

Table SINV-82

Citation of S&E articles in USPTO utility patents, by cited field, cited author country, and patent sector: 2013–20

(Number)

Field, country, and sector	2013	2014	2015	2016	2017	2018	2019	2020
All fields, all sectors	623,841	691,285	681,731	662,071	676,063	639,413	721,579	695,833
Foreign	320,953	361,726	362,248	354,143	365,413	348,842	390,667	379,447
Unknown country	3,368	3,447	3,136	2,891	2,813	2,573	2,389	2,083
United States	299,520	326,112	316,348	305,037	307,837	287,999	328,523	314,303
Academic	193,502	210,438	207,402	202,694	204,551	193,482	222,375	214,305
Business	56,951	62,571	57,851	53,991	54,777	49,267	54,272	50,410
Federal government	12,023	12,759	12,434	11,918	11,904	11,597	12,651	12,350
FFRDCs	5,999	6,817	6,326	6,335	6,391	5,933	6,845	6,274
Nonprofit	16,207	17,612	17,887	16,683	16,802	15,776	18,751	17,961
State and local government	285	300	249	298	227	221	275	252
Joint and unknown sectors	14,553	15,614	14,198	13,118	13,186	11,723	13,355	12,751
Agricultural sciences	3,262	3,571	3,306	3,162	3,246	3,241	3,848	4,058
Foreign	1,912	2,155	2,157	2,108	2,176	2,159	2,717	2,910
Unknown country	13	9	10	6	6	6	9	7
United States	1,337	1,407	1,139	1,048	1,064	1,076	1,122	1,142
Academic	911	996	809	704	749	759	801	819
Business	153	132	113	115	107	118	106	119
Federal government	185	179	143	164	144	148	149	151
FFRDCs	3	4	6	9	11	5	12	5
Nonprofit	5	6	6	4	5	4	5	4
State and local government	0	1	1	1	0	0	1	2
Joint and unknown sectors	79	88	59	52	48	42	48	43
Astronomy and astrophysics	86	115	96	159	108	96	88	122
Foreign	63	77	62	110	77	57	50	53
Unknown country	0	0	0	0	0	0	0	0
United States	22	37	34	49	31	39	38	69
Academic	11	22	20	32	14	24	20	40
Business	3	3	4	4	1	4	2	4
Federal government	1	5	4	7	8	6	9	9
FFRDCs	5	5	4	4	5	4	4	12
Nonprofit	2	2	1	0	2	1	1	4
State and local government	0	0	0	0	0	0	0	0
Joint and unknown sectors	0	0	1	3	2	0	1	0
Biological and biomedical sciences	165,743	179,638	180,692	170,841	176,542	173,297	197,223	196,939
Foreign	81,005	88,941	88,881	83,814	86,875	85,664	96,410	95,828
Unknown country	772	772	720	683	647	643	579	486

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Field, country, and sector	2013	2014	2015	2016	2017	2018	2019	2020
United States	83,966	89,925	91,091	86,344	89,021	86,990	100,234	100,625
Academic	53,295	56,695	57,724	54,903	56,743	56,100	65,474	66,356
Business	14,754	15,979	15,974	15,034	15,656	14,208	15,737	15,150
Federal government	5,310	5,679	5,700	5,371	5,353	5,221	5,735	5,827
FFRDCs	983	1,112	989	970	924	953	1,141	1,066
Nonprofit	5,755	6,291	6,643	6,485	6,839	7,120	8,537	8,719
State and local government	84	95	92	90	76	96	111	106
Joint and unknown sectors	3,784	4,074	3,968	3,490	3,429	3,290	3,498	3,402
Chemistry	55,879	58,294	58,221	56,560	57,074	54,434	59,085	60,033
Foreign	32,007	33,912	34,254	33,023	33,658	32,543	35,590	36,362
Unknown country	83	63	38	42	40	45	46	43
United States	23,789	24,320	23,930	23,495	23,377	21,846	23,449	23,629
Academic	17,534	17,934	17,603	17,574	17,411	16,590	17,762	17,970
Business	3,382	3,524	3,409	3,292	3,073	2,593	2,687	2,653
Federal government	613	575	571	530	583	590	532	561
FFRDCs	841	857	817	798	842	824	1,045	1,083
Nonprofit	832	902	1,013	753	899	738	827	750
State and local government	7	9	5	14	8	6	9	14
Joint and unknown sectors	581	519	512	533	560	504	588	598
Computer and information sciences	80,173	90,345	86,354	85,850	87,897	90,400	100,567	95,529
Foreign	39,170	44,294	43,626	44,235	48,044	50,350	57,000	56,415
Unknown country	643	718	618	571	473	401	363	308
United States	40,360	45,334	42,110	41,044	39,379	39,649	43,204	38,806
Academic	25,673	29,608	28,115	27,560	26,928	27,417	29,505	26,375
Business	11,428	12,394	11,065	10,733	9,991	9,830	10,919	9,951
Federal government	323	341	318	333	347	432	417	284
FFRDCs	451	494	484	487	422	410	575	501
Nonprofit	963	1,001	819	712	531	406	466	405
State and local government	2	1	0	1	0	0	0	0
Joint and unknown sectors	1,520	1,495	1,308	1,218	1,160	1,154	1,322	1,290
Engineering	66,662	74,534	71,915	71,997	74,915	69,128	81,911	79,314
Foreign	34,068	37,918	37,680	38,077	40,102	37,646	45,251	45,109
Unknown country	346	369	305	315	284	254	247	219
United States	32,248	36,247	33,930	33,605	34,529	31,228	36,413	33,986
Academic	20,458	23,226	22,823	23,001	23,608	21,584	25,852	24,812
Business	7,822	8,533	6,970	6,438	6,785	5,871	6,240	5,158

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Field, country, and sector	2013	2014	2015	2016	2017	2018	2019	2020
Federal government	778	854	848	777	877	864	951	902
FFRDCs	1,174	1,365	1,200	1,386	1,343	1,258	1,493	1,377
Nonprofit	824	937	807	723	655	524	567	492
State and local government	17	26	21	33	17	13	17	17
Joint and unknown sectors	1,175	1,305	1,261	1,246	1,244	1,115	1,292	1,228
Geosciences, atmospheric, and ocean sciences	2,835	3,414	3,151	2,837	3,562	3,180	4,583	3,775
Foreign	1,348	1,688	1,528	1,365	1,760	1,595	2,267	1,845
Unknown country	78	92	68	72	68	51	78	45
United States	1,409	1,634	1,555	1,400	1,734	1,534	2,238	1,885
Academic	606	698	735	624	766	618	826	778
Business	471	566	502	433	597	585	945	703
Federal government	95	90	69	100	89	66	90	84
FFRDCs	69	77	60	73	72	46	64	47
Nonprofit	54	63	67	39	70	94	109	85
State and local government	2	0	2	3	0	0	2	2
Joint and unknown sectors	112	141	120	127	141	125	203	186
Health sciences	159,640	173,813	171,100	165,970	171,075	157,953	179,569	172,834
Foreign	79,312	85,860	84,854	82,850	85,634	81,136	91,566	89,290
Unknown country	1,245	1,233	1,201	1,044	1,129	1,050	960	886
United States	79,082	86,720	85,045	82,076	84,312	75,767	87,043	82,659
Academic	51,535	55,928	55,688	54,616	55,789	50,608	58,506	55,935
Business	10,134	11,985	11,293	10,451	11,489	10,226	11,039	10,440
Federal government	3,575	3,822	3,685	3,574	3,458	3,295	3,750	3,606
FFRDCs	245	215	259	243	263	199	221	206
Nonprofit	7,343	7,945	8,139	7,612	7,492	6,599	7,855	7,170
State and local government	166	163	124	150	123	102	133	106
Joint and unknown sectors	6,084	6,662	5,858	5,430	5,698	4,738	5,538	5,197
Materials science	10,022	11,293	11,517	10,572	11,447	10,519	12,245	11,090
Foreign	6,143	7,156	7,583	7,122	7,654	7,207	8,303	7,631
Unknown country	22	22	22	15	15	10	10	17
United States	3,857	4,115	3,912	3,435	3,778	3,303	3,932	3,442
Academic	2,467	2,666	2,608	2,369	2,626	2,269	2,799	2,439
Business	669	617	577	423	486	399	414	371
Federal government	204	241	231	200	166	142	172	143
FFRDCs	313	420	366	315	364	355	419	362
Nonprofit	47	47	44	41	41	25	31	29

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State and local government	0	0	0	0	0	0	0	0
Joint and unknown sectors	156	124	87	87	95	112	97	99
Mathematics and statistics	1,086	1,113	970	963	1,003	1,278	1,517	1,401
Foreign	532	578	478	485	556	686	789	703
Unknown country	4	3	2	2	9	0	1	2
United States	550	532	490	476	438	592	728	697
Academic	413	410	379	359	351	467	578	547
Business	68	55	48	41	32	45	54	71
Federal government	14	15	11	19	12	14	9	12
FFRDCs	26	23	9	13	20	37	44	39
Nonprofit	11	11	13	12	8	19	26	14
State and local government	0	0	0	0	0	0	0	0
Joint and unknown sectors	19	19	30	32	15	9	17	14
Natural resources and conservation	1,312	1,414	1,361	1,492	1,504	1,547	1,707	1,944
Foreign	763	834	829	958	944	968	1,093	1,250
Unknown country	4	7	4	3	3	1	2	4
United States	544	573	527	531	557	579	612	690
Academic	353	371	347	363	379	360	407	452
Business	83	73	69	56	61	63	63	77
Federal government	46	63	53	50	55	56	68	78
FFRDCs	30	32	29	31	26	64	39	53
Nonprofit	6	1	2	2	7	7	8	8
State and local government	2	4	2	3	2	2	1	2
Joint and unknown sectors	25	29	26	26	26	26	25	21
Physics	72,260	88,176	87,750	85,951	81,770	68,491	72,047	61,272
Foreign	42,714	56,189	58,167	57,619	55,522	46,415	46,312	38,486
Unknown country	140	141	132	113	115	92	78	56
United States	29,407	31,845	29,451	28,219	26,133	21,983	25,656	22,730
Academic	18,338	19,766	18,628	18,420	16,873	14,297	17,225	15,044
Business	7,181	7,703	6,807	6,043	5,495	4,478	5,051	4,714
Federal government	838	851	770	746	775	724	710	640
FFRDCs	1,853	2,212	2,096	2,002	2,093	1,773	1,782	1,518
Nonprofit	313	325	306	274	224	191	270	246
State and local government	3	1	1	2	0	1	1	1
Joint and unknown sectors	882	987	844	732	673	519	618	568
Psychology	4,191	4,895	4,787	5,139	5,282	5,239	6,346	6,701

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Field, country, and sector	2013	2014	2015	2016	2017	2018	2019	2020
Foreign	1,660	1,861	1,938	2,150	2,146	2,154	2,958	3,164
Unknown country	11	14	15	23	23	19	12	7
United States	2,520	3,020	2,835	2,966	3,113	3,065	3,376	3,530
Academic	1,574	1,818	1,703	1,898	2,022	2,104	2,253	2,389
Business	779	982	989	892	961	823	987	982
Federal government	31	31	27	38	31	34	32	47
FFRDCs	3	0	2	1	6	4	3	6
Nonprofit	30	51	16	20	24	35	32	26
State and local government	2	0	0	0	0	0	0	1
Joint and unknown sectors	101	139	98	116	69	65	69	79
Social sciences	690	670	511	578	638	610	843	821
Foreign	255	263	212	228	266	262	361	403
Unknown country	6	5	1	1	1	1	4	4
United States	429	402	298	349	371	347	478	414
Academic	333	300	222	271	292	284	367	351
Business	25	27	31	35	44	22	29	18
Federal government	11	11	3	7	5	6	28	5
FFRDCs	2	1	4	2	2	1	1	0
Nonprofit	22	31	13	5	6	11	17	10
State and local government	0	0	0	0	0	0	0	2
Joint and unknown sectors	35	31	25	28	24	23	37	27

FFRDC = federally funded research and development center; USPTO = U.S. Patent and Trademark Office.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PatentsView, USPTO, accessed June 2021; Elsevier, Scopus abstract and citation database, accessed May 2021.

Science and Engineering Indicators