

Title (en)

VERY LONG CYCLING OF LITHIUM ION BATTERIES WITH LITHIUM RICH CATHODE MATERIALS

Title (de)

SEHR LANGE ZYKLISIERUNG VON LITHIUM-IONEN-BATTERIEN MIT LITHIUMREICHEN KATHODENMATERIALIEN

Title (fr)

TRÈS LONG CYCLE DE VIE DES BATTERIES AU LITHIUM-ION AVEC DES MATÉRIAUX CATHODIQUES RICHES EN LITHIUM

Publication

EP 2612393 A4 20141105 (EN)

Application

EP 11822392 A 20110826

Priority

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- US 2011049304 W 20110826

Abstract (en)

[origin: WO2012030639A2] Lithium ion batteries can be activated and then cycled to exploit a moderate fraction of the discharge cycling capacity such that the discharge capacity and average discharge voltage stay within initial values for thousands of cycles. The superior cycling performance has been achieved at relatively high discharge rates and for practical battery formats. Lithium ion battery performance can also be achieved with superior cycling performance with partially activated batteries such that good discharge capacities can be exploited for many thousands of cycles before the discharge capacity and average discharge voltage drops more than 20% from initial values. The positive electrode active material can be a lithium rich metal oxide. The activation of the battery can comprise phase changes of the active materials. As described herein, the phase changes can be manipulated to exploit a reasonable fraction of the available high capacity of the material while providing outstanding cycling stability.

IPC 8 full level

H01M 4/505 (2010.01); **H01M 4/525** (2010.01); **H01M 4/583** (2010.01); **H01M 10/0525** (2010.01); **H01M 10/0567** (2010.01)

CPC (source: EP KR US)

H01M 4/505 (2013.01 - EP KR US); **H01M 4/525** (2013.01 - EP KR US); **H01M 10/0525** (2013.01 - EP KR US); **H01M 10/0567** (2013.01 - KR); **H01M 10/44** (2013.01 - EP US); **H01M 4/366** (2013.01 - EP US); **H01M 10/0567** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP US); **Y02T 10/70** (2013.01 - US)

Citation (search report)

- [XPI] WO 2011011582 A2 20110127 - ENVIA SYSTEMS INC [US], et al
- [XPI] WO 2011031546 A2 20110317 - ENVIA SYSTEMS INC [US], et al
- See references of WO 2012030639A2

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EP3285315A1

Designated contracting state (EPC)

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WO 2012030639 A2 20120308; **WO 2012030639 A3 20120816**; CN 103168383 A 20130619; EP 2612393 A2 20130710; EP 2612393 A4 20141105; JP 2013539594 A 20131024; KR 20130108332 A 20131002; TW 201230441 A 20120716

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