Flotation Plant Optimisation – Understanding the Chemistry

16.&.17.July 2015
Flotation Plant Optimisation-Understanding the Chemistry

Thursday 16 & Friday 17 July 2015
Advanced Engineering Building, University of Queensland
9am-5pm

Froth flotation has been widely applied in many disciplines to separate particles based on the difference in their surface properties. It provides an economical method for the recovery of valuable materials and plays an important role in the extraction of mineral resources.

In froth flotation, chemical processes including mineral oxidation and activation, oxidation and passivation of grinding media, collector oxidation and adsorption, mineral depression and dispersion as well as frothing and bubble size reduction all are of vital importance in particular when low quality ores are treated and low quality and saline water is used. Unfortunately, these aspects are often ignored and are poorly understood in higher education and industry practice. In fact, simple tools can be used to identify chemistry problems during grinding and flotation. Correcting the chemistry can be easy without major capital investment but may significantly improve the industry practice.

This is the 2nd training workshop following the success and suggestions from the 1st one provided at 12th AusIMM Mill Operators’ Conference 2014.

LEARNING OBJECTIVES:

- Upon completion of this training workshop, you should be able to
- Understand flotation chemistry and tools used to characterise plant chemistry;
- Improve plant performance by optimising grinding and flotation chemistry;
- Improve plant performance by optimising frother chemistry;
- Improve plant performance by modifying particle interactions;
- Optimise flotation performance through chemical and physical considerations;
- Diagnose problems in flotation plants.

In the second day of the workshop, case studies from attendees will be diagnosed by workshop presenters. Attendees are encouraged to prepare the case studies before the workshop.

WHO SHOULD ATTEND?

Metallurgists, geologists, mining engineers and geometallurgists working in the mining industry. Other staff from exploration, engineering, consulting companies, reagent and equipment supplies and research organisations working with the mining industry.
COST:

- Early Bird Registration Fee (inc. GST) $1685 Valid for registrations received by 22 June 2015
- Full registration Fee (inc. GST) $1835
- AusIMM Members are entitled to receive a $200 discount per registration (membership details must be provided).

CONTACT DETAILS:

If you are interested in attending this course and would like to register, please contact:

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PRESENTER PROFILES

Dr Yongjun Peng - Senior Lecturer, University of Queensland (Course director and QLD Host)

Dr. Yongjun Peng, Associate Professor, University of Queensland. Yongjun has a joint appointment between JKMRC and the School of Chemical Engineering. His current research focuses on chemistry of precious minerals, problematic gangue minerals and low quality and saline water in flotation. Prior to his time with the University of Queensland, Yongjun was a Senior Metallurgist at BHP Billiton in Australia working on processing gold, nickel and uranium commodities, and a Metallurgist at COREM in Canada developing projects for 12 member mining companies. His PhD research was part of the AMIRA project P260C addressing fine particle flotation in Ian Wark Research Institute, University of South Australia.

Dr Christopher Greet - Manager Metallurgy – Mineral Processing Research Magotteaux Australia (Pty) Ltd

Dr. Christopher Greet, Manager Metallurgy – Mineral Processing Research, Magotteaux Australia (Pty) Ltd. Chris graduated from the South Australian Institute of Technology with a Metallurgical Engineering degree in 1990, and was awarded his PhD from the Ian Wark Research Institute of the University of South Australia in 2002. Chris has work within the mining industry in a variety of roles from shift foreman at the Teutonic Bore copper/zinc operation to Principal Technologist with Pasminco. He is currently employed by Magotteaux as Manager Minerals Processing Research, and leads their technical efforts investigating the effect of grinding chemistry on downstream processes.
Dr Jeff Aston – Market Manager - Mining Chemicals, Huntsman

Dr Jeff Aston, Market Manager – Mining Chemicals, Huntsman. Jeff gained a PhD in Colloid and Surface Chemistry from the University of Melbourne in 1988. He has held positions in Industrial Research and Marketing with ICI Australia and has been with Huntsman since 1998. His research focus has been the application and development of surfactants and polymers for Industrial and Mineral processing. Jeff has managed the Global Mining Chemicals business for the Huntsman since 2005 and has gained experience across the Australian, American (North and South) and African mining markets. His interest is in understanding the relationship between the properties of the chemical reagents, the mineral and gangue surfaces and the characteristics of the processing equipment circuit to which they are applied, in order to facilitate the selection of the optimum reagents.

Mr Robert Dunne – Industry Expert

Robert was the Fellow Metallurgy at Newmont Mining Corporation before he retired at the end of 2013, prior to this he held the position of Group Executive-Metallurgy Development and Technology. Over the last 30 years Robert has worked for a number of mining companies including Anglo American, Anglovaal and Newcrest Mining and also spent time at the Western Australian School of Mines lecturing and at Mintek where he was involved in introducing new technologies into the mining industry. He has published widely in the field of flotation and also contributed to a number of books on flotation.