



**Global and China ITO Targets Industry  
Chain Report, 2019-2025**

**May 2019**

## **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

Featured by good electrical conductivity and transparency, ITO targets are widely applied to fields of LCD, flat-panel display, plasma display, touch screen, electronic paper, OLED, solar cell, antistatic coating film, and transparent EMI shielding conductive film.

Global ITO technology is primarily monopolized by few enterprises including JX Nippon Mining & Metals, Mitsui Mining, Tosoh, Samsung and Heraeus. Of which, the former three totally occupy about 65% of global ITO market. In 2018, global ITO targets output hit 2.5 kt, and is estimated to annually grow by 5% by 2025.

There are over 20 ITO targets enterprises in China. After more than decade's research, Chinese enterprises made a breakthrough in targets technology and gradually shortened gap with Japanese and Korean counterparts. Currently, with gradual expansion in medium and low-end market (like touch screen market), domestic ITO targets begin to enter high-end TEF industry for testing. However, it is still a challenge to realize domestication due to low product level, high cost control pressure and low profit margin.

Compared to supply end, demand of ITO targets from downstream market is strong, especially driven by the development of OLED and touch screen, the figure exceeded 1kt in 2018. While half of them were imported and mainly applied to the production of high-end products.

In recent ten years, with the development of LCD industry and emerging of touch input electronic products like PDA and e-book, especially the development of OLED and other display devices, ITO targets manufacturing technique and equipment are required to meet new and higher requirements. For instance, demand of ITO targets for high-end TFT-LCD display panels will further increase. In Jun. 2018, Vital Materials Co., Ltd. successfully rolled out self-developed G11 ITO rotating targets.



Source: Global and China ITO Targets Industry Report, 2019-2025

As of industry chain, indium serves as the main raw material of ITO targets, 80% of it is used to manufacture ITO targets, and reserves of indium resource in China share 50% of the global total. Based on the demand of ITO targets (as the main downstream industry of indium), it could be estimated that total annual demand of ITO targets in Mainland China and Taiwan is 600t, taking up 52% of annual ITO usage in the world, while annual demand of ITO targets in Korea and Japan is 570t, occupying 48% of world's total.

In recent years, indium supply and demand in China is basically balanced. In 2018, consumption of defined indium (including targets) in China reached about 150 tons. Zhuzhou Smelter Group Co., Ltd. is the largest indium manufacturer in China. In the future, demand of indium will grow at a rate of about 5% due to the emerging of 5G, smart manufacturing, digital economy industries and new technology revolutions.

Global and China ITO Targets Industry Chain Report 2019-2025 focuses on the following:

- Global ITO targets market supply & demand and competition;
- Technical status, market supply & demand, competitive landscape, key projects, substitute products and development trend of ITO targets industry in China;
- Global and Chinese indium market supply & demand, import & export, and price;
- Global and Chinese tin market supply & demand, import & export, and price;
- ITO targets downstream industries (LCD, touch panel, solar cell, LED/OLED) status and demand;
- 8 global and 15 Chinese ITO targets enterprises, including operation status, ITO targets business and development strategy.

### **1 Brief Introduction to ITO Targets**

- 1.1 Concept
- 1.2 Preparation Method
- 1.3 Industry Chain

### **2 Status Quo of Global ITO Targets**

- 2.1 Supply and Demand
- 2.2 Competition Pattern
  - 2.2.1 Production Pattern
  - 2.2.2 Consumption Pattern

### **3. Status Quo of Chinese ITO Targets**

- 3.1 Overview
- 3.2 Technology
- 3.3 Supply and Demand
  - 3.3.1 Supply
  - 3.3.2 Demand
- 3.4 Key Projects
- 3.5 Alternative Products
  - 3.5.1 Metal Mesh
  - 3.5.2 Silver Nanowire
  - 3.5.3 Graphene
- 3.6 Development Trend

### **4 Upstream - Indium Market**

- 4.1 Introduction
- 4.2 Reserves and Distribution

### **4.3 Supply and Demand**

- 4.3.1 Supply
- 4.3.2 Consumption
- 4.4 Import and Export
  - 4.4.1 Related Policies
  - 4.4.2 Import and Export Volume
- 4.5 Price Trend

### **5 Upstream - Tin Market**

- 5.1 Introduction
- 5.2 Reserves and Distribution
- 5.3 Supply and Demand
  - 5.3.1 Global
  - 5.3.2 China
- 5.4 Import and Export
- 5.5 Price Trend
- 5.6 Key Enterprises

### **6 Downstream Applications**

- 6.1 Overview
- 6.2 LCD Panel
  - 6.2.1 Market Situation
  - 6.2.2 ITO Targets for LCD Panel
- 6.3 Touch Panel
  - 6.3.1 Market Situation
  - 6.3.2 ITO Targets for Touch Panel
- 6.4 Others

6.4.1 Solar Cell

6.4.2 LED

6.4.3 OLED

### **7 Key Companies Worldwide**

7.1 Mitsui Mining & Smelting Co., Ltd.

7.1.1 Profile

7.1.2 Operation

7.1.3 ITO Targets Business

7.1.4 Development in China

7.2 JX Nippon Mining & Metals

7.2.1 Profile

7.2.2 Operation

7.2.3 ITO Targets Business

7.2.4 Development in China

7.3 Tosoh Corporation

7.3.1 Profile

7.3.2 Operation

7.3.3 ITO Targets Business

7.3.4 Development in China

7.4 Samsung Corning

7.4.1 Profile

7.4.2 Operation

7.4.3 ITO Targets Business

7.5 Heraeus

7.5.1 Profile

7.5.2 Operation

7.5.3 ITO Targets Business

7.5.4 Development in China

7.6 Umicore

7.6.1 Profile

7.6.2 Operation

7.6.3 ITO Targets Business

7.6.4 Development in China

7.7 ULVAC

7.7.1 Profile

7.7.2 Operation

7.7.3 ITO Targets Business

7.8 Solar Applied Materials Technology Corporation (SOLAR)

7.8.1 Profile

7.8.2 Operation

7.8.3 ITO Targets Business

### **8. Key Enterprises in China**

8.1 Zhuzhou Smelter Group Co., Ltd.

8.1.1 Profile

8.1.2 Operation

8.1.3 ITO Targets Business

8.1.4 Development Strategy

8.2 Guangxi China Tin Group Co., Ltd.

8.2.1 Profile

8.2.2 Operation

8.2.3 ITO Targets Business

8.3 CNMC (Ningxia) Orient Group Co., Ltd.

8.3.1 Profile

8.3.2 Operation	8.11.1 Profile
8.3.3 ITO Targets Business	8.11.2 ITO Targets Business
8.4 Guangxi Crystal Union Photoelectric Materials Co., Ltd.	8.12 Omat Group
8.4.1 Profile	8.12.1 Profile
8.4.2 Operation	8.12.2 ITO Targets Business
8.4.3 ITO Targets Business	8.13 Vital Materials Co., Ltd.
8.4.4 Development Strategy	8.13.1 Profile
8.5 Beijing Yeke Nano Tech Co., Ltd.	8.13.2 Operation
8.5.1 Profile	8.13.2 ITO Targets Business
8.5.2 ITO Targets Business	8.14 Fujian Acetron New Materials Co., Ltd.
8.6 Guangdong Triumph Photovoltaic Technology Research Institute Co., Ltd.	8.14.1 Profile
8.6.1 Profile	8.14.2 Operation
8.6.2 ITO Targets Business	8.14.3 ITO Targets Business
8.7 Shaoguan Sigma Technology Co., Ltd.	8.15 Yunnan Tin Co., Ltd.
8.7.1 Profile	8.15.1 Profile
8.7.2 ITO Targets Business	8.15.2 Operation
8.8 Hebei Hengbo New Materials Technology Co., Ltd.	8.15.3 ITO Targets Business
8.8.1 Profile	
8.8.2 ITO Targets Business	<b>9 Summary and Forecast</b>
8.9 Changsha ENAM Optoelectronic Material Co., Ltd.	9.1 Market
8.9.1 Profile	9.2 Enterprises
8.9.2 ITO Targets Business	
8.10 Luoyang Ship Material Research Institute	
8.10.1 Profile	
8.10.2 ITO Targets Business	
8.11 Changzhou Sujing Electronic Material Co., Ltd.	



Major Preparation Methods and Their Merits & Demerits of ITO Targets  
ITO Target Industry Chain  
Capacity and Share of Global Major ITO Target Enterprises, 2018  
Global Output of ITO Targets, 2015-2025E  
Global Demand for ITO Targets, 2015-2025E  
Global ITO Targets Supply Market by Country/Region, 2018  
Global Major ITO Target Enterprises by Grade  
Policies on ITO Targets in China, 2015-2018  
ITO Target Preparation Methods of Major Chinese Enterprises  
Capacity of Major Chinese ITO Target Enterprises, 2018  
China's Output of ITO Targets, 2015-2025E  
China's Demand for ITO Targets, 2015-2025E  
China's Demand Structure of ITO Targets, 2018  
Key ITO Targets Projects Planned or under Construction in China, 2018  
Comparison of ITO, Metal Mesh and Silver Nanowire  
Transmittance and Conductivity of ITO Substitutes  
Major Enterprises Embarking on ITO Substitution Field in Recent Years  
Structure of Silver Nanowires  
Major Silver Nanowire Producers in China  
Graphene Film Capacity of Some Chinese Enterprises  
China Graphene Film Market Size, 2015-2025E  
Global Indium Reserves and Basic Reserves  
Indium Resources in China  
Global Refined Indium Supply, 2015-2018  
China's Output of Refined Indium, 2015-2018  
China Output of Refined Indium by Region, 2015-2018  
Global Indium Ingot Consumption Structure, 2018

China's Consumption Structure of Refined Indium, 2014-2018  
China's Indium Consumption, 2015-2025E  
China's Tariffs on Indium Export, 2007-2018  
China's Exports of Indium, 2015-2018  
Spot Refined Indium Prices in China, 2018-2019  
Global Tin Reserves and Distribution, 2018  
China's Recoverable Reserves of Tin Ore  
Global Tin Ore Output (by Country), 2015-2018  
Global Refined Tin Output, 2015-2018  
Global Refined Tin Output (by Region), 2018  
Global Refined Tin Consumption, 2015-2018  
Global Refined Tin Consumption (by Region), 2014-2018  
Global Refined Tin Consumption by Field, 2018  
China's Tin Concentrate Output (by Province and Municipality), 2016-2018  
China's Refined Tin Output and Consumption, 2015-2018  
Refined Tin Output in China's Major Regions, 2016-2018  
China's Refined Tin Consumption by Field, 2018  
China's Imports and Exports of Refined Tin, 2015-2018  
China's Imports of Major Tin Products, 2015-2018  
China's Exports of Major Tin Products, 2015-2018  
Tin Prices of Tin at Home and Abroad, 2015-2019  
Global Top10 Refined Tin Producers by Output, 2018  
Consumption Structure of ITO Targets by Application  
Global Large-sized TFT-LCD Panel Shipments and YoY Growth, 2013-2025E  
Global Large-sized TFT-LCD Panel Shipments by Application, 2018  
LCD Panel Production Lines in Operation and under Construction in China, 2018  
Application of ITO in LCD  
Global Touch Panel Shipments, 2015-2025E

- China's Touch Panel Shipments, 2015-2025E
- Performance Comparison of Two Types of Touch Panels
- Working Principle of Capacitive Touch Screen
- Global Demand for Touch Panel-use ITO Targets, 2015-2025E
- Application of ITO in Solar Cell
- China's Solar Cell Output, 2015-2025E
- Global Top10 Solar Cell Makers, 2018
- Application of ITO in LED
- Global LED Lighting Market Size, 2015-2025E
- Chinese LED Chip Market Size, 2015-2025E
- Concentration Ratio of LED Chip Industry in China, 2014-2018
- Structural Diagram of OLED
- Global OLED Market Size, 2014-2025E
- OLED Industry Chain
- Main Businesses and Products of Mitsui Mining & Smelting
- Revenue and Net Income of Mitsui Mining & Smelting, FY2015-FY2018
- Revenue of Mitsui Mining & Smelting by Business, FY2014-FY2018
- ITO Target Growth of Mitsui Mining & Smelting, 2014-2018
- Mitsui Mining & Smelting's Sputtering Target Business, 2018
- Mitsui Mining & Smelting's Companies in China
- Major Products of JX Nippon Mining &Metals
- Business Structure of JX Nippon Mining &Metals
- Revenue of JX Nippon Mining &Metals, FY2015-FY2018
- Ordinary Income of JX Nippon Mining &Metals by Business, FY2015-FY2018
- Competitive Edges of JX Nippon Mining &Metals in Electronic Materials
- Revenue of JX Nippon Mining &Metals by Region, FY2016-FY2018
- Sputtering Target Bases of JX Nippon Mining &Metals

ITO Target Capacity of JX Nippon Mining &Metals, 2018  
Operations of JX Nippon Mining &Metals in China  
Revenue and Net Income of Tosoh, FY2015-FY2018  
Revenue of Tosoh by Business, FY2014-FY2018  
Revenue of Tosoh by Region, FY2016-FY2018  
Tosoh's Companies in China  
Main Financial Indicators of Heraeus, FY2014-FY2018  
Revenue of Heraeus by Business, FY2014-FY2018  
Revenue of Heraeus by Region, FY2018  
Global Network of Heraeus  
Greater China Business of Heraeus  
Main Financial Indicators of Umicore, 2015-2018  
Revenue of Umicore by Business, 2015-2018  
Revenue of Umicore by Region, 2018  
Umicore's Companies in China  
Revenue and Net Income of ULVAC, FY2015-FY2018  
Major Products of ULVAC's Materials  
Net Sales of ULVAC by Business, FY2013-FY2018  
Net Sales of ULVAC by Region, FY2015-FY2018  
Performance of ULVAC ITO Targets  
Major Products and Capacity of ULVAC Materials (Suzhou) Co., Ltd.  
Key Subsidiaries and Businesses of SOLAR  
Revenue and Net Income of SOLAR, 2015-2018  
Revenue and Net Income of Zhuzhou Smelter Group, 2015-2018  
Operating Revenue and Gross Margin of Zhuzhou Smelter Group by Business, 2015-2018  
Main Economic Indicators of Guangxi China Tin Group, 2015-2016  
ITO Targets and Technical Parameters Prepared by Guangxi China Tin Group with Different Processes

- Technical Parameters of ITO Targets of Guangxi China Tin Group
- Performance Indicators of ITO Targets of CNMC (Ningxia) Orient Group
- Performance of ITO Targets of Guangxi Crystal Union Photoelectric Materials
- Performance of ITO Targets of Beijing Yeke Nano Tech
- Performance of ITO Targets of Shaoguan Sigma Technology
- ITO Targets Products of Hengbo Materials
- Technical Parameters of ITO Targets of Hengbo Materials
- Operational Performance of Enam Optoelectronic, 2018
- Performance of ITO Targets of Changsha ENAM Optoelectronic Material
- Performance of ITO Targets of Luoyang Ship Material Research Institute
- Business Layout of Omat Group
- Omat's ITO Targets Products
- Vital's Development History
- Vital's Main Manufacturing Bases
- Vital's Core Technology
- Vital's Main ITO Targets Subsidiaries
- Revenue and YoY of Fujian Acetron, 2013-2018
- Net Income and YoY of Fujian Acetron, 2013-2018
- Revenue of Fujian Acetron by Business, 2018
- Gross Profit and Gross Margin of Fujian Acetron by Business, 2018
- Revenue of Huludao Zinc Industry by Product, 2017-2018
- Indium and Tin Reserves of Yunnan Tin, 2017-2018
- Market Share of Major ITO Targets Enterprises in China, 2018

You can place your order in the following alternative ways:

1. Order online at [www.researchinchina.com](http://www.researchinchina.com)
2. Fax order sheet to us at fax number: +86 10 82601570
3. Email your order to: [report@researchinchina.com](mailto:report@researchinchina.com)
4. Phone us at +86 10 82600828

<b>Party A:</b>			
Name:			
Address:			
Contact Person:		Tel	
E-mail:		Fax	

<b>Party B:</b>			
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)		
Address:	Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080		
Contact Person:	Liao Yan	Phone:	86-10-82600828
E-mail:	<a href="mailto:report@researchinchina.com">report@researchinchina.com</a>	Fax:	86-10-82601570
Bank details:	Beneficial Name: Beijing Waterwood Technologies Co., Ltd Bank Name: Bank of Communications, Beijing Branch Bank Address: NO.1 jinxiyuan shijicheng, Landianchang, Haidian District, Beijing Bank Account No #: 110060668012015061217 Routing No #: 332906 Bank SWIFT Code: COMMCNSHBJG		

Title	Format	Cost
<i>Total</i>		

Choose type of format

- PDF (Single user license) .....2,800 USD
- Hard copy ..... 3,000 USD
- PDF (Enterprisewide license)..... 4,200 USD

※ Reports will be dispatched immediately once full payment has been received.  
Payment may be made by wire transfer or credit card via PayPal.

### About ResearchInChina

ResearchInChina ([www.researchinchina.com](http://www.researchinchina.com)) is a leading independent provider of China business intelligence. Our research is designed to meet the diverse planning and information needs of businesses, institutions, and professional investors worldwide. Our services are used in a variety of ways, including strategic planning, product and sales forecasting, risk and sensitivity management, and as investment research.

#### Our Major Activities

- *Multi-users market reports*
- *Database-RICDB*
- *Custom Research*
- *Company Search*

**RICDB** (<http://www.researchinchina.com/data/database.html>), is a visible financial data base presented by map and graph covering global and China macroeconomic data, industry data, and company data. It has included nearly 500,000 indices (based on time series), and is continuing to update and increase. The most significant feature of this base is that the vast majority of indices (about 400,000) can be displayed in map.

After purchase of our report, you will be automatically granted to enjoy 2 weeks trial service of RICDB for free.

After trial, you can decide to become our formal member or not. We will try our best to meet your demand. For more information, please find at [www.researchinchina.com](http://www.researchinchina.com)

For any problems, please contact our service team at: