

# Excellence in Mineral Processing:

## Skills, Strategies & Success Factors

#DoingTheKnowing

### Workshop Overview

Mineral processing is the section of the value chain where maximum value is created - or unintentionally lost. This workshop explains the fundamentals in a clear, business-focused way, giving participants the insight to make better decisions and recognise what good performance looks like.

Non-metallurgical professionals will sharpen their decision-making insight and learn the right questions to ask, while emerging professionals will identify where to focus, build their expertise, and maximise their impact.

### Who should attend?

- Early-career metallurgists
- Mining leaders and managers from outside the discipline
- Engineers and professionals from geology, mining, projects, environment or maintenance
- EPCM, OEM and service-provider professionals
- Legal, financial and consulting professionals
- Students and new entrants to the sector.

### What you'll learn

- What drives value in metal production
- Key unit operations: comminution, flotation and separation, leaching, smelting, refining
- How ore characteristics affect processing
- How to recognise good practice
- The tools and technologies driving performance

### Unique Features of This Course

- **Clear, accessible explanations** of the entire processing chain
- Delivered by **experienced educators with deep operational insight**
- Reinforced through **recognisable examples and case-based discussion**

### Program Outline

#### Day 1 - Mineral Processing Essentials (Full Day)

##### Understanding value in mineral processing

- Why metallurgical expertise matters
- Value creation
- Mineral processing flowsheets

##### Ore, rock and mineralogical drivers

- Ore characteristics for metallurgy
- Mineralogy, liberation and recovery

##### Key unit operations

- Crushing, grinding and classification
- Gravity, flotation and other separation methods
- Concentrate production, materials handling and tailings

##### Good practice & scientific grounding

- Sampling, test work and measurement
- Interpreting data, constraints and process variability
- What "good practice" looks like and how to recognise it

##### Strategic perspective

- Operational risks, opportunity levers and performance drivers
- Tools and technologies for peak process performance today

#### Day 2 – Extraction, Refining & Markets (Half Day)

- From concentrate to metal: the final steps in the value chain
- Hydrometallurgical processes: leaching, CIP/CIL, SX-EW
- Pyrometallurgical processes: roasting, smelting, converting
- How metal markets work and why processing performance matters
- Key drivers and global trends shaping the future of metallurgy

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### Presenters



#### Professor Jan Cilliers FEng

Internationally recognised mineral processing researcher and educator with over 30 years' experience. He is Professor of Mineral Processing at

Imperial College, London. Jan has authored more than 100 papers and made influential contributions to flotation modelling, PEPT particle tracking and waterless mineral processing. He is a Fellow of the Royal Academy of Engineering, a Chartered Engineer, and a member of the International Mineral Processing Council.



#### Dr Elaine Wightman

Minerals characterisation specialist with over 25 years' experience bridging research and industry application. Elaine has led research

programs in image analysis, mineralogy, and advanced characterisation programs the Julius Kruttschnitt Mineral Research Centre (JKMRC) and the Sustainable Minerals Institute. Elaine is widely recognised for her work on integrated geometallurgy and automated measurement techniques.



#### Diana Drinkwater

Metallurgical engineer with extensive experience across operations, research, consulting and design. Diana is a long-standing leader in mining education and professional

development. She has designed and delivered practical, interactive training for professionals across Australia, Africa, the Americas, and Europe. A significant contributor to national and international professional bodies, she brings both technical depth and a strong commitment to collaborative learning.



#### Dr Chris Fountain

Pyrometallurgical specialist with more than 40 years' experience. Chris was part of the team that developed the Copper Isasmelt process and has commissioned

several Isasmelt operations worldwide. In addition to his hands-on work in research and development, Chris has held senior roles including Technical Manager, Engineering Study Manager and Research Director. Most recently, he served as Chief Advisor, Smelting & Refining for Rio Tinto's copper group.

**1½ Day MetPlant 2026 Pre-Conference Workshop**

**20–21 March 2026 in Adelaide, Australia**

**Registration fee \$1,250 (excludes GST)**

**Bring a laptop. Course notes, refreshments & lunch provided.**

**(Workshop is worth 10 PD Hours)**

### About Metcelerate

Metcelerate is a specialist training company founded in 2019 and dedicated to accelerating the professional development of early-career mineral processing engineers.

For this workshop, we're bringing in select members of our expert course leader team — professionals with deep industry knowledge and a passion for practical, results-driven training.