



**Global and China Lithium Iron Phosphate
(LiFePO₄) and Battery Industry Report,
2016-2020**

Dec. 2016

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 cost-effective 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.

Abstract

Lithium iron phosphate (LiFePO₄), a lithium battery cathode material, features moderate price, excellent safety performance and high-temperature stability. The material is primarily applied to EV and energy storage, around 80% in the former domestically in China.

Global EV sales reported 549,000 units in 2015, an upsurge of 70.4% from a year ago. Being more vigorously promoted around the globe, the EV market will see an AAGR of about 40% during 2016-2020, reaching 3.32 million units in 2020. Driven by this, global LiFePO₄ shipments soared by 136.8% to 49,500 tons in 2015 and it is expected to hit 309,400 tons in 2020.

Global LiFePO₄ markets are concentrated in China, Taiwan and other countries/regions with the first accounting for over 60%. China's shipment of LiFePO₄ totaled 32,400 tons in 2015, 65% of the world-wide market, and is expected to attain 236,000 tons in 2020 with the proportion increasing to 76%.

LiFePO₄ is directly used for the production of LiFePO₄ battery. China shipped 10.97Gwh of LiFePO₄ power batteries in 2015, two times higher than the 2014 level. Driven by rapid growth of new energy vehicle market, the LiFePO₄ battery market will continue to expand but, affected by the substitution of ternary battery, at a slower rate, an estimated 20% during 2016-2020.

The substitution of ternary material for LiFePO₄ is mainly reflected in its high energy density that can fulfill the demand of EV mileage. As a result, electric passenger car and electric special vehicle markets have been encroached on by ternary materials in recent two years. However, as LiFePO₄ is safer than ternary materials, the industries that are demanding on safety like electric bus still adopt mainly LiFePO₄ battery. The Ministry of Industry and Information Technology (MIIT) suspended the inclusion of ternary lithium battery-powered bus into the catalogue of recommended models for new energy vehicle promotion and application "due to safety concerns" in Jan 2016, thus fueling LiFePO₄ battery-powered electric vehicle market. Data show that 61% of electric buses in China in 2016H1 adopted LiFePO₄ battery, up 23 percentage points from 37.3% in the same period of 2015.

Overall, LiFePO₄ and ternary material will coexist and electric bus and energy storage will be major stimuli to the development of LiFePO₄ battery in China over the next five years.

Most of global LiFePO₄ producers are located in China and Taiwan, but core technologies are controlled by European and American companies including A123, Valence and Phostech.

More than 100 Chinese local LiFePO₄ manufacturers can be classified into: 1) the ones capable of producing power battery, such as BYD, Guoxuan High-Tech, and Wanxiang A123, which achieve self-sufficiency via layout in LiFePO₄; 2) professional LiFePO₄ producers, such as Pulead Technology Industry Co. Ltd., Shenghua Technology, and Aleees, which have established stable partnership with first-tier LiFePO₄ battery companies like CATL, China Aviation Lithium Battery, and OptimumNano.

Global and China Lithium Iron Phosphate (LiFePO₄) and Battery Industry Report, 2016-2020 focuses on the following:

- Global lithium battery cathode materials and LiFePO₄ markets (size, consumption structure, enterprises' layout, etc.);
- Chinese lithium battery cathode materials and LiFePO₄ markets (size, import & export, consumption structure, enterprises' layout, etc.);
- Lithium carbonate and iron phosphate, upstream raw materials of LiFePO₄ cathode materials;
- Demand for LiFePO₄ battery in seven application markets like electric vehicle, electric bicycle, 3C consumer electronics, and energy storage;
- Market for substitutes of LiFePO₄ cathode material including ternary cathode materials, lithium cobalt oxide, and lithium manganese oxide;
- 24 global and Chinese LiFePO₄ producers (operation, development strategy, etc.);
- 14 major LiFePO₄ battery producers (operation, development strategy, etc.)

Capacity of Key LiFePo₄ Materials Manufacturers in Mainland China, 2015-2016

Company (t/a)	2015	2016E
Shenzhen BTR New Energy materials Co., Ltd	8,000	18,000
BYD	8,000	8,000
Shenghua Technology Co., Ltd.	6,000	6,000
Tianjin STL Energy Technology Co., Ltd.	5,000	10,000
Yantai Zhuoneng Battery Material Co., Ltd.	5,000	5,000
GuanghanMufu Lithium Power Materials Co., Ltd.	3,000	3,000
Hefei Guoxuan High-Tech Power Energy Co., Ltd.	3,000	3,000
Shenzhen Dynanonic Co., Ltd	3,000	3,000
Pulead Technology Industry Co. Ltd.	2,500	10,500
Hunan Haorun Technology Co., Ltd.	2,000	2,000
Lasting Brilliance New Energy Technology Co., Ltd.	2,000	2,000
Jiangxi Kingli Science Share Co., Ltd	2,000	3,000
Qingdao Qianyun High-tech New Material Co., Ltd.	1,500	1,500
Changzhou Gaobo Energy Materials Co., Ltd.	1,000	1,000
Guizhou Anda Energy Technology Co., Ltd.	800	800
NanoChem Systems (Suzhou) Co., Ltd.	500	500
Xinxiang Chuangjia Power Supply Material Co., Ltd.	200	200
Xinxiang Huaxin Energy Materials Co., Ltd.	150	150
Total	53,650	77,650

Source: ResearchInChina

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