Nanotechnology Patents of 2018 at the USPTO and EPO through the Lens of Statistics

2019-01-12

According to StatNano, a total of 13,046 published patent applications related to nanotechnology were filed at the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO) in 2018, with the United States and East Asian countries having the greatest shares of the total patent applications.

The comprehensive statistical database portal of StatNano, which has been extracting the data and statistics related to nanotechnology using scientific methodologies by searching the appropriate terms in reliable sources since 2010, has recently turned to one of the most useful references of researchers and policymakers around the world.

According to the ISO/TS 18110 standard, a patent is considered as a nanotechnology patent only if it includes at least one claim related to nanotechnology, or is registered with an IPC classification code related to nanotechnology. Based on this definition, a total of 13,046 nanotechnology published patent applications were filed at the USPTO and EPO in 2018; 11,280 of which were issued at the USPTO, and the rest at the EPO.

In 2018, the share of nanotechnology patents in the total patents filed at these two patent offices was relatively small, in so far as it reached 2.5 to 3% despite its slight growth during recent years, while the share of nanotechnology articles was around 10%. These statistics suggest that a significant proportion of scientific achievements in the field of nanotechnology still remains at the level of the publication of scientific articles and does not make it to the stage of innovation and technology.

The following table lists the top 25 countries in filling nanotechnology patents in 2018, together with the share of nanotechnology patents in their total patents.

Rank	Country	Nano published applications (USPTO)	Share (%) of USPTO	Nano published applications (EPO)	Share of nano in total (%)
1	USA	5,646	50.1	311	3.1
2	South Korea	1,004	8.9	247	4.3
3	China	913	8.1	169	3.9
4	Japan	792	7.0	327	1.4
5	Taiwan	532	4.7	19	4.0
6	Germany	424	3.8	153	1.9
7	France	295	2.6	106	3.5
8	UK	224	2.0	26	3.1
9	Canada	194	1.7	13	3.1
10	Saudi Arabia	158	1.4	0	17.8
11	Switzerland	140	1.2	64	2.6
12	Netherlands	115	1.0	31	2.3
13	Singapore	85	0.8	7	4.7
14	Belgium	82	0.7	44	5.5
15	Finland	71	0.6	14	3.9
16	Italy	71	0.6	28	2.1
17	India	66	0.6	5	4.0
18	Australia	60	0.5	1	3.0
19	Sweden	52	0.5	7	1.2
20	Spain	46	0.4	61	5.3
21	Iran	42	0.4	0	26.8
22	Luxembourg	32	0.3	2	4.9
23	Denmark	30	0.3	10	2.0
24	Turkey	29	0.3	16	8.7
25	Austria	28	0.2	21	2.2
26	Total (World)	11280	100	1766	2.8

Accordingly, more than half of the nanotechnology published patent applications at the USPTO belong to the United States, while the country takes the second spot at the EPO, following Japan that holds the first place. Chasing the United States, the next spots of the list are taken by the East Asian countries, indicating their particular attention to the thriving nanotechnology market in the United States and Europe.

Saudi Arabia's nanotechnology patents, ranking 10th at the USPTO, interestingly account for around 18% of the country's total patent applications. Amongst the top 5 countries in terms

of nanoscience production, are India with 66 patent applications in the 17th spot, and Iran with 42 nanotecnology patent applications in the 21st place of the USPTO's top nanotechnology patent holders. In view of the fact that these two countries are at the forefront of knowledge production in the field of nanoscience, particularly in case of Iran, whose nanotechnology patents comprise approximately 27% of the country's total patent applications at the USPTO in 2018, in spite of their outstanding interest in this field, these pioneering countries have not been as successful in nanotechnology innovations and inventions as they are in nanoscience creation.