

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.

Copyright 2012 ResearchInChina

Abstract

Global 3D glass market has been enlarging over the recent years amid demetallization of smartphone back covers and popularity of smart wearables, to approximately \$2.86 billion in 2019 and to an estimated \$8.15 billion in 2026 with more use in downstream sectors.

In China, 3D glass penetration remains well below the global average and market size is small, leaving much room for growth. China's 3D glass market was worth roughly RMB3.523 billion in 2019, a figure projected to soar to RMB18.356 billion in 2026. Nowadays, 3D glass mainly finds application in smartphones (65.9% in 2019) and wearable devices (28.8% in 2019) whilst it gets increasingly utilized for automotive touch display and the demand for 3Dcurved glass soars. Conceivably, the automotive market will be a key stimulant for 3D glass.

100.0% 90.0% 80.0% 70.0% 60.0% 50.0% 40.0% 30.0% 20.0% 10.0% 0.0% 2017 2018 2021E 2022E 2023E 2024E 2025E 2026E ■ Smart phones ■ Wearable devices ■ Others

Global 3D Glass Market Structure, 2017-2026E (by Application)

Source: ResearchInChina



In the past two years, the global smartphone market where 3D glass gets most used has been heading downhill. The smartphone design trend involved with curved screens, full screens, folding screens, front and rear dual 3D glass, however, will push the demand for 3D glass stably. In addition, the launch of 5G mobile phones will encourage consumers to buy new phones, which is a real boon for 3D glass market. 3D glass penetration in the global smartphone market was 17.5% in 2019 and will be 52.8% as expected by 2026.

AMOLED has been the first choice for smart watches and bracelet panels. Most of the displays are produced by G3-G5.5 AMOLED production lines which have just transferred from mobile phones where they are not competitive to wearable products. In 2019, the global AMOLED panel shipments to wearable devices were approximately 98 million pieces, with a penetration rate of 50.3%; herein, the demand for 3D glass reached virtually 105 million pieces.

The global 3D glass market is ruled by Chinese companies including Biel Crystal, BYD Electronics, Lens Technology, Dongxu Optoelectronic, Triumph Science & Technology, Holitech Technology, O-Film Tech, G-Tech Optoelectronics, RBD Technology, etc.

As it finds ever wider application, the 3D glass market enjoys a rosy outlook into which the companies made forays such as BOE, WG Tech, Jiangxi Lianchuang Electronic and the typical 3D glass producers like BYD Electronics and Lens Technology are expanding capacities vigorously.

BOE, the global leader in semiconductor display, has established a joint venture -- BJN with JNTC which acts as one of Samsung's main 3D cover glass suppliers to develop the 3D glass cover business. The move not only reduces procurement cost of the internal AMOLED production line, but also fully leverages BOE's technology resources, in a bid to form a business model of " main screen material production, display technology application, autarky & sale of products" and have strong presence in the 3D glass market.



Global and China 3D Glass Industry Report, 2020-2026 highlights the following:

- Global 3D glass industry (supply, demand, market structure, etc.);
- Chinese 3D glass market (size, structure, patents, prices, competitive pattern, drivers, etc.);
- 3D glass production materials (glass substrate, polishing materials, coating materials, ink, etc.) (market size, competitive pattern, etc.);
- 3D glass processing equipment (hot bending machine, CNC engraving machine, flat grinding machine, etc.) (market size, competition, processing technology, etc.);
- Applications (smartphone, wearable device, VR, etc.) (status quo, demand for 3D glass, etc.);
- Eighteen 3D glass manufacturers worldwide (operation, 3D glass business, etc.)

The Vertical Portal for China Business Intelligence

Table of contents

1. Overview of 3D Glass

- 1.1 Definition
- 1.2 Advantage
- 1.3 Production Process
- 1.4 Industry Chain
- 1.5 Industry Characteristics
- 1.5.1 Periodicity
- 1.5.2 Seasonality
- 1.5.3 Regionality
- 1.5.4 High Processing Barrier

2. Global 3D Glass Industry

- 2.1 Market Size
- **2.1.1 Supply**
- 2.1.2 Demand
- 2.2 Market Structure
- 2.3 Regional Structure

3. 3D Glass Industry in China

- 3.1 Market
- 3.1.1 Market Size
- 3.1.2 Market Structure
- 3.2 Patent
- 3.2.1 Total Quantity

- 3.2.2 Pattern
- 3.3 Competitive Landscape
- 3.4 Market Price
- 3.5 Market Drivers

4. 3D Glass Production Materials

- 4.1 Glass Substrate
- 4.1.1 Production Technology
- 4.1.2 Market Size
- 4.1.3 Competitive Landscape
- 4.2 Polishing Material
- 4.2.1 Market Status
- 4.2.2 Competitive Landscape
- 4.3 Other
- 4.3.1 Coating Materials
- 4.3.2 lnk

5. 3D Glass Processing Equipment

- 5.1 Hot Bending Machine
- 5.1.1 Market Size
- 5.1.2 Competition
- 5.2 CNC Engraving Machine
- 5.2.1 Market Size
- 5.2.2 Competition
- 5.2.3 Processing Technology

Table of contents

- 5.2.4 Core Technology
- 5.2.5 Development Trend
- 5.3 Flat Grinding Machine
- 5.3.1 Overview
- 5.3.2 Competitive Landscape

6. Main Applications

- 6.1 Smartphone
- 6.1.1 Market Size
- 6.1.2 Advantages of 3D Glass Phone Screen
- 6.1.3 Trends of Phone Screen
- 6.1.4 Mobile Phone Brands Adopting 3D Glass
- 6.2 Wearable Device
- 6.2.1 Market Size
- 6.2.2 3D Glass Application
- 6.3 VR
- 6.3.1 Market Size
- 6.3.2 3D Glass Application
- 6.4 Automotive Panel

7. Key 3D Glass Manufacturers

- 7.1 Lens Technology
- 7.1.1 Profile
- 7.1.2 Operation
- 7.1.3 3D Glass Business

- 7.2 CPT Technology
- 7.2.1 Profile
- 7.2.2 Operation
- 7.2.3 3D Glass Business
- 7.3 Firstar Panel Technology
- 7.3.1 Profile
- 7.3.2 Operation
- 7.3.3 3D Glass Business
- 7.4 O-Film Tech
- 7.4.1 Profile
- 7.4.2 Operation
- 7.4.3 3D Glass Business
- 7.5 Triumph Science & Technology
- 7.5.1 Profile
- 7.5.2 Operation
- 7.5.3 3D Glass Business
- 7.6 Holitech Technology
- 7.6.1 Profile
- 7.6.2 Operation
- 7.6.3 3D Glass Business
- 7.7 G-Tech Optoelectronics
- 7.7.1 Profile
- 7.7.2 Operation
- 7.7.3 3D Glass Business

Table of contents

- 7.8 Corning
- 7.8.1 Profile
- 7.8.2 Operation
- 7.8.3 3D Glass Business
- 7.9 RLD Cover Glass Technology
- 7.9.1 Profile
- 7.9.2 Operation
- 7.10 Other
- 7.10.1 Biel Crystal Manufactory
- 7.10.2 Samsung Corning Precision Glass
- 7.10.3 Wuhu Token Sciences
- 7.10.4 Truly International
- 7.10.5 Shenzhen DJN Optronics
- 7.10.6 Henan Comyoung Electronics
- 7.10.7 JANUS (Dongguan) Precision Components
- 7.10.8 BYD Electronics
- 7.10.9 Dongxu Optoelectronic

Selected Charts

Shape Difference between 2D/2.5D/3D Glass

2.5D Glass Processing Technology

3D Glass Molding Process

Comparison of 2D, 2.5D and 3D Glass Production Technologies

3D Glass Industry Chain

Competitive Landscape of 3D Glass Industry Chain

Global 3D Glass Shipments, 2016-2026E

Global 3D Glass Market Size, 2016-2026E

Global 3D Glass Demand, 2015-2026E

Global 3D Glass Market Size Structure (by Application), 2016-2026E

Global 3D Glass Production Structure (by Region), 2019

China's 3D Glass Market Size, 2016-2026E

China 3D Glass Demand, 2017-2026E

China's 3D Glass Market Size Structure (by Application), 2017-2026E

3D Glass Patent Filings in China, 2010-2026E

3D Glass Patent Filings in China, 2019

Market Prices of Different Mobile Phone Glass in China, 2019

Market Prices of 3D Mobile Phone Cover Glass in China, 2016-2026E

Global Wireless Charging Market Size, 2012-2026E

Mobile Phone Wireless Charging Growth, 2009-2019

Automotive Wireless Charging Installations in China, by July 2019

Mobile Phone Appearance Revolution by AMOLED+3D Glass

Cost Structure of 3D Glass

Cost Structure of Raw Materials for 3D Glass

Structure of Glass Substrate



Selected Charts

Floating Process for Glass Substrate

Orifice-flow Pulling-down Process of Glass Substrate

Overflow Fusion Process of Glass Substrate

Process Flow of TFT-LCD Cutting Split

Global Market Pattern of Glass Substrate (by Technology) for Cellphone Cover, 2019

Global Glass Substrate Capacity, 2013-2020

Global Glass Substrate Demand, 2014-2026E

China AMOLED Glass Substrate Capacity and Growth, 2018-2026E

China's Glass Substrate Demand, 2013-2026E

Competitive Landscape of Chinese Glass Substrate Market, 2019

Application Proportion of Rare-earth Elements in Rare-earth Polishing Materials

Chinese Demand of Rare-earth Polishing Materials, 2015-2020

Global OCA (Optically Clear Adhesive) Market Size, 2017-2026E

China's Ink Output, 2015-2026E

3D Glass Process Flow

Hot Bending Process

Global Demand for 3D Glass-use Hot Bending Machine, 2016-2026E

China's Demand for 3D Glass-use Hot Bending Machine, 2016-2026E

Global Demand for 3D Glass-use Five-axis CNC Engraving Machine, 2016-2026E

China's Demand for 3D Glass-use Five-axis CNC Engraving Machine, 2016-2026E

Processing Time of Bi-metal Die-casting

Competitive Landscape of Chinese CNC System Market, 2019

CNC Grinder Import Volume and Value in China, 2017-2019

CNC Grinder Export Volume and Value in China, 2017-2019

Average Import and Export Unit Prices of CNC Grinders in China, 2017-2019

The Vertical Portal for China Business Intelligence

Selected Charts

Optical Glass Grinding and Polishing Process

2D Glass Grinding and Polishing Machine

2.5D/3D Glass Grinding and Polishing Machine

Global Smartphone Shipments, 2012-2019

Global Smartphone Shipments, 2019-2026E

Global Smartphone Panel Maker Shipment Ranking, 2019

Global AMOLED Smartphone Panel Shipments by Proportion, 2019-2026E

Global Market Share of AMOLED Mobile Phones by Brand, 2019

Smartphone Shipments in China, 2014-2020

5G Mobile Phone Shipments as a Percentage of the Total in China, 2019-2020

Screen Size Structure (%) of Launched Mobile Phones in China, 2015-2020

Material Structure (%) of Launched Mobile Phones in China, 2015-2020

Ranking of OLED Smartphone Brands in China by Sales Volume

Assembly Rate of AMOLED Screen in Smart Phone in China, 2014-2026E

AMOLED Panel Supply for Smartphone Brands in China

Chinese Market Share of AMOLED Mobile Phones by Brand, 2019

Mobile Phone Glass Cover Market Size in China, 2011-2020

Smartphone Front and Back Cover Design Trends

Penetration Rate of 3D Cover Glass in Global Smartphone Field, 2015-2025E

Structure of Top 50 Best-selling Cellphones Using Glass Cover in China, 2019

Structure of Galaxy S7 with Metal Frame + Glass Body

Motorola's Shatter Shield Structure

Multi-camera 3D Glass Phone Models

Development Trend of Mobile Phone Cover Glass

China's Demand for Smartphone-use 3D Glass, 2016-2026E



Selected Charts

China's Demand Scale for Smartphone-use 3D Glass, 2016-2026E

Global Wearable Device Shipments, 2017-2026E

Shipment Structure (%) of Global Wearable Device Vendors, 2018-2019

China's Wearable Device Market Size, 2015-2025E

Global Wearable Device Panel Shipments and Growth Rate, 2018-2026E

Ranking of Global Wearable Device AMOLED Vendors by Shipments, 2019

Global Smart Watch AMOLED Panel Shipments, 2018-2019

Penetration Rate of AMOLED in Global Wearable Devices, 2019-2026E

Global Demand of 3D Glass for Wearable Devices, 2016-2026E

Structure of VR System

Global VR/AR Market Size, 2015-2026E

Global VR HMD (Head-mounted Display) Shipments, 2016-2026E

Market Share of VR by Brand, 2019

Financing in Global VR/AR Industry, 2017-2019

Global VR/AR Investment and Financing Scale and Structure, 2017-2019

Financing in China VR Industry, 2015-2019

Chinese VR Market Size, 2016-2026E

China's VR Device Shipments, 2018-2026E

Competitive Landscape of Major VR Products in China

Top 50 VR Companies in China, 2019

Penetration Rate of AMOLED in Headset VR Field, 2015-2026E

Automotive Glass Screen

Equity Structure of Lens Technology, 2020

Distribution of Lens Technology's Bases

Revenue and Net Income of Lens Technology, 2012-2020



Selected Charts

Revenue of Lens Technology (by Product), 2014-2019

Revenue Structure of Lens Technology (by Product), 2014-2019

Lens Technology's Revenue from Top 5 Customers and Proportions, 2015-2019

3D Curved-glass Cover Output of Lens Technology, 2016-2019

Lens Technology's Layout in Glass Cover

Construction Projects of Lens Technology

Non-public Offering Plan and Fundraising Projects of Lens Technology, 2020

Equity Structure of CPT Technology, 2020

Revenue and Net Income of CPT Technology, 2012-2020

Revenue Structure of CPT Technology (by Business), 2014-2019

Revenue Structure of CPT Technology (by Region), 2014-2019

KMTC's Revenue and Net Income, 2014-2019

3D Glass Capacity of CPT Technology, 2015-2019

Equity Structure of Firstar Panel Technology, 2020

Revenue and Net Income of Firstar Panel Technology, 2013-2020

Revenue Structure of Firstar Panel Technology (by Sales Mode), 2014-2019

Firstar Panel Technology's Layout in Display Module Products and the Tendency

Equity Structure of O-Film Tech, 2020

Main Business Distribution of O-Film Tech

Revenue and Net Income of O-Film Tech, 2012-2020

Revenue Structure of O-Film Tech (by Product), 2014-2019

Revenue Structure of O-Film Tech (by Region), 2014-2019

Touch Display Revenue and Growth Rate of O-Film Tech, 2013-2019

Equity Structure of Triumph Science & Technology, 2020

Revenue and Net Income of Triumph Science & Technology, 2013-2020

The Vertical Portal for China Business Intelligence

Selected Charts

Revenue Structure of Triumph Science & Technology (by Product), 2014-2019

Revenue Structure of Triumph Science & Technology (by Region), 2014-2019

Equity Structure of Holitech Technology, 2020

Business Layout of Holitech Technology

Development Course of Holitech Technology

Revenue and Net Income of Holitech Technology, 2012-2020

Revenue and Net Income of G-Tech Optoelectronics, 2012-2020

Revenue Structure of G-Tech Optoelectronics (by Region), 2012-2019

3D Molded Glass Capacity, Output and Output Value of G-Tech Optoelectronics, 2015-2019

3D Molded Glass Revenue and % of Total Revenue of G-Tech Optoelectronics, 2015-2019

Revenue and Net Income of Corning, 2013-2020

Revenue Structure of Corning (by Region), 2017-2019

Corning's GorillaGlass4 Drop Tests

Corning's Revenue from Gorilla Glass Products, 2014-2019

Corning? Gorilla? Glass 6 Drop tests

Revenue and Net Income of RLD, 2013-2019

Revenue Structure of RLD (by Product), 2014-2019

Revenue and Net Income of Wuhu Token Sciences, 2013-2020

Revenue and Net Income of Truly, 2014-2019

Revenue Structure of Truly (by Product), 2018-2019

Revenue Structure of Truly (by Region), 2018-2019

JANUS Intelligent Group's Layout in 3C Electronic Structures Industry Chains

Main Products of JANUS (Dongguan) Precision Components

Revenue and Net Income of JANUS (Dongguan) Precision Components, 2011-2020

Revenue from Consumer Electronics Precision Structural Parts of JANUS (Dongguan) Precision Components, 2012-2019



Selected Charts

Revenue and Net Income of BYD Electronic, 2012-2019

Revenue Structure of BYD Electronic (by Region), 2018-2019

3D Glass Production Capacity of BYD Electronic, 2017-2019

Performance Comparison between 2D Glass and 3D Glass

Glass Processing Technology

Main 3D Glass Processing Barriers

3D Glass Technical Roadmap of Major Manufacturers

Customers of Chinese Cover Glass Manufacturers

3D Glass Layout of Major Manufacturers in China, 2020

Leading 3D Glass Manufacturers and Their Capacity in China by 2020

Properties of Glass Substrate

Dimensions and Applications of Glass Substrate

Three Technologies for Manufacturing Glass Substrate

World's Leading Suppliers of Glass Cover Substrate

Production Bases and Major Customers of World's Leading Glass Substrate Manufacturers

Glass Substrate Source of Main LCD Panel Production Lines in China

Chinese Manufacturers' Layout in Glass Substrate Manufacturing Line

Major Applications of Rare-earth Polishing Powder in China, 2019

Capacity of Major Polishing Material Enterprises in China, 2019

TOP15 Ink Companies in the World, 2019

Major Companies in China

Hot Bending Process

Major Suppliers of 3D Glass Hot Bending Machine in China

Major Manufacturers of CNC Engraving Machine and Related Parts in China

Global Major CNC System Suppliers

Room 2-626, 6th Floor, No.1, Shanyuan Street, Haidian District, Beijing, 100080

Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com



Selected Charts

Product Lines of Major CNC System Manufacturers

Domestic and Foreign Major CNC Machine Tool Electric Spindle Manufacturers

Development History and Trend of CNC Engraving Machine

Top 22 Manufacturers of 3D Glass Polishing Machine in China

Global Shipments and Market Share of Smart Phone Suppliers, 2018-2019

AMOLED Penetration of Mobile Phone Brands, 2020

Smartphone Front and Back Cover Combination Design Modes

Smartphone Front and Back Cover Design Trends

Mobile Phone Brands Using 3D Glass, 2016-2020

Global Demand and Demand Scale for Smartphone-use 3D Glass, 2017-2026E

3D Glass Cover Suppliers of Major Mobile Phone Brands

Global Wearable Device Shipments (by Product), 2018-2019

China's Wearable Device Shipments (by Product), 2017-2019

Ranking of Major Wearable Device Vendors in China by Shipment, 2018-2019

CPT Technology's Revenue from Major Customers and % of Total Revenue, 2016-2019

Revenue Structure of Firstar Panel Technology (by Product), 2014-2019

Production and Sales of Triumph Science & Technology (by Product), 2019

Revenue Structure of Holitech Technology (by Product), 2018-2019

Revenue Structure of Holitech Technology (by Region), 2014-2019

Output and Sales Volume of Holitech Technology's Touch Display Products, 2015-2019

Revenue Structure of Corning (by Business), 2017-2019

Name List and Revenue Contribution of RLD's Top 5 Customers, 2016-2018

Milestones of Biel Crystal Manufactory since 2000

Cover Glass Products of Biel Crystal Manufactory

Operation of Xuhong Optoelectronic, 2018

The Vertical Portal for China Business Intelligence

How to Buy

You can place your order in the following alternative ways:

- 1.Order online at www.researchinchina.com
- 2.Fax order sheet to us at fax number: +86 10 82601570
- 3. Email your order to: report@researchinchina.com
- 4. Phone us at +86 10 82600828

Party A:		
Name:		
Address:		
Contact Person:	Tel	
E-mail:	Fax	

Party B:					
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)				
Address:	Room 2-626, 6th Floor, No.1, Shanyuan Street, Haidian District, Beijing, 100080				
Contact Person:	Liao Yan	Phone:	86-10-82600828		
E-mail:	report@researchinchina.com	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
Total		

Choose type of format

PDF (Single user license)3,000 US	SD
Hard copy 3,200 U	SD
PDF (Enterprisewide license) 4,500 US	SD

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





RICDB service

About ResearchInChina

ResearchInChina (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

For any problems, please contact our service team at: