

Global and China Lithium Battery Cathode

Material Industry Report,2013-2014

July 2014



Research In China

The Vertical Portal for China Business Intelligence

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and costeffective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications.

Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

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Abstract

Global and China Lithium Battery Cathode Material Industry Report, 2013-2014 mainly contains the followings:

- 1. Brief introduction to lithium battery
- 2. Overview of lithium battery industry
- 3. Lithium battery market
- 4. Lithium battery cathode material market and industry
- 5. Trends in lithium battery cathode material development
- 6. 14 lithium battery cathode material manufacturers
- 7. 13 lithium battery companies

Given bright prospects in electric vehicle market, many manufacturers, especially those from China, have crowded into the lithium battery industry. Unlike competitors from other countries, most Chinese manufacturers have a single type of product, which leaves them highly dependent on lithium battery market and thus brings with it extremely high risks. And as for the manufacturers outside of China, lithium battery typically occupies a rather low proportion of the total revenue.

Despite a sharp rise in shipments of mobile phones and tablet PCs as well as battery capacity in recent years, the average price of lithium batteries declined amid the fierce market competition. The electric vehicle market hasn't really started, and the significant decline in benefits of lithium battery companies has brought great pressure to the upstream raw materials. The US QE has led to a gradual fall in metal prices starting from 2011, lithium battery cathode material manufacturers have the ability to lower the prices. However, as the US QE programme is being phased out, the metal prices are very likely to bottom out. In future, if lithium battery cathode material manufacturers continue to lower the prices, their profits will shrink, but in face of the insufficient demand from downstream sectors, the manufacturers still have to cut prices.

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The price is one of the main factors that hinder the development of xEV vehicle market, followed by mileage and charging infrastructure. It is impossible for the government to provide a long-term subsidy to xEV vehicle market. And once the subsidies come to an end, xEV vehicle still cannot compete with traditional gasoline vehicles, which will inevitably result in a severe decline. During 2014-2015, there will still be a lack of cost-down potential for xEV battery, for the market size remains relatively small. Even the xEV battery manufacturer with the largest output is unable to supply more than 150,000 xEV vehicles. But when the output reaches 500,000 units, the battery cost is expected to see obvious decline, which will therefore bring down the xEV prices remarkably. It is projected that by 2017 the market will present a substantial increase, to 698,000 units, and that this figure will climb to 1.32 million units by 2019.

Lithium battery cathode materials for electric vehicles will develop toward NMC, and the LFP favored by Chinese manufacturers is not suitable for electric vehicles. Currently, it is generally believed that LFP is applicable to ESS market rather than electric vehicle market.

The NMC materials are divided into two types: one is represented by LiNio.8-xCoo.2AlxO2 (NCA) supplied by Panasonic to Tesla, which raises energy density by increasing the proportion of nickel to improve the performance. The other is represented by LG CHEM, which lowers the costs by reducing the proportion of cobalt. With the success of Tesla, high-nickel NMC materials are believed to have great potential, with the major global manufacturers now including SMM Group and TODA KOGYO. In terms of ESS market, the costs of lithium battery are too high and extremely less competitive, and the ESS is used only in the power supply for communication base stations.

Even if the electric vehicle market gradually expands, not all of the lithium battery suppliers will benefit from it. The first-tier manufacturers—LG CHEM, Panasonic and AESC have occupied more than 70% of market share. Samsung SDI and LEJ are among the second-tier manufacturers, of which Samsung SDI monopolies the supply of BMW and Volkswagen electric vehicle batteries, and is expected to be among the first-tier manufacturers in future.



Output of Major Global Lithium Battery Cathode Material Manufacturers, 2012-2013

Unit: ton LCO NMC LMO LNO/NCA LFP TOTAL Type Time 2013 2012 2012 2012 2012 2013 2013 2012 2013 2012 2013 2013 5,500 3,500 4,000 9,000 10,500 Umicore 6,500 Shanshan 3,600 6,000 1,000 2,500 400 1,000 0 5,000 9,500 0 NICHIA 4,600 4,100 3,000 3,700 1,000 1,200 0 0 300 300 8,900 9,300 L&F 1,500 5,400 5,500 2,000 0 600 6,900 8,100 Reshine 3,500 7,500 100 100 500 4,000 8,100 400 0 0 4,900 4,500 200 200 50 50 50 50 5,200 4,800 **B&M** Easpring 3,600 3,700 200 300 200 4,000 4,100 100 0 0 LG Chemical 4,000 4,000 4,000 4,000 Sumitomo Metal Mining 2,000 3,600 2,000 3,600 Mitsui Mining & Smelting 3,300 1,300 3,300 1,300

Table of contents

1 Overview of Lithium Battery Industry

- 1.1 Lithium Battery Introduction
- 1.2 Lithium Battery Manufacturing Process
- 1.3 Global Lithium Battery Market Size
- 1.4 Regional Pattern of Global Lithium Battery Industry
- 1.5 China Lithium Battery Industry Overview
- 1.5.1 Overview
- 1.5.2 Exports
- 1.6 Global Lithium Battery Industry Ranking
- 1.7 Lithium Battery Industry Chain
- 1.7.1 Cost Structure
- 1.7.2 Industry Chain

2 Lithium Battery Market

- 2.1 Cylinder Lithium Battery Market
- 2.2 Cylinder Lithium Battery Industry
- 2.3 xEV Vehicle Market
- 2.4 U.S. xEV Market
- 2.5 Europe xEV Market
- 2.6 Japan xEV Market
- 2.7 China xEV Market
- 2.8 xEV Battery Supply Chain
- 2.9 xEV Battery Market Share
- 2.10 xEV Battery Developments
- 2.11 ESS Market
- 2.12 Mobile Phone Market
- 2.13 Laptop Computer Market
- 2.14 Tablet PC Market

3 Lithium Battery Cathode Materials Market and Industry

3.1 Lithium Battery Cathode Materials Introduction

- 3.2 Lithium Battery Cathode Materials Market Trend
- 3.3 Technology Trends in Lithium Battery Cathode Materials
- 3.3 Shipments of Major Lithium Battery Cathode Materials Companies in Japan
- 3.4 Shipments of Major Lithium Battery Cathode Materials Companies in South Korea
- 3.5 Shipments of Major Lithium Battery Cathode Materials Companies in Taiwan and Europe
- 3.6 Shipments of Major Lithium Battery Cathode
- Materials Companies in Mainland China 3.7 China Lithium Battery Cathode Materials
- **Industry Ranking**

4 Lithium Battery Cathode Materials Companies

- 4.1 Umicore
- 4.2 Ningbo Shanshan Co., Ltd.
- 4.3 Beijing Easpring Material Technology Co., Ltd.
- 4.4 Hunan Reshine New Material Co., Ltd.
- 4.5 Ningbo Jinhe New Materials Co., Ltd.
- 4.6 CITIC GUOAN MGL
- 4.7 Tianjin B&M Science and Technology Jointstock Co., Ltd.
- 4.8 Pulead Technology Industry Co., Ltd.
- 4.9 Shenzhen Tianjiao Technology Co., Ltd.
- 4.10 NICHIA
- 4.11 L&F
- 4.12 Tanaka Chemical
- 4.13 TODA KOGYO
- 4.14 Tianjin STL Energy Technology Co., Ltd.

5 Lithium Battery Companies

5.1 China BAK Battery, Inc. (CBAK)

- 5.2 BYD
- **5.3 SCUD**
- 5.4 Tianjin Lishen Battery Joint-Stock Co., Ltd.
- 5.5 ATL (TDK)
- 5.6 Sony
- 5.7 Samsung SDI
- 5.8 LG Chem
- 5.9 Simplo Technology
- 5.10 Dynapack
- 5.11 DESAY
- 5.12 Sunwoda
- 5.13 Panasonic

- Global Lithium Battery Shipments, 2005-2015E
- Global Lithium Battery Market Size, 2005-2015E
- Global Lithium Battery Market by Applications, 2009-2015E
- Global Lithium Battery Shipments by Shape, 2009-2015E
- Global Lithium Battery Market by Shape, 2009-2015E
- Geographical Breakdown of Global Lithium Battery Industry (by Value), 2005-2012
- China's Battery Output by Type, 2012-2013
- China's Battery Revenue by Type, 2012-2013
- Ranking of China's Top 20 Lithium Battery Companies by Revenue, 2013
- Ranking of China's Top 10 Power Lithium Battery Companies by Revenue, 2013
- Ranking of China's Top 8 Lithium Battery Pack Companies by Revenue, 2013
- China's Rechargeable Lithium Battery Export Volume and Value, 2007-2013
- Primary Lithium Battery Export Volume by Region, 2013
- Top 10 Primary Lithium Battery Export Countries/Regions, 2013
- Export Value of Top 10 Primary Lithium Battery Export Enterprises, 2013
- Lithium-ion Battery Export Volume by Region, 2013
- Top 10 Lithium-ion Battery Export Countries/Regions, 2013
- Export Value of Top 10 Lithium-ion Battery Export Enterprises, 2013
- Shipments of Major Global Lithium Battery Companies, 2005-2012
- Revenue Ranking of Major Global Lithium Battery Companies, 2009-2012
- Cost Structure of LiCoO2 Lithium Battery
- Lithium Battery Industry Chain
- Global Downstream Demand for Cylinder Lithium Battery, 2012-2016E
- Global Demand for Cylinder Lithium Battery by Applications, 2012-2016E
- Average Price of Global Cylinder Lithium Battery, 2012-2016E

- Global Cylinder Lithium Battery Output by Region, 2012-2016E
- Output of Major Global Cylinder Lithium Battery Companies, 2012-2013
- Revenue of Major Global Cylinder Lithium Battery Companies, 2012-2013
- Shipments of xEV Vehicle Market, 2011-2019E
- Global xEV Shipments by Region, 2014 VS 2019E
- EV and PHEV Shipments in Main Regions, 2013
- Shipments of Major Global xEV Manufacturers, 2013
- U.S. xEV Sales Volume by Model, 2013
- U.S. xEV Shipment Ranking, 2013-2014H1
- Europe xEV Market Share by Model, 2013
- Europe xEV Shipment Ranking, 2013
- Japan xEV Market Share by Model, 2013
- Japan xEV Shipment Ranking, 2013
- China xEV Market Share by Manufacturer, 2013
- Supply Relations between xEV Manufacturers and xEV Battery Companies
- Market Share of xEV Battery Companies, 2013
- Capacity Utilization of xEV Battery Companies, 2013
- Market Share of xEV Battery Companies (by Revenue), 2013-2014
- ESS Market Size, 2011 VS 2020E
- Market Value of Global Grid-Scale Energy Storage System, 2012-2020E
- Market Value of Global Application for Grid-Scale Energy Storage, 2012-2020E
- Market Value of Asia Application for Grid-Scale Energy Storage, 2012-2020E
- Global Mobile Phone Shipments, 2007-2015E
- Worldwide Smartphone Sales to End Users by Vendor, 2013
- Worldwide Smartphone Sales to End Users by Operating System, 2013

- Worldwide Mobile Phone Sales to End Users by Vendor, 2013
- Laptop Computer Shipments, 2008-2015E
- Shipments of Major Global Laptop ODMs, 2010-2013
- Global Tablet PC Shipments, 2011-2016E
- Market Share of Main Tablet PC Brands, 2013
- Output of Global Tablet PC Companies, 2012-2013
- Technical Comparison of Main Cathode Materials
- Price Trends in Various Lithium Battery Cathode Materials, 2012-2020E
- Global Lithium Battery Cathode Material Market Size, 2012-2016E
- Global Lithium Battery Cathode Material Shipments by Technology, 2009-2015E
- Global Lithium Battery Cathode Material Sales by Technology, 2012-2015E
- ESS Requirements for Battery
- Japan's Lithium Battery Cathode Material Shipments and Sales, 2012-2015E
- Shipments of Lithium Battery Cathode Material Manufacturers in Japan, 2012-2013
- Shipments of Lithium Battery Cathode Material Manufacturers in South Korea, 2012-2013
- Shipments of Lithium Battery Cathode Material Manufacturers in Taiwan and Europe, 2012-2013
- Revenue Ranking of Lithium Battery Cathode Material Manufacturers in China, 2013
- Revenue Ranking of Lithium Battery Cathode Material Manufacturers in China, 2010-2011
- Name List of Lithium Iron Phosphate Suppliers in China, 2010
- Organization Structure of Umicore
- Revenue and EBIT Margin of Umicore, 2005-2014
- Energy Material Revenue and EBIT of Umicore, 2008-2014
- · Battery Material Base of Umicore
- Organization Structure of Umicore Greater China
- Distribution of Umicore in China

- Revenue Breakdown of Umicore Greater China by Product
- Revenue and Operating Income of Shanshan Corporation, 2007-2014
- Revenue Breakdown of Shanshan Corporation by Product, 2007-2013
- Organization Structure of Beijing Easpring Material Technology
- Revenue and Operating Margin of Beijing Easpring Material Technology, 2007-2014
- Revenue Breakdown of Beijing Easpring Material Technology by Customer, 2011
- Organization Structure of Hunan Reshine New Material
- Revenue and Operating Income of Tianjin B&M Science and Technology, 2007-2014
- Financial Data of Tianjin B&M Science and Technology by the end of 2013Q3
- Top 5 Customers of Tianjin B&M Science and Technology, 2009
- Organization Structure of Pulead Technology Industry
- Revenue and Operating Margin of NICHIA, 2003-2014
- Output of NICHIA 2012-2013
- Revenue and Operating Income of L&F, 2006-2014
- Output Breakdown of L&F by Technology, 2012-2013
- Revenue and Operating Income of Tanaka Chemical, FY2006-FY2015E
- Balance Sheet of Tanaka Chemical, FY2009-FY2014
- Revenue Breakdown of Tanaka Chemical by Business, FY2011-FY2014
- Product Shipments of Tanaka Chemical, FY2009-FY2014
- Sales/Operating Income/Net Income of TODA KOGYO, FY2010-FY2014
- Assets and Liabilities of TODA KOGYO, FY2010-FY2014
- Organization Structure of CBAK
- Development History of CBAK
- Revenue and Operating Margin of CBAK, FY2003-FY2014
- Revenue Breakdown of CBAK by Product, FY2004-FY2013

- Revenue Breakdown of CBAK by Region, FY2004-FY2013
- Major Customers of CBAK
- Raw Material Suppliers of CBAK
- Revenue and Gross Margin of BYD Battery, 2007-2013
- Revenue Breakdown of BYD Battery by Product, 2003-2015E
- Gross Margin and Capacity Utilization of BYD Rechargeable Battery, 2008-2015E
- Gross Margin of BYD Battery, 2008-2015E
- Average Selling Price of BYD Battery, 2006-2010
- Shipments of BYD Battery, 2006-2011
- Capacity, Output, Sales Volume and ASP of BYD Battery, 2008-2010
- Revenue and EBIT Margin of SCUD, 2003-2014
- Assets and Liabilities of SCUD, 2009-2013
- Sales Volume of SCUD Battery, 2005-2010
- Revenue Breakdown of SCUD by Product, 2011-2013
- Shipment Breakdown of SCUD by Product, 2012-2013
- Revenue and Operating Margin of Lishen, 2004-2014
- Revenue and Operating Margin of Samsung SDI, 2008-2014
- Gross Margin and Operating Margin of Samsung SDI, 2013Q1-2014Q1
- Revenue and Shipments of Samsung SDI Battery, 2007-2014
- Revenue and ASP of Samsung SDI Battery, 2007-2014
- Revenue and Operating Margin of Samsung SDI Battery, 2010-2014
- Revenue Breakdown of Samsung SDI by Product, 2011-2014
- Revenue Breakdown of Samsung SDI by Region, 2012-2013
- Revenue Breakdown of Samsung SDI by Product, 2017E
- Revenue of Tianjin Samsung SDI, 2010-2013

- Financial Data of Tianjin Samsung SDI, 2013
- Revenue and Operating Margin of LG Chem, 2007-2014
- Quarterly Revenue and Operating Margin of LG Chem, Q/2012-Q1/2014
- Revenue and Operating Margin of Energy Solution of LG Chem, 2010-2014
- CAPEX of Energy Solution of LG Chem, 2010-2014
- Revenue and Gross Margin of Simplo Technology, 2000-2014
- Monthly Revenue of Simplo Technology, 6/2012-6/2014
- Shipments and ASP of Simplo Technology, 2004-2013
- Laptop Computer Battery Market Share of Simplo Technology, 2004-2013
- Financial Data of Simplo Technology's Subsidiaries in China, 2013
- Revenue and Gross Margin of Dynapack, 2005-2014
- Monthly Revenue of Dynapack, 6/2012-6/2014
- Revenue and Operating Margin of DESAY, 2008-2014
- Assets and Liabilities of DESAY, 2009-2013
- Revenue and Operating Margin of Sunwoda, 2008-2014
- Assets and Liabilities of Sunwoda, 2008-2013
- Revenue Breakdown of Sunwoda by Applications, 2013
- Gross Profit Breakdown of Sunwoda by Applications, 2013

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