

# Large Mechanical Flotation Cells – Advantages and Scale-Up Considerations

*M. Walshe<sup>1</sup>, T. Mattsson<sup>2</sup>, P. Bourke<sup>3</sup>, and R. Grau<sup>4</sup>*

1. Outotec Australia, Head of Minerals Processing, 40 Kings Park Road, 6005 West Perth, Australia, [michael.walshe@outotec.com](mailto:michael.walshe@outotec.com).
2. Outotec Canada., Technology Manager, Flotation BL, 1551 Corporate Dr. Burlington Ontario, Canada, [toni.mattsson@outotec.com](mailto:toni.mattsson@outotec.com).
3. Outotec Australia, Group Metallurgist – Flotation, 40 Kings Park Road, 6005 West Perth, Australia, [peter.bourke@outotec.com](mailto:peter.bourke@outotec.com).
4. Outotec Finland, Technology Director, Minerals Processing, Kuparitie 10 28101 Pori, Finland, [rodrigo.grau@outotec.com](mailto:rodrigo.grau@outotec.com).

## ABSTRACT

The operational proof-of-concept for the flotation cell class of 500 m<sup>3</sup> and larger is discussed in this paper. Two different sites are used as case studies and metallurgical and hydrodynamic performance is evaluated as the means of comparison. Frother selection criteria are also discussed and a redesign on standard practices for scaling up to full-scale from lab and pilot-scale is proposed. Additionally, the potential for capital and operational cost savings from the use of large cells is examined, by comparing these to more traditional and conservative smaller cell selections. This cost comparison covers economies-of-scale benefits and the potential for more efficient plant layouts.