# Global and China Lithium Battery Industry Report, 2010-2011

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## *This report*

- **Analyzes lithium battery market, including its application**
- **Focuses on positive electrode and negative electrode of lithium battery, also lithium battery separator and electrolyte**
- **Highlights the operation of power lithium battery enterprises and traditional lithium battery enterprises in China**

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# Abstract

In 2010, the global shipments of lithium batteries registered some 3.902 billion units, up 27.4% compared with that in 2010. The figure is estimated to reach approximately 4.448 billion units in 2011, up 14% over 2010.

In 2010, Panasonic restructured Sanyo's battery business and merged it with Panasonic's battery business into Panasonic Energy Device Corporation. In FY 2011, the company achieved revenue of JPY 760 billion (about USD 8.66 billion), with operating margin of 1.6%. The revenue from lithium battery reached JPY 298 billion, ranking first in the world.

After years of rapid growth, China's lithium battery enterprises are showing signs of sluggishness. The leading enterprise BYD slid both in its revenue and sales volume, with automobiles and mobile phones occupying more resources of BYD, while the growth rate of Lishen and BAK slows down compared with that before 2010. Lithium battery enterprises fail to attract more capital as well as talents due to low ROI. Moreover, the implementation of tight monetary policy for a long period undermines the competitiveness of enterprises.

On the contrary, Korean enterprises continue to advance triumphantly, especially Samsung SDI which dominates the mobile phone field. In terms of shipments, Samsung SDI ranks first and continues to grow rapidly in 2011, and its shipment is estimated to grow 34%. LG Chem also keeps sound development trend.

On the one hand, LG Chem breaks out of the encirclement of Japanese manufacturers and enters the battery supply chain for HP laptops; on the other hand, LG Chem has obtained recognition from GM, FORD, BMW, BENZ, and VOLVO in lithium batteries for automotive application.

Mobile phones and laptops still provide the big market for lithium battery, while lithium battery for vehicles witnesses slow growth. EV and HEV/PHEV manufacturers are mainly dependent on government subsidies for their low price-performance ratio. But the American and European economies intend to reduce expenditure, so the government subsidy is likely to be canceled or reduced. In the next three to five years, it is impossible to bring down the price of EV and HEV, so the market will still be sluggish.

The upstream fields of lithium battery continue their fervent development but with slight change.

In the field of anode materials, Nichia and UMICORE scramble for supremacy, together making up over 50% of the market share. As for Chinese enterprises, compared with that in 2010, they experienced slight rise in shipment but sharp slide in profit. The most representative example is Easpring whose main business declined 14.2% YoY and operating income fell 88.2% YoY in H1 2011.

**Shipments of Global Key Lithium Battery Manufacturers, 2005-2011**(million units)

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011E |
|---|---|---|---|---|---|---|---|
| SANYO | 443.5 | 503.6 | 599.6 | 705.1 | 617.9 | | |
| SONY | 242.9 | 343.1 | 411.7 | 466.2 | 371.3 | 462.9 | 480 |
| PANASONIC | 196.6 | 203.1 | 207.1 | 179.3 | 196.6 | 990.8 | 1088 |
| HITACHI MAXELL | 59.9 | 81.6 | 127.1 | 162.2 | 111.4 | 139.8 | 150 |
| SGS | 61.8 | 71.4 | 57.4 | 45.8 | 26.5 | 40.2 | 40 |
| NEC | 66.2 | 85.5 | 47.7 | 34.5 | 7.2 | 20.3 | 20 |
| SAMSUNG SDI | 199.6 | 275.2 | 375.3 | 476.2 | 565.1 | 780.2 | 1045 |
| LGC | 118.6 | 161.0 | 226.9 | 215.2 | 402.2 | 586 | 735 |
| BYD | 140.3 | 198.0 | 282.0 | 268.7 | 201.6 | 161.6 | 150 |
| LISHEN | 75.3 | 110.7 | 108.0 | 114.4 | 169.8 | 247.5 | 250 |
| ATL(TDK) | 32.7 | 67.8 | 96.0 | 124.8 | 113.1 | 147.3 | 150 |
| BAK | 109.2 | 167.4 | 164.4 | 218.1 | 146.7 | 175.5 | 180 |
| E-ONE | 13.6 | 17.8 | 39.0 | 51.3 | 33.8 | 27.9 | 30 |
| A123 | | 4.5 | 14.1 | 15.3 | 18.3 | 21.0 | 30 |
| OTHERS | 33.3 | 33.9 | 25.5 | 24.0 | 30.7 | 40.8 | 40 |
| POUCH OTHERS | 46.1 | 44.6 | 39.6 | 48.3 | 50.7 | 60.2 | 60 |
| TOTAL | 1840 | 2369 | 2821 | 3149 | 3063 | 3902 | 4448 |



Source: ResearchInChina

LiFePO4, the hottest topic in H1 2010, almost vanishes in a flash. The LiFePO4 enterprises or institutions once spatting with each other have made peace. The patent holders, namely CNRS, Universite de Montreal, Hydro-Quebec, LFP Technology, Dr. John Goodenough, Dr. Michel Armand, and Phostech Lithium have reached an agreement on the establishment of Swiss Muttenz LiFePO4+C Licensing AG to promote LiFePO4 technology.

The LiFePO4 cannot be found in any mass-production automobile models. LiFePO4 fails to solve the problems of consistency, service lifetime as well as safety, while LiNiO2 or NMC/NAC will enjoy bright market prospects in the future. A123 System, a leading manufacturer of LiFePO4, continues to suffer losses, and the loss rate is still on the rise. In H1 2011, the company made a loss of USD 33 million, with the loss rate being as six times as that in H1 2010.

In the cathode field, Hitachi Chemical and Nippon Carbon account for more than 50% of the market share. In the area of separator, ASAHI KASEI, CELGARD, TONEN are the three biggest magnates, together making up 77% of the market share. In the electrolyte field, Cheil Industries under Samsung continues to stand first, followed by UBE.

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