

Companies Holding Most Nanotechnology Patents at USPTO in 2019

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In 2019, companies specializing in the production of electronic devices and computer hardware held the largest number of nanotechnology patents filed at the United States Patent and Trademark Office (USPTO).

According to the statistical data gathered by StatNano from the Orbit patent database throughout 2019, a total of 21,406 nanotechnology patents were filed at the [United States](#) Patent and Trademark Office (USPTO), which shows an increase of 8% compared to the previous year. Of those patents, 9,515 were granted patents, and 11,891 were published patent applications.

The USPTO is considered as one of the most prestigious patent offices worldwide, bringing it to the center of the attention of a vast majority of companies competing in the global arena; thus, monitoring the patents of this pioneering patent office can provide valuable insights into the various fields of science and technology including nanotechnology.

As reported by StatNano, reviewing the patent assignees of both granted patents and published patent applications showed that, just like last year, International Business Machines Corporation (IBM) hung onto its place as the 1st in the world with 790 nanotechnology patents at the USPTO. This [USA](#)-based multinational technology company is a leading provider of computer hardware, middleware, and software, which also offers hosting and consulting services in the areas ranging from mainframe computers to nanotechnology. Samsung Electronics Co., the 2nd company on the list of 2018, also maintained its spot in 2019. The company is a Suwon-based spin-off from the Samsung Group, specializing in digital media, semiconductor, telecommunication network, and LCD digital appliances.

Intel Corporation, an American multinational technology company manufacturing computer hardware including motherboard chipsets, microprocessors, modems, mobile phones, central processing units, and integrated graphics processing units, etc., leaped 4 places compared to

2018 and scored the 3rd position on the list in 2019, which had been taken by Samsung Display Co., in the previous year. The company tumbled to the 6th spot in 2019.

The table below illustrates the top 20 patent assignees holding the largest number of granted patents and published patent applications relating to nanotechnology issued by the USPTO in 2019. The share of nanotechnology patents in the total patents filed by each patent holder can also be seen in the table, which indicates that around 97% of the patents issued by Nanotek Instruments, Inc., were in the field of nanotechnology, while this index was under 45 percent for the other 19 companies on the list.

Table 1. The USPTO's top 20 nanotechnology patent assignees in 2019

Rank	Patent Assignee	No. of Nanotechnology Patents	No. of Patents in All Fields of Science and Technology	Share of Nanotechnology Patents in Total Patents
1	INTERNATIONAL BUSINESS MACHINES CORPORATION	790	17531	4.5%
2	SAMSUNG ELECTRONICS	515	13031	4.0%
3	INTEL CORPORATION	361	8297	4.4%
4	BOE TECHNOLOGY GROUP	305	4635	6.6%
5	TAIWAN SEMICONDUCTOR MANUFACTURING	285	4984	5.7%
6	SAMSUNG DISPLAY	260	3870	6.7%
7	THE REGENTS OF THE UNIVERSITY OF CALIFORNIA	258	1635	15.8%
8	THE GOVERNMENT OF THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE	206	1903	10.8%
9	HON HAI PRECISION INDUSTRY	196	690	28.4%
10	TSINGHUA UNIVERSITY	186	422	44.1%
11	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	176	935	18.8%
12	LG CHEM	172	1705	10.1%
13	3M INNOVATIVE PROPERTIES COMPANY	158	1411	11.2%
14	SAUDI ARABIAN OIL COMPANY	135	1243	10.9%
15	NANOTEK INSTRUMENTS	134	138	97.1%
15	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	126	868	14.5%

17	KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS	120	481	24.9%
18	GLOBALFOUNDRIES	112	1004	11.2%
19	THE BOEING COMPANY	105	2598	4.0%
20	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	98	772	12.7%

As shown in Figure 1, among USPTO’s top nanotechnology patent assignees, Intel Corporation had the largest growth (~87 percent) in the number of its nanotechnology patents in 2019 in comparison to 2018, resulting in the company ascending to the 3rd place in the ranking. On the other hand, IBM experienced around a 10 percent decline in the number of its total patents in 2019, yet it was productive enough to have a 2 percent growth in the number of its nanotechnology patent, highlighting the importance and priority of this field among others.



Figure 1. The top 20 patent holders’ percentage of growth in the number of their nanotechnology patents (blue bars) and total patents (orange bars) issued by the USPTO in 2019 compared to 2018.

Figure 2 indicates the number of nanotechnology patents (as the sum of granted patents and published patent applications) of the USPTO’s top 3 nanotechnology patents assignees of 2019 – IBM, Samsung Electronics, and Intel – over the past 10 years. Clearly, Intel Corporation has been closely following its rival, Samsung Electronics Co., since 2017, and given the increase in the number of its nanotechnology patents in 2019, it can be inferred that the company has placed a high priority on this emerging field and is implementing a meticulously devised development plan, which can turn it into a strong competitor for the other two giants, but which company will top the list in 2020 remains to be seen.



Figure 2. The number of nanotechnology patents of the USPTO’s top 3 nanotechnology patent holders of 2019 (IBM, Samsung Electronics, and Intel) during the past 10 years.

