

Top Assignees in Publishing Nanotechnology Patents at the USPTO in 2023

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According to a report by StatNano in 2023, companies operating in the semiconductor, electronics, and computer hardware industries filed the largest number of patent applications in the field of nanotechnology at the United States Patent and Trademark Office (USPTO).

The statistical analysis performed on the Orbit database in 2023 shows that the number of 15,566 published patent applications in the field of nanotechnology have been published at the [United States](#) Patent and Trademark Office (USPTO), which represents an increase of around 3.84% compared to the previous year. USPTO is one of the most important patent registration centers, where a significant portion of inventions are published. An analysis of the patent assignees based on the published patent applications shows that in 2023, [Taiwan](#) Semiconductor Manufacturing Company (TSMC) was able to publish the highest number of nanotechnology inventions at the USPTO, ranking first in this regard. This Taiwanese multinational company operates in the semiconductor industry and is one of the largest dedicated semiconductor integrated circuit foundries in the world, founded in 1987. Its headquarters are located in the Hsinchu Science Park in [Taiwan](#). This company is the manufacturer of many of the world's semiconductor and silicon products, to the extent that most non-Intel chips in the world, including those from AMD and Nvidia, are produced in its factories. In 2023, this company ranked 44th on the Forbes Global 2000 list of the world's best public companies.

The second rank is held by the Korean company Samsung Electronics. Samsung Electronics is a subsidiary of the Samsung Group, operating in various fields of electronics and information technology including digital media, telecommunications networks, home appliances, and semiconductors. This company is the world's largest manufacturer of smartphones and televisions. The third rank in this ranking belongs to International Business Machines Corporation (IBM). This company operates in the technology field, including software and hardware, and its headquarters are located in Armonk, [United States](#).

The top 20 assignees in publishing nanotechnology patent applications at the USPTO in 2023 are shown in the following table. The table also shows the share of nanotechnology patents out of the total published patents for each assignee. Out of these 20 top assignees, 8 are American and 4 are from [South Korea](#). [China](#), [Japan](#), and [Saudi Arabia](#) each have 2 assignees, while [Taiwan](#) and [France](#) have 1 assignee on this list. Additionally, 5 universities are named on the list. As shown in Table 1, approximately 52% of the published patents by Imam Abdulrahman Bin Faisal University were in the field of nanotechnology, and this indicator was below 25% for the other 19 assignees.

Top Assignees for Nanotechnology Published Patent Applications at the USPTO in 2023

Rank	Assignee	Number of nanotechnology published patent applications	Number of total patent applications	Share of nanotechnology patents in total published patents (%)
1	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	718	4997	14.37%
2	SAMSUNG ELECTRONICS CO., LTD.	461	9346	4.93%
3	INTERNATIONAL BUSINESS MACHINES CORPORATION	330	3505	9.42%
4	SAMSUNG DISPLAY CO., LTD.	260	3470	7.49%
5	INTEL CORPORATION	255	2415	10.56%
6	THE REGENTS OF THE UNIVERSITY OF CALIFORNIA	176	952	18.49%
7	APPLIED MATERIALS, INC.	121	1090	11.10%
8	SAUDI ARABIAN OIL COMPANY	118	1030	11.46%
9	BOE TECHNOLOGY GROUP CO., LTD.	84	1450	5.79%
10	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	73	383	19.06%
11	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	71	449	15.81%
12	LG ENERGY SOLUTION, LTD.	70	1393	5.03%
13	BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM	69	380	18.16%
14	IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY	59	114	51.75%
15	SEMICONDUCTOR ENERGY LABORATORY CO., LTD.	57	611	9.33%
15	GOOGLE LLC	57	2173	2.62%
17	3M INNOVATIVE PROPERTIES COMPANY	57	640	8.91%
18	TOKYO ELECTRON LIMITED	56	694	8.07%

19	CHANGXIN MEMORY TECHNOLOGIES, INC.	53	1086	4.88%
20	KOREA UNIVERSITY RESEARCH AND BUSINESS FOUNDATION	51	210	24.29%