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## Performance and applications of lithium titanite oxide cells

Inus Grobler

Council of Scientific and Industrial Research, Stellenbosch, South Africa

[igrobler@csir.co.za](mailto:igrobler@csir.co.za)

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### Abstract

Lithium Titanite Oxide (LTO) cells with the typical anode chemical compound  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ , are currently used in heavy transport vehicles (e.g., electric busses) and MW-size Battery Energy Storage Systems (BESS), due to their excellent performance, inherent safety, and expected long-life. One drawback of LTO batteries is low nominal voltage, which is about 30% lower than other lithium-ion batteries, providing for a low weight-energy density. However, the intrinsic stability of LTO allows for operation in extreme temperatures (from  $-50\text{ }^\circ\text{C}$  to  $+65\text{ }^\circ\text{C}$ ) without compromising the life span, which most other lithium cells cannot achieve. Independent test data on these cells are still scarce. This report will detail laboratory test results for a range of acquired LTO cells with the aim of eventually applying these in telecommunication backup power systems and solar storage plants in hot climates. This should alleviate the need for airconditioned rooms which is required with LFP cells.