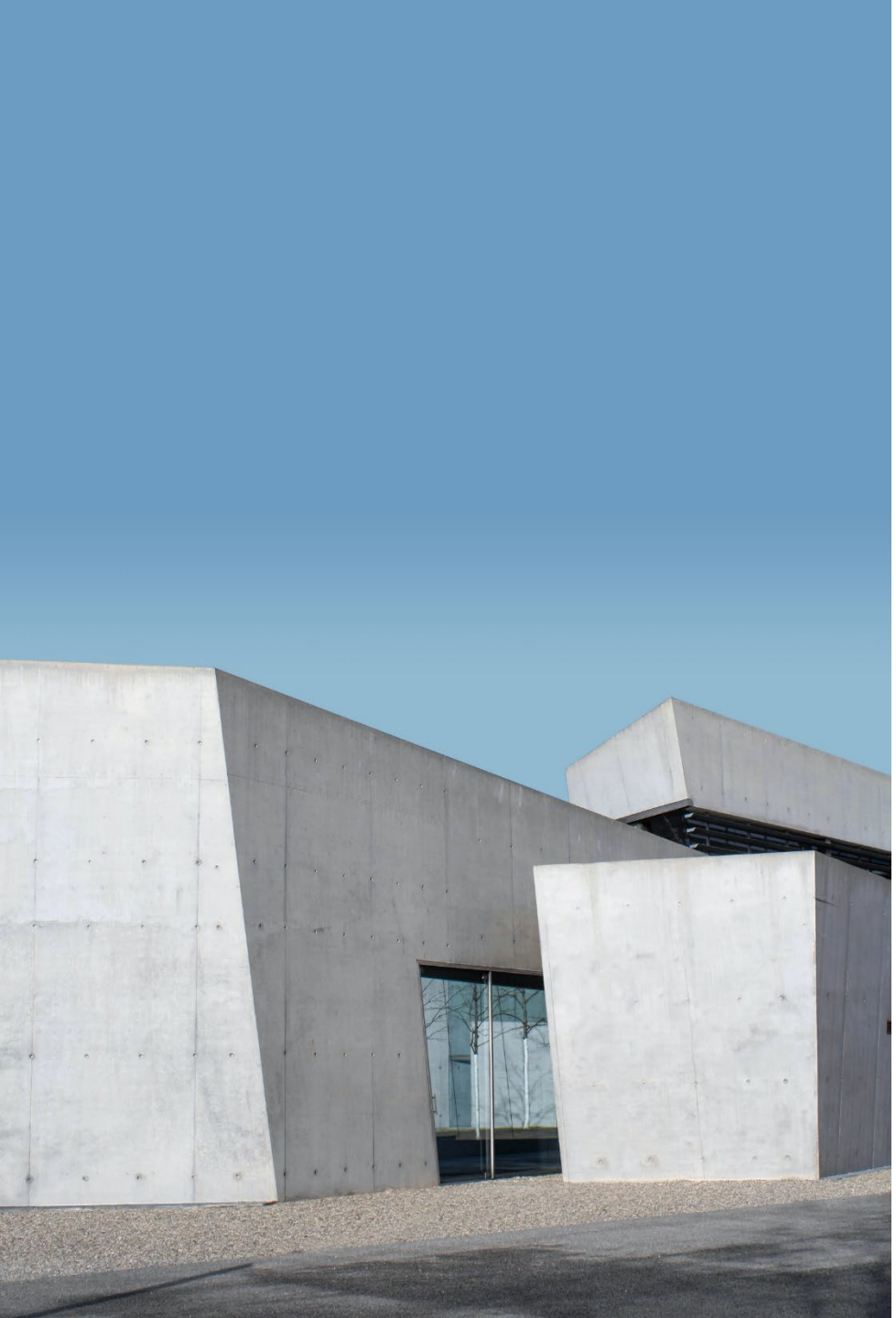
Flour Analysis by TGA

Moisture Analysis

- Moisture analysis of flour by TGA will confirm water levels are within an acceptable limit to ensure product quality and shelf-life stability

Ash Analysis

- During flour milling, the endosperm (used to produce white flour) is separated from other contents (bran and germ) of a wheat kernel
- Non endosperm contents are important to remove as they can reduce baking quality
- An Ash analysis by TGA can be used to confirm that the non-endosperm contents are being separated out by the flour miller. This is possible as these contents are much higher in mineral content than the endosperm. Organic content burns off during the Ash analysis of flour, leaving only mineral content. The starting and final weights can therefore be compared to determine the percentage of mineral content in the flour



Cement Analysis by TGA

Loss on Ignition Analysis

- TGA analysis allows cement producers to monitor and improve upon the quality of their products
- Loss on Ignition analysis by TGA is used to determine the loss by weight of cement samples at ~1000°C. A high loss can indicate pre-hydration or carbonation in cement
- Carbonation in cement is an issue for the construction industry as it can cause steel reinforcements to corrode
- In XRF analysis, Loss on Ignition analysis by TGA is complementary to the determination of elemental or oxide concentrations (ASTM C114 Standard Test Methods)

Our Sales Focus

- Direct engagement with existing mining and industrial customers
- External distribution network and partners
- Development of reference site customers
- Reach into new markets
- Marketing through electronic and physical channels
- Technical presentations at industry conferences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