



Index

ntroduction	3
Part I: General information	4
Part II: Analysis of main patent filers	7
Part III: Analysis of key technical areas	9
Conclusion	12

Introduction

In 2022, the global innovation capability remained at a high level, effectively promoting technological innovation in various industries. Through patent analysis, we have a better understanding of the global technological innovation situation, and we can effectively reflect which fields have received more attention and which applicants are more active. Therefore, this report analyzes the general global patenting trends in 2022, and focuses on the patent development of major patent filers and key technologies.

Part 1: General information

In 2022, a total of 9,098,213 patents were published worldwide, a slight decrease compared to the number of patents published in 2021 (9,595,528). Among them, the number of invention patents is the largest, accounting for 57.34%, followed by utility models, and the number of design patents is the smallest, as shown in <u>Figure 1</u>.

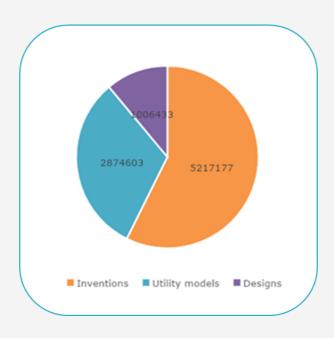


Figure 1 Types of patents published in 2022

In 2022, the countries with the largest number of patent applications are China, the United States, Japan and Korea. In particular, 5,877,020 patents were published in China last year, accounting for 64.60% of the total number of published patents, as shown in <u>Figure 2</u>.

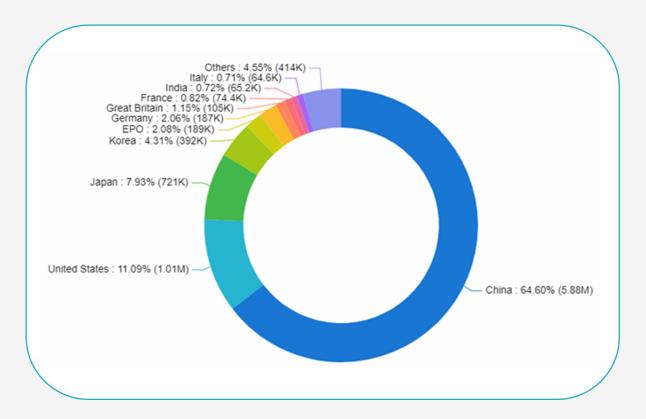


Figure 2 Top countries of origin

Correspondingly, in terms of the target countries of patent applications, the above four countries also received the highest attention, as shown in <u>Figure 3</u>. This shows that in 2022 China, the United States, Japan and South Korea are still the countries that are the most involved in the competitive patent development in the world.

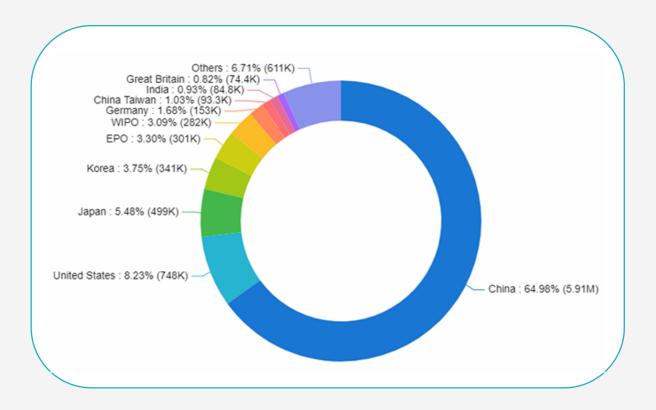


Figure 3 Top countries of target

Part 2: Analysis of main patent filers

According to statistics of the world's largest number of patent applicants in 2022, the top 50 rankings are obtained. The results are shown in <u>Table 1</u>.

It's clear that Samsung Electronics and Huawei had the largest number of patent applications in 2022, and their patent applications increased compared to the previous year. The number of patent applications and ranking of most applicants have not changed much compared to 2021.

The most interesting thing is that Haier's number of patent applications has increased significantly, and its ranking has also risen by 14, thus entering the top ten. In addition, the number of patent applications of LG ENERGY SOLUTION LTD also increased significantly, making it one of the top 50 newcomers.

Table 1 The Global Top 50 Patent Filers in 2022

Rank	Standardized Current Assignee	2022 Patents (Increase or decrease)	Ranking changes
1	SAMSUNG ELECTRONICS CO LTD	48,432 (+1,591)	_
2	HUAWEI TECH CO LTD	45,335 (+946)	_
3	QUALCOMM INC	27,687 (+3,771)	† 1
4	LG ELECTRONICS INC	24,340 (-2,212)	↓ -1
5	TOYOTA JIDOSHA KK	23,768 (+1,899)	† 1
6	CANON KK	20,024 (-1,904)	↓ -1
7	STATE GRID CORP OF CHINA	19,574 (-319)	† 2
8	HAIER SMART HOME CO LTD	18,027 (+5,878)	1 4
9	BOE TECH GRP CO LTD	17,295 (+143)	† 2
10	MITSUBISHI ELECTRIC CORP	17,274 (-3,476)	↓ -3
11	GUANGDONG OPPO MOBILE TELECOMM CORP LTD	17,100 (-3,612)	√ -3
12	ROBERT BOSCH GMBH	15,575 (-327)	^ 2
13	GREE ELECTRIC APPLIANCES INC OF ZHUHAI	15,366 (-2,718)	↓ -3
14	TENCENT TECH (SHENZHEN) CO LTD	15,076 (-1,306)	↓ -2
15	SAMSUNG DISPLAY CO LTD	15,019 (+1,566)	1 4

Rank	Standardized Current Assignee	2022 Patents (Increase or decrease)	Ranking changes
16	PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO LTD	14,793 (-1,383)	↓ -3
17	TAIWAN SEMICON MFG CO LTD	14,432 (+885)	1
18	TELEFON AB LM ERICSSON (PUBL)	13,617 (-610)	√ -1
19	HYUNDAI MOTOR CO LTD	13,007 (+2,119)	† 8
20	HONDA MOTOR CO LTD	12,969 (-147)	1
21	APPLE INC	12,930 (-306)	√ -1
22	IBM CORP	12,086 (-2,286)	↓ -6
23	CHINA PETROLEUM & CHEM CORP	12,011 (+1,588)	^ 6
24	SONY CORP	11,823 (-2,720)	↓ -9
25	INTEL CORP	11,362 (-15)	↓-1
26	KIA MOTORS CORP	10,595 (+1,300)	† 6
27	VIVO MOBILE COMM CO LTD	10,577 (-980)	↓ -4
28	LG ENERGY SOLUTION LTD	10,307 (+4,514)	new
29	GOOGLE LLC	10,271 (-306)	↓ -1
30	DENSO CORP	10,174 (+41)	_
31	ZHEJIANG UNIV	10,163 (+1,482)	† 4
32	BEIJING XIAOMI MOBILE SOFTWARE CO LTD	9,974 (+969)	1
33	MICROSOFT TECH LICENSING LLC	9,910 (-1,135)	↓ -8
34	ZTE CORP	9,049 (+737)	^ 4
35	SEIKO EPSON CORP	8,852 (+409)	1
36	KONINKLJIJKE PHILIPS NV	8,564 (-898)	√ -5
37	MICRON TECH INC	8,320 (+927)	^ 4
38	LG CHEM LTD	8,270 (-2,668)	↓-12
39	TSINGHUA UNIV	8,248 (-125)	↓ -2
40	NEC CORP	8,095 (-128)	↓-1
41	FUJIFILM CORP	8,033 (-673)	↓ -7
42	LG DISPLAY CO LTD	7,719 (+591)	† 2
43	BEIJING BAIDU NETCOM SCI TECH CO LTD	7,607 (+583)	^ 2
44	MIDEA GRP CO LTD	7,293 (+145)	↓ -1
45	FORD GLOBAL TECH LLC	7,041 (-146)	√ -3
46	APPL MATERIALS INC	6,989 (+1,034)	_
47	SUZHOU LANGCHAO INTELLIGENT TECH CO LTD	6,954 (+2,780)	new
48	SOUTHEAST UNIV	6,778 (+970)	new
49	SOUTH CHINA UNIV OF TECH	6,414 (-151)	new
50	KK TOSHIBA	6,399 (-378)	√ -3

(Note: The figures in brackets in the third column indicate the increase or decrease in the number of patents applied by applicants in 2021; In the fourth column, means that the ranking is rising, means that the ranking is falling, "new" means that the ranking is newly entered into the top 50, and "—" means that the ranking has not changed.)

Part 3: Analysis of key technical areas

The statistics of the top 10 IPC classification numbers in 2022 are shown in Figure 4. It shows that electronic digital data processing has received the highest attention, and the number of patent applications in this technical area has exceeded 50,0000. In addition, the testing and analysis of physical and chemical properties of materials, medical configuration, digital information transmission, semiconductor devices and other technical areas also involve a large number of patent applications. In fact, these fields have been involved in the largest number of patents in recent years.

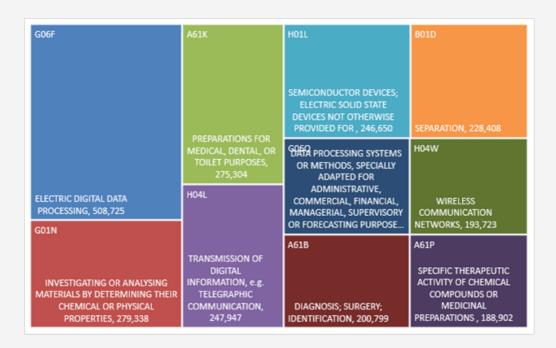


Figure 4 The top 10 IPC classification numbers

Figure 5 demonstrates that the above key technology areas have applied for patents in different countries. For example, China has the largest number of patents in the area of electronic digital data processing, followed by the United States; As another example, Korean patents are more distributed in the area of semiconductor devices. At the same time, it shows that China has the largest number of applications in the above key technology areas, mainly because the total number of patents applied for by China in 2022 is significantly far more than that of other countries.

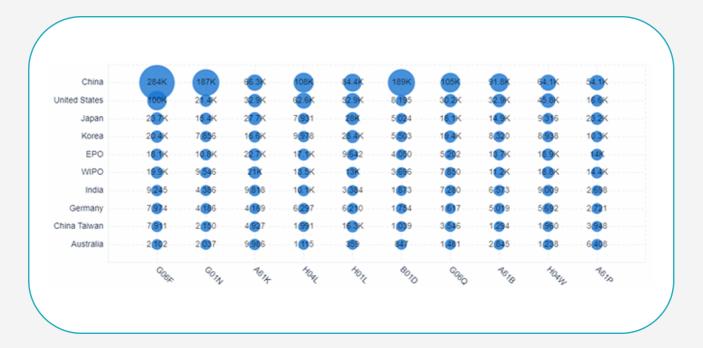


Figure 5 Geographic Distribution of Key Technologies

Figure 6 shows the patent applications of the main applicants in the above key technical areas, which can reflect the competition among the main applicants. For example, in the field of wireless communication networks and digital information transmission, Qualcomm and Huawei have distributed the majority of patents; TSMC and Samsung have most patents in the field of semiconductor devices; In addition, the top ten applicants in some key technical areas were not involved.

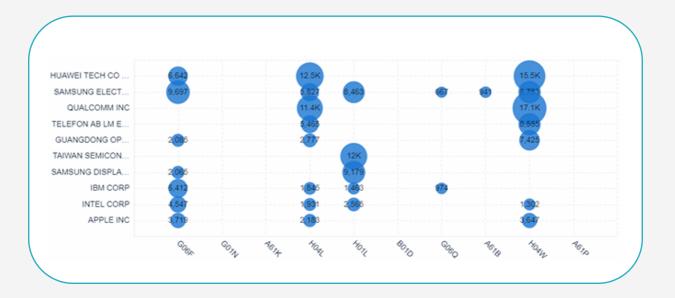


Figure 6 Top Assignees of Key Technologies

Conclusion

In general, the global patents have maintained a good development trend in the past year. The main applicants have generally maintained a high number of patent applications, and a large part of patents are concentrated in high-tech industries such as communication technology, semiconductor, medicine, etc. This shows that the world still maintains a strong technological innovation capability and the main patent filers maintain a high patent activity.

Note: All numbers used and statements made in this report are indicative and for information purposes only. No warranty or liability is given nor accepted for anything published in this report.

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