New Reagents for Beneficiation of Lithium Ores

Tim Walsh[1], Michael McMaster[2], Pablo Dopico[3], Ian Tolliday[4]

1. Development Chemist, Clariant Australia, 100 Heales Road, Lara, Vic. *tim.walsh@clariant.com*
2. Metallurgist, Clariant Australia, 100 Heales Road, Lara, Vic. *michael.mcmaster@clariant.com*
3. Industrial Minerals Manager, Clariant USA, The Woodlands Texas, *pablo.dopico@clariant.com*
4. Applications & Development Manager, Clariant Australia, Lara, Vic. *ian.tolliday@clariant.com*

ABSTRACT

Lithium has been in important element in the world economy for decades, with applications as diverse as glass and ceramics, lubricating greases and as a valuable reagent for complex chemical synthesis in the form of the useful alkyl lithium reagents. Lithium has also been used in disposable batteries for decades, but the development of the rechargeable lithium-ion batteries, coupled with the global trend towards electrification of the transportation fleet, has led to a dramatic increase in the demand for lithium. In addition to the production of lithium from brines, the production of lithium from hard rock ores is increasing, and flotation has proved to be an effective means for the beneficiation of many pegmatitic lithium ores. Clariant Mining Solutions has developed a range of novel collectors for the flotation of spodumene and other lithium ores, and this paper will present examples of some of Clariant's most recent developments.