



ANALYSIS OF PATENT

DEVELOPMENT IN CHINA

JANUARY 2022

GENERAL INFORMATION

The trend of patent application and the number of active patents can reflect the quality of a country's intellectual property protection, and it is also an important indicator to measure its industrial development level.

In April 1985, China's patent law was officially implemented, marking the beginning of the development of China's patent modernization. Since then, the number of patent applications in China has gradually increased, making it the country with the largest number of patent applications in the world. In 2021, the number of patent applications in China exceeded 6 million (as shown in **Figure 1**).

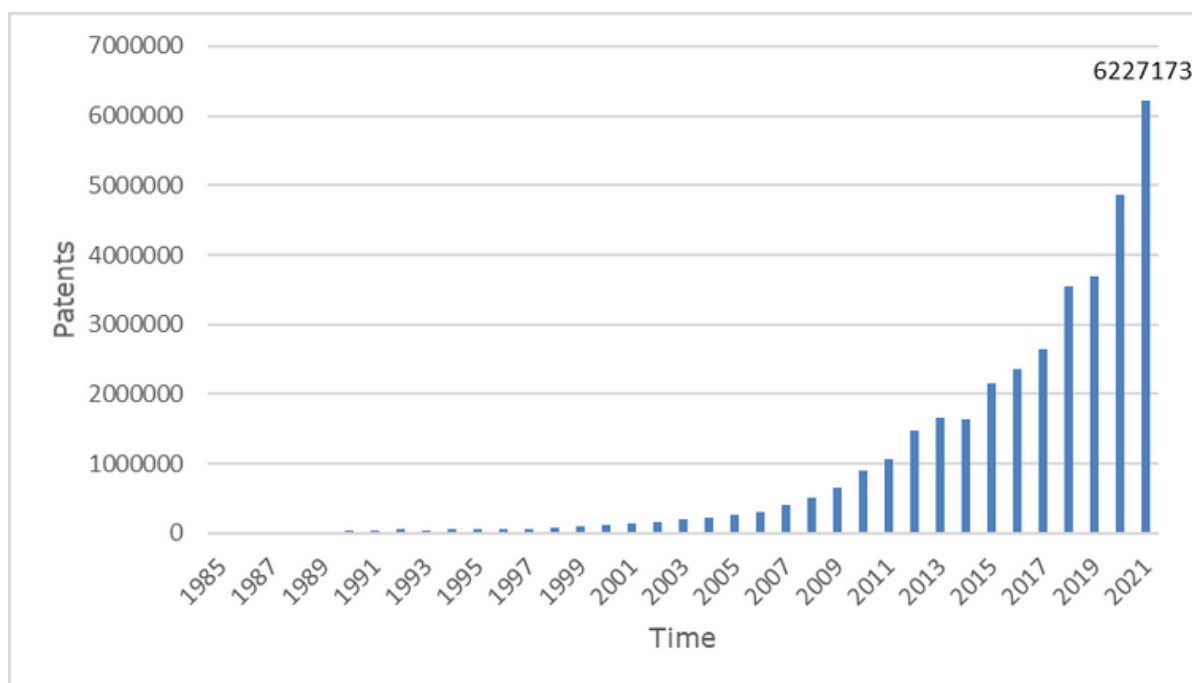
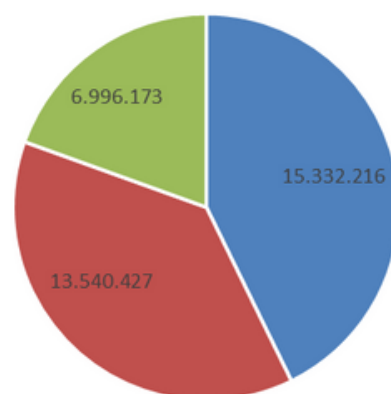


Figure 1 Patent application trend

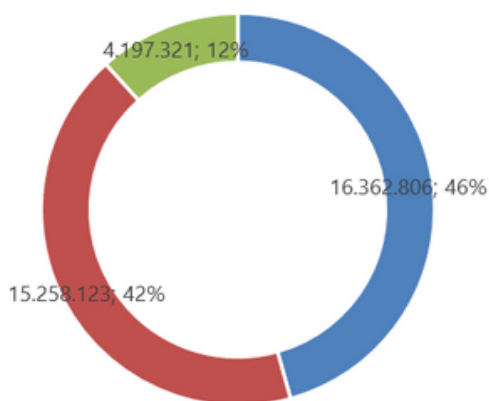
GENERAL INFORMATION

Among the patents applied in the past, the number of patent applications for utility models was the largest, reaching 15.3 million, followed by invention patents, 13.5 million, and 7.0 million designs (as shown in **Figure 2**).



■ Utility models ■ Patents ■ Designs

Figure 2 Patent type



■ Not in force ■ In force ■ Pending

Figure 3 Legal status

Among the published patents, 42% are in force, 46% are not in force, and 12% are pending (as shown in **Figure 3**).

Overall, the number of patent applications in China has maintained a rapid growth, and there are also a large number of granted and active patents, reflecting China's great progress in technology R & D and intellectual property protection in recent years.

REGIONAL DISTRIBUTION

The statistics of patent applications in different provinces and cities of a country can effectively reflect the level of technology and intellectual property development in different regions.

Among China's provinces and municipalities directly under the central government, The number of patent applications in Guangdong Province has always ranked the TOP 1, and the total number of patent applications has reached 5.7 million; Secondly, Jiangsu Province has always been the province with the largest number of patent applications in China before 2016. Although it was surpassed by Guangdong Province after 2016, the annual number of patent applications still maintained a steady growth; In addition, Beijing and Shanghai are two municipalities directly under the central government ranking in the Top 10 (as shown in **Figure 4** and **Figure 5**).

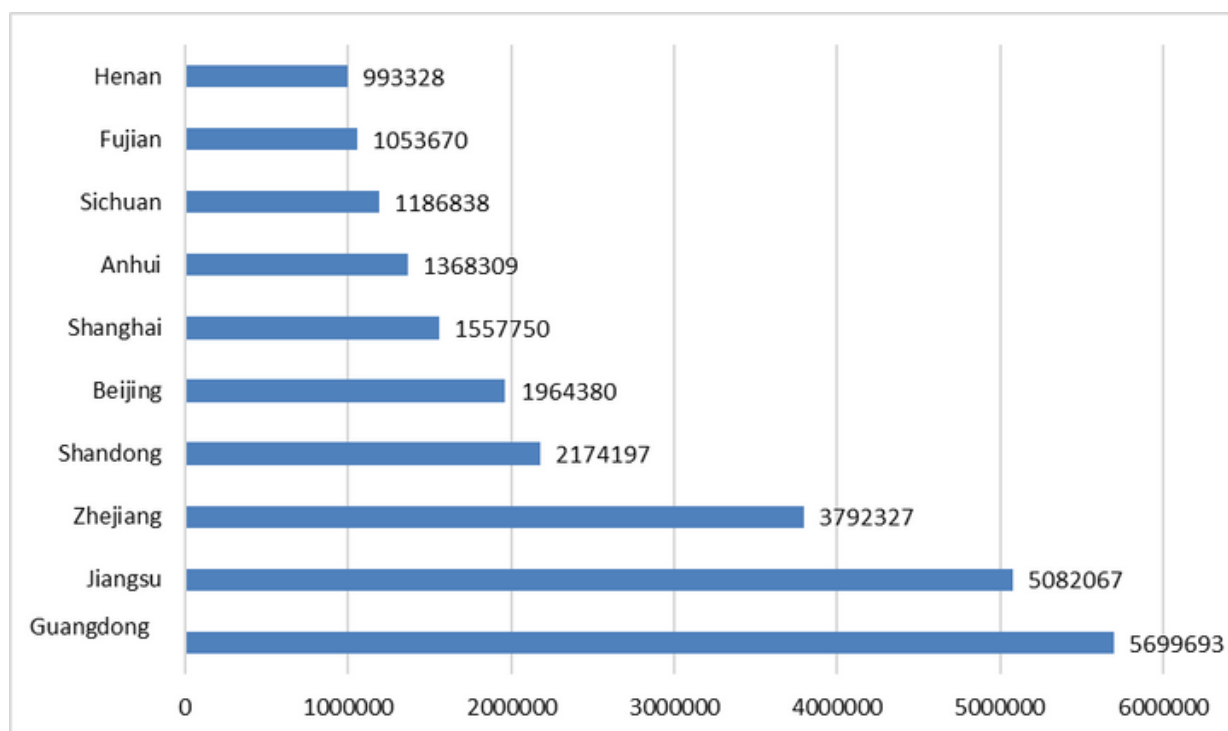


Figure 4 The top 10 provinces with patent applications

REGIONAL DISTRIBUTION

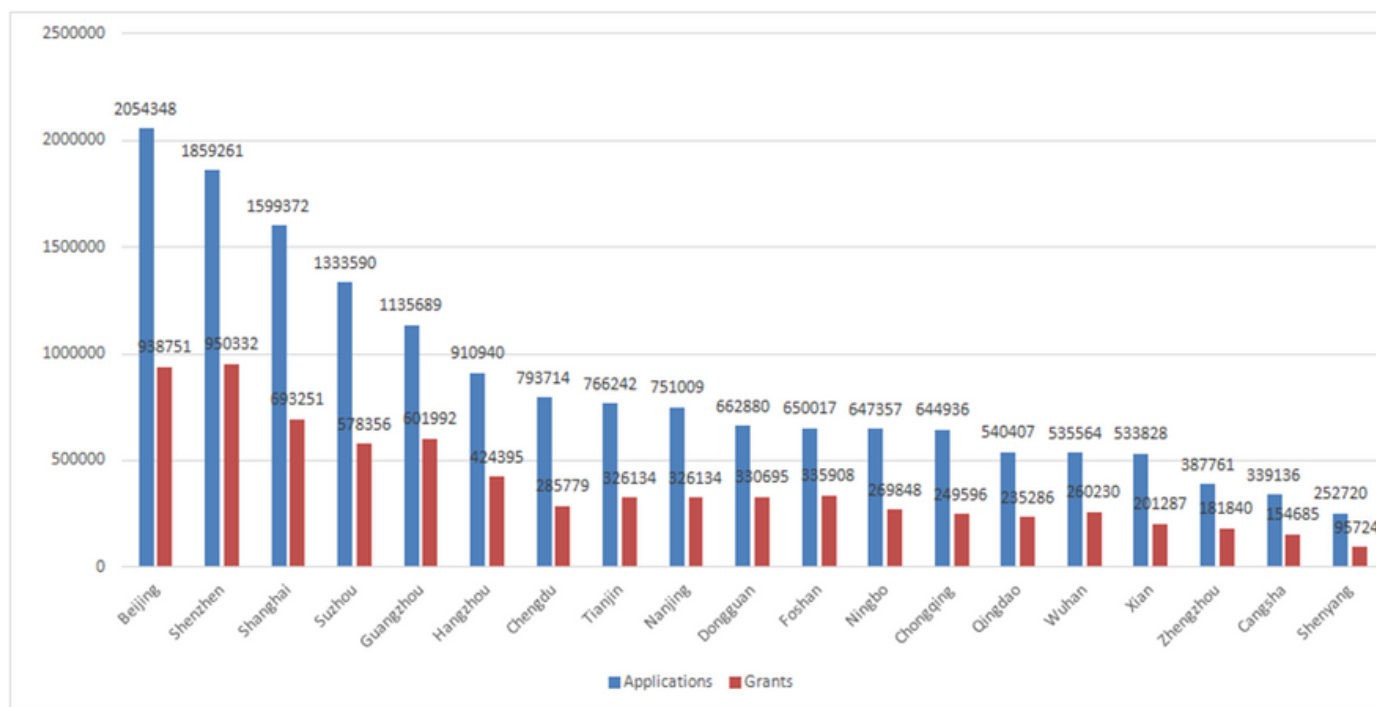


Figure 6 Patent applications and grants in different cities

STANDARDIZED CURRENT ASSIGNEES

The analysis of the standardized current assignees can reflect the R & D and technology transformation level and industry competitiveness of different enterprises and universities in a country.

According to the statistics of the standardized current assignees who hold the top 100 effective patents (as shown in attached Table 1), there are 57 enterprises and 43 universities. State Grid Corporation of China holds the largest number of active patents and is much higher than other patentees; Followed by Huawei Technology Co., Ltd. and Gree Electric Appliance INC of Zhuhai; Tsinghua University and Zhejiang University are among the top ten universities in terms of patent holdings(as shown in **Figure 7**).

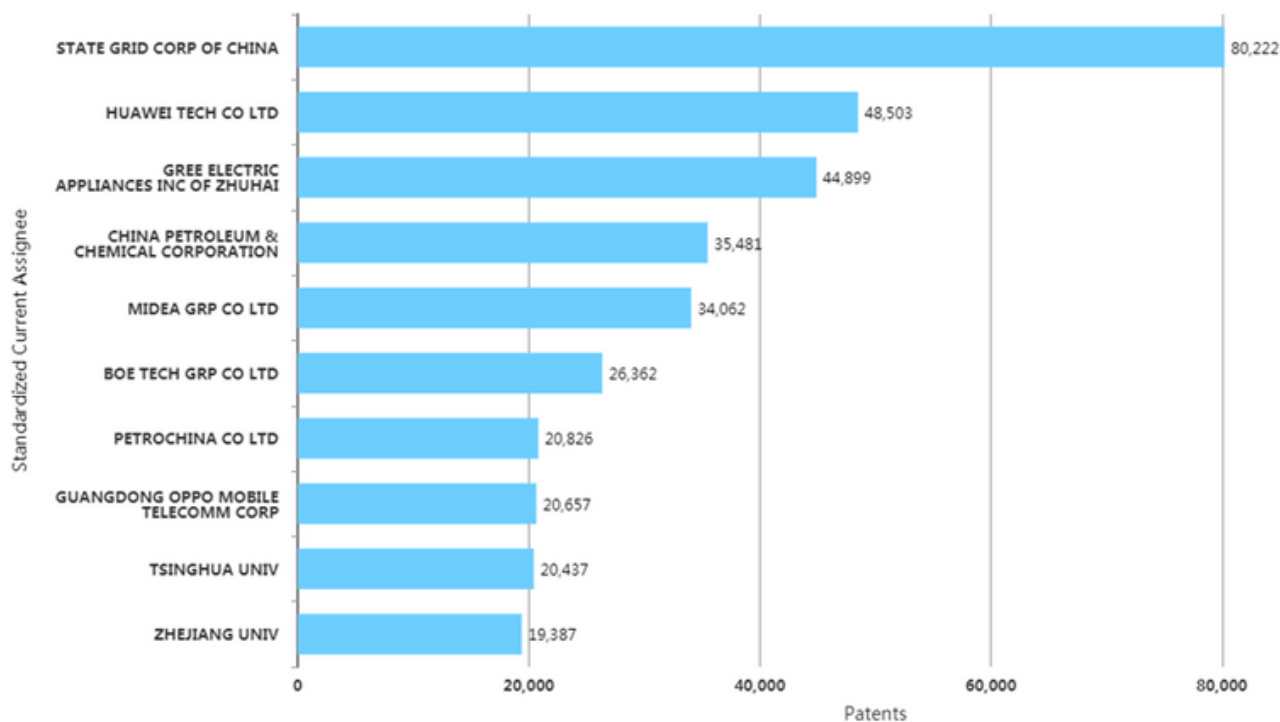


Figure 7 The top 10 standardized current assignees

IPC SUBDIVISION GROUP

The statistics of IPC classification number can reflect the subdivided fields with the largest number of patent applications in China. Among them, Section H and section G are the two categories with the largest number of patent applications in China, which is inseparable from China's rapid development in new energy and information technology in recent years (as shown in **Figure 8**).



Figure 8 The top 10 IPC classification numbers

CONCLUSION

Through the above analysis, it can be found that the number of patent applications in China has maintained a rapid growth trend, especially in coastal areas. Millions of patent applications each year herald the country's great progress in technology R & D, innovation and intellectual property protection. Therefore, more attention should be paid to the development of China's patented technology, especially in the field of new energy and information technology.

Figure 7 The top 10 standardized current assignees

THE TOP 100 STANDARDIZED CURRENT ASSIGNEES

Rank	Standardized Current Assignee	Patent num
1	STATE GRID CORP OF CHINA	80222
2	HUAWEI TECH CO LTD	48503
3	GREE ELECTRIC APPLIANCES INC OF ZHUHAI	44899
4	CHINA PETROLEUM & CHEMICAL CORPORATION	35481
5	MIDEA GRP CO LTD	34062
6	BOE TECH GRP CO LTD	26362
7	PETROCHINA CO LTD	20826
8	GUANGDONG OPPO MOBILE TELECOMM CORP	20657
9	TSINGHUA UNIV	20437
10	ZHEJIANG UNIV	19387
11	TENCENT TECH (SHENZHEN) CO LTD	18248
12	ZTE CORP	17743
13	GD MIDEA AIR-CONDITIONING EQUIP CO LTD	15005
14	SOUTH CHINA UNIV OF TECH	13940
15	HAIER SMART HOME CO LTD	12803
16	BC P INC CHINA NAT PETROLEUM CORP	12102
17	LENOVO (BEIJING) CO LTD	11936
18	ZHEJIANG GEELY HLDG GRP CO LTD	11852
19	SOUTHEAST UNIV	11525
20	BYD CO LTD	11238
21	JOYOUNG CO LTD	11053
22	ZHEJIANG SHAOXING SUPOR DOMESTIC ELECTRICAL APPLIANCE CO LTD	10866
23	HARBIN INST OF TECH	10821
24	TAIWAN SEMICON MFG CO LTD	10816
25	HUAZHONG UNIV OF SCI & TECH	10565
26	XIAN JIAOTONG UNIV	10142
27	TIANJIN UNIV	9899
28	SHANGHAI JIAO TONG UNIV	9629
29	FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MFG CO LTD	9381
30	JILIN UNIV	9314
31	CENT SOUTH UNIV	9192
32	VIVO MOBILE COMM CO LTD	9134
33	BEIJING XIAOMI MOBILE SOFTWARE CO LTD	8939
34	GUANGDONG POWER GRID CO LTD	8796
35	ZHEJIANG UNIV OF TECH	8791
36	BEIHANG UNIV	8630
37	SHANDONG UNIV	8470
38	UNIV OF ELECTRONIC SCI & TECH OF CHINA	8182
39	NANJING FORESTRY UNIV	8158

THE TOP 100 STANDARDIZED CURRENT ASSIGNEES

Part 2

40	AU OPTRONICS CORPORATION	8139
41	GREAT WALL MOTOR CO LTD	8043
42	IND TECH RES INST	7961
43	DALIAN UNIV OF TECH	7581
44	CHINA MOBILE COMM GRP CO LTD	7565
45	XIDIAN UNIV	7546
46	SEMICON MFG INT (SHANGHAI) CORP	7352
47	NANJING UNIV OF AERONAUTICS & ASTRONAUTICS	7181
48	DATANG MOBILE COMM EQUIP CO LTD	7148
49	CHERY AUTOMOBILE CO LTD	7104
50	JIANGNAN UNIV	6850
51	WUHAN UNIV	6766
52	SICHUAN UNIV	6674
53	BAIDU ONLINE NETWORK TECH (BEIJING) CO LTD	6639
54	BEIJING INST OF TECH	6544
55	NINGBO FOTILE KITCHEN WARE CO LTD	6532
56	BAW	6448
57	CHINA ELECTRIC POWER RES INST	6442
58	BEIJING UNIV OF TECH	6351
59	AUX AIR CONDITIONING LTD BY SHARE LTD	6346
60	RES INST OF PETROLEUM PROCESSING SINOPEC	6255
61	GUANGZHOU SHIYUAN ELECTRONICS CO LTD	6142
62	TONGJI UNIV	6129
63	KUNMING UNIV OF SCI & TECH	6046
64	QINGDAO HAIER AIR CONDITIONER GENERAL CORP LTD	6000
65	CHONGQING CHANGAN AUTOMOBILE CO LTD	5747
66	GUANGDONG UNIV OF TECH	5710
67	WEICHAI POWER CO LTD	5679
68	HOHAI UNIV	5623
69	JIANGSU ELECTRIC POWER CO	5561
70	NORTHEASTERN UNIV	5501
71	TCL CHINA STAR OPTOELECTRONICS TECH CO LTD	5472
72	CHONGQING UNIV	5418
73	NEW H3C TECH CO LTD	5416
74	CHINA FIRST AUTOMOBILE	5230
75	SOUTHWEST JIAOTONG UNIV	5215
76	BEIJING QIYI CENTURY SCI & TECH CO LTD	5206
77	JIANGSU UNIV	5189
78	WUHAN UNIV OF TECH	5166
79	FUZHOU UNIV	5138
80	NAT UNIV OF DEFENSE TECH	5053
81	ZHEJIANG GEELY AUTOMOBILE RES INST CO LTD	4991

THE TOP 100 STANDARDIZED CURRENT ASSIGNEES

Part 3

82	CHINA UNIV OF MINING & TECH	4929
83	NINGBO AUX ELECTRIC	4918
84	BEIJING QIHOO TECH CO LTD	4904
85	UNIV OF SCI & TECH BEIJING	4887
86	CHINA NAT OFFSHORE OIL CORP	4858
87	SHANGHAI MUNICIPAL ELECTRIC POWER CO	4835
88	HEFEI UNIV OF TECH	4812
89	NORTHWESTERN POLYTECHNICAL UNIV	4800
90	CITIC DICASTAL	4786
91	HARBIN ENG UNIV	4750
92	FUSHUN RES INST OF PETROLEUM & PETROCHEMICALS SINOPEC CORP	4739
93	CHINA GUANGDONG NUCLEAR POWER HLDG	4731
94	GAC GROUP	4630
95	CHINA CONSTR EIGHT ENG DIV CORP LTD	4621
96	SHANDONG UNIV OF SCI & TECH	4613
97	ACER INC	4612
98	PEKING UNIV	4593
99	SOOCHOW UNIV (SUZHOU)	4592
100	ANHUI JIANGHUAI AUTOMOBILE GRP CORP LTD	4554