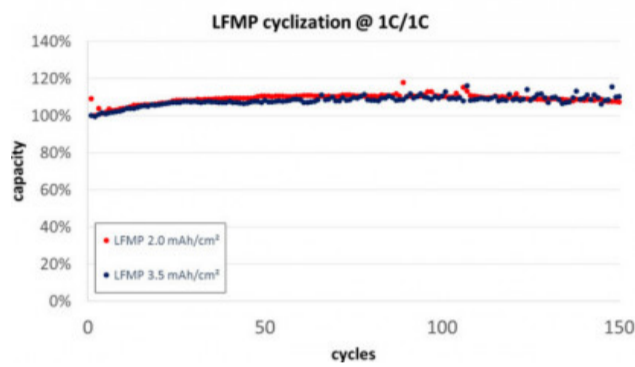




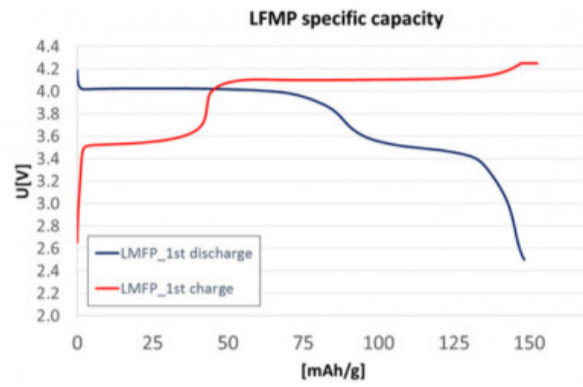
Customcells presents the newest cobalt free cathode active material

LFMP (lithium-iron-manganese-phosphate) provides a combination of high specific capacity, high power capability and safety. In comparison to LFP (lithium-iron-phosphate) the material can be charged up to 4.25 V when combined with graphite anodes. This leads to a 0.5 V higher nominal voltage of the cells when compared to LFP. However, the material is **free of toxic metals** like cobalt or nickel and displays the same safety features as LFP. In summary LFMP is the perfect combination of **high energy, harmlessness and long term stability**. You can purchase the materials as electrode foils and cells in various layouts special customized for your application. Test cells without electrolyte are also available.

Interested in LFMP or in the outstanding electrode technology?
Please contact us!

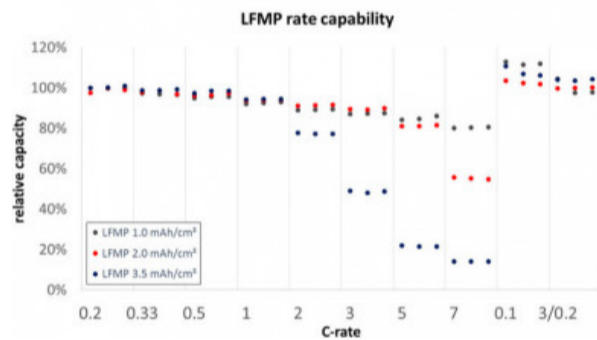


Cycle stability of LFMP/C full cells at 1C/1C

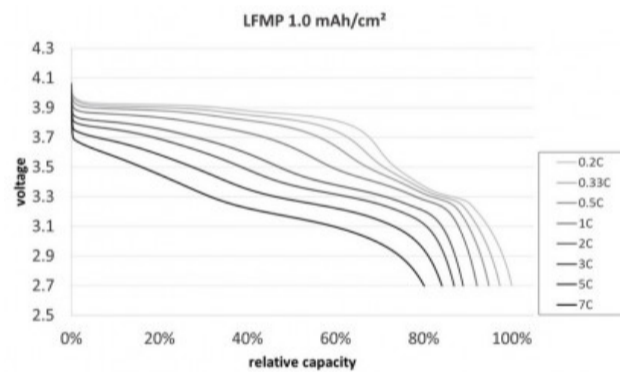


LFMP half cell voltage curves

LFMP has a specific capacity of about 150 mAh/g which is comparable to LFP and much higher as other cobalt free materials like LMO (lithium-manganese-spinel) or LMNO (lithium-manganese-nickel-oxide). Furthermore, LFMP shows a high rate capability. For a 1.0 mAh/cm² high power electrode in a full cell with graphite anode about 80% of initial capacity can be gained at 7C discharge rate. Also charging rates up to 3C are possible in full cells.



Rate capability of LFMP/C full cell



Voltage curves of LFMP/C full cells at different discharge rates

cell specifications		accumulator format		components	
nominal voltage	3.75 V	length	variable	cathode	LFMP
max. voltage	4.25 V	width	variable	anode	graphite
min. voltage	2.5 V	quantity of layers	variable	collector (cathode)	aluminium
load of electrode	1.0 mAh/cm² (high power) 2.0 mAh/cm² (balanced) 3.5 mAh/cm² (high energy)	cell capacity	up to 60 Ah	collector (anode)	copper
				electrolyte	standard

Customcells TAILORMADE ENERGY STORAGE Solutions



Upcoming Fairs & Conferences



The Battery Show Europe
15th to 17th May 2018 | Booth #B275

The Battery Show North America 2018
11th to 13th September 2018 | Booth # 1200

ees Europe
19th to 22nd June 2018 | Booth #C1.454

eMove360° Europe 2018
16th to 18th October 2018 | Booth #210A