

# Hydrodynamic Modelling of Hydrometallurgical Unit Operations

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## ABSTRACT

CSIRO Minerals, in association with the AJ Parker CRC for Hydrometallurgy, has an active program of hydrometallurgical research in which physical and computational modelling are used to better understand and improve a range of different unit operations. The modelling is based on flow simulation (Computational Fluid Dynamics or CFD), but incorporates other physical and chemical phenomena of importance, such as droplet break-up and coalescence, species transport and reaction. This paper reviews some of the major projects that have been undertaken at CSIRO Minerals and will illustrate the critical importance of hydrodynamics to the performance of unit operations and the improvements that can be made to performance using such modelling techniques. Unit operations that are discussed include solvent-extraction, gravity thickeners, flotation cells, bio-heap leaching and stirred tanks.