# BroadBit Batteries Sets New Benchmark for LMFP: Record 2000 Cycles at 85% Capacity Retention, Unlocking 20% Cheaper EV Batteries

## Achieves 85% capacity retention after 2000 cycles at 100% DoD in 18650 type LMFP prototype cells

**Helsinki, Finland – June 22, 2026:** BroadBit Batteries Oy, a leader in advanced battery electrolytes and next-generation lithium-ion and Sodium-Salt battery and supercapacitor chemistries, is proud to announce a significant breakthrough in LMFP (Lithium Manganese Iron Phosphate) battery technology. Our prototype 18650 cylindrical cells, utilizing LMFP cathodes and graphite anodes combined with our proprietary ProLion™ 3M electrolyte, have successfully completed a world record of 2000 full charge-discharge cycles while retaining 85% of their initial capacity (85% SOH). In each cycle, 100% of the battery capacity was charged and discharged. This is the highest ever reported LMFP cycle life to 85% capacity and enables the widescale use of LMFP as an alternative to more expensive NMC and lower energy density LFP.

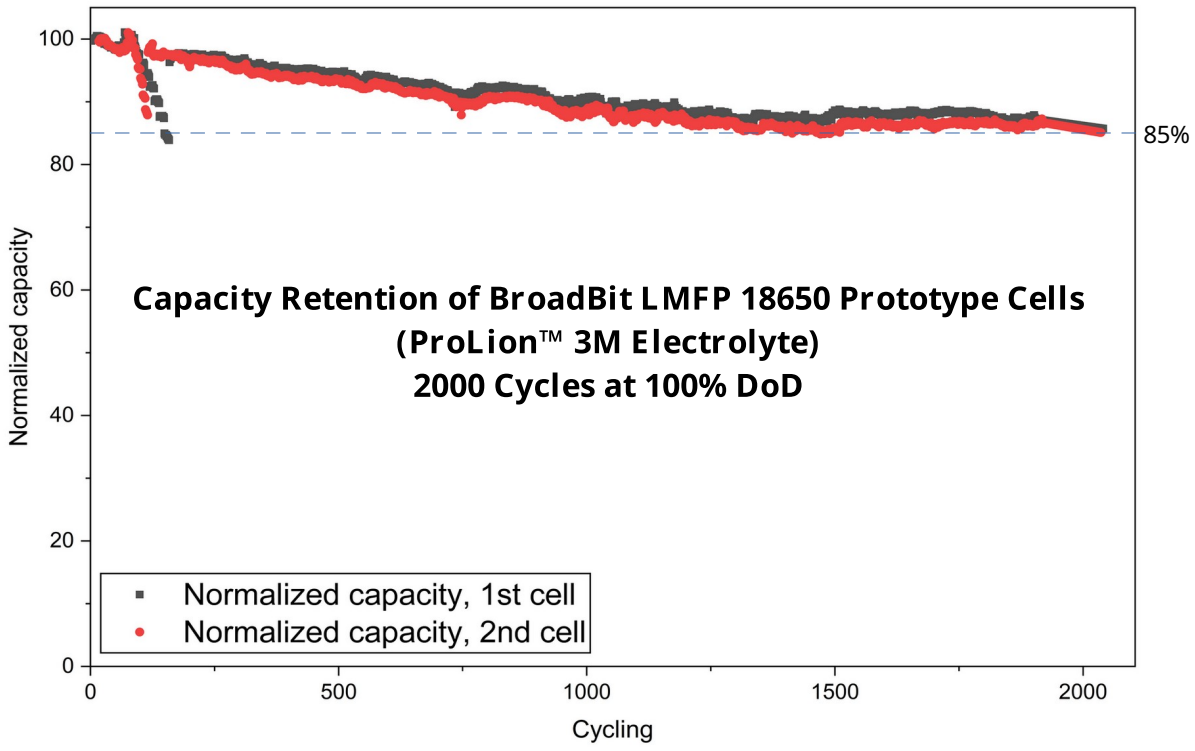
Currently, LFP battery chemistry is the most popular choice for electric vehicles (EVs) because it is currently the cheapest to produce, has long cycle life, and it does not require rare and expensive cobalt or nickel. LMFP is an up-and-coming LFP replacement battery chemistry. LMFP electrodes are produced via a method analogous to LFP. Therefore, LMFP and LFP costs are the same for a given battery mass. However, since LMFP batteries give 20% higher voltage than LFP batteries, 20% less battery mass is needed for a given capacity, making EV batteries 20% cheaper and 20% lighter while maintaining LFP's excellent thermal safety and rare metal free composition. However, until now, LMFP cycle life has been too short for most commercial applications, preventing its mass-market adoption.

By resolving this cycle life bottleneck, our ProLion™ 3M electrolyte finally enables the LFP-to-LMFP transition.

Testing of ProLion™ 3M LMFP performance was carried out at room temperature, under demanding real-world conditions:

- Charge: C/2 rate constant current up to 4.25 V
- Discharge: 1C rate constant current down to 2.75 V

The cell capacity evolution as a function of cycle number data can be seen in the following chart, normalized with respect to the initial cycle capacity. Note that the LMFP cells' power capability was also tested during cycles 100-150: the charge and discharge rates are gradually increased during these cycles, and then restored to the above-indicated rate values.




This outstanding result highlights the exceptional cycle life, rate capability, and stability that ProLion™ 3M unlocks for LMFP chemistry. Thus, BroadBit's electrolyte innovation overcomes the last remaining barrier to widespread LMFP use: low cyle life with respect to LFP, making it highly attractive for more environmentally friendly

and cost effective electric vehicles, stationary energy storage, and high-power industrial applications.

**Why This Matters**

- Demonstrates that ProLion™ 3M effectively overcomes key limitations of LMFP, enabling reliable operation at higher voltages (compatible with standard 4.2–4.25 V charging infrastructure) while delivering superior longevity and power performance.
- Reinforces BroadBit's position at the forefront of cobalt- and nickel-free battery innovation.
- Provides a strong foundation for commercial cell development targeting long-life, safe, and sustainable energy solutions.

"*We are thrilled with these results,*" said CEO, Dr. David P. Brown. "*ProLion™ 3M continues to set new benchmarks for LMFP performance. Achieving 2000 cycles at 85% SOH in cylindrical 18650 cells under aggressive 1C discharge conditions validates our electrolyte platform and paves the way for next-generation battery packs that deliver unmatched durability and value.*"

Testing is ongoing with additional cells for statistical validation, including evaluations at elevated temperatures and varied operating conditions. Detailed performance data, including capacity retention curves, will be shared with partners and stakeholders upon request. This milestone underscores BroadBit Batteries' commitment to developing high-performance, sustainable battery technologies that accelerate the global energy transition.

**About BroadBit Batteries Oy.**

Broadbit Batteries Oy is a Finnish battery innovator specializing in advanced electrolytes (ProLion™ series) and next-generation lithium and sodium battery and supercapacitor chemistries, including LMFP and Sodium-Salt systems. We focus on delivering safer, more environmentally friendly, longer lasting, and more affordable energy storage solutions for the automotive, renewable energy, and industrial sectors.

For more information, partnership inquiries, or licensing opportunities, visit https://broadbit.com or contact info@broadbit.com.