

Table SPBS-21

## S&amp;E articles in chemistry, whole count, by region, country, or economy: 1996–2020

(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	71,301	71,615	72,497	72,195	73,469	74,999	80,182	81,532	86,619	96,620	99,863	103,199	104,626	109,602	111,209	119,708	124,581	131,422	137,052	144,025	145,645	148,399	157,926	165,962	178,415
North America	17,890	17,211	16,631	15,985	15,853	15,023	18,558	17,532	18,078	19,214	19,307	20,352	20,408	20,556	21,197	22,545	22,708	23,435	23,571	24,283	24,387	24,423	25,417	25,214	26,330
Canada	2,252	2,053	2,012	1,883	1,887	1,884	2,138	2,171	2,345	2,461	2,684	2,692	2,671	2,915	2,787	3,072	3,165	3,087	3,085	3,420	3,254	3,412	3,573	3,622	3,807
Greenland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Mexico	282	308	311	311	327	339	370	434	510	569	450	603	630	656	665	662	714	792	815	861	893	1,050	1,102	1,232	1,426
United States	15,671	15,132	14,595	14,055	13,937	13,117	16,367	15,241	15,629	16,632	16,555	17,484	17,505	17,409	18,138	19,262	19,282	20,017	20,150	20,570	20,777	20,547	21,361	20,964	21,732
Central America and Caribbean	101	129	147	157	138	131	127	127	156	129	119	150	163	166	138	175	194	140	168	160	152	178	167	193	202
Antigua and Barbuda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bahamas, The	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Barbados	3	3	5	3	3	1	1	2	3	3	3	2	1	0	1	2	1	2	5	1	5	4	2	3	3
Belize	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Costa Rica	13	14	10	12	19	20	20	6	9	5	4	7	12	5	9	15	12	9	22	15	19	22	22	28	25
Cuba	55	72	66	81	78	67	64	75	80	59	56	75	78	76	52	79	84	59	49	62	56	62	66	69	81
Dominica	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dominican Republic	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	0	8	4
El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	2	2
Grenada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0
Guatemala	0	1	0	2	0	1	0	0	0	0	0	1	0	0	1	0	2	0	0	0	1	1	2	2	0
Haiti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Honduras	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	5
Jamaica	8	16	13	12	10	12	14	12	7	18	9	8	10	10	8	8	11	14	11	2	6	4	13	13	16
Nicaragua	0	0	1	0	0	0	0	0	2	3	0	0	0	1	0	2	2	1	0	1	0	0	1	1	1
Panama	2	0	1	1	2	0	1	1	7	2	5	2	3	3	1	2	9	3	3	9	9	10	9	19	12
Puerto Rico	17	22	46	43	22	20	17	26	41	33	41	51	50	65	57	53	60	40	67	54	46	58	42	42	44
Saint Kitts and Nevis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Saint Lucia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saint Vincent and the Grenadines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	5	3	6	7	5	9	11	5	8	7	1	5	9	6	8	14	12	12	12	14	6	17	10	6	10
South America	1,185	1,462	1,475	1,634	2,007	1,916	2,169	2,286	2,330	2,647	2,743	2,960	3,209	3,218	3,246	3,403	3,538	3,735	3,881	3,990	4,209	4,626	4,988	5,150	6,106
Argentina	352	343	356	403	529	412	462	482	419	480	441	483	540	522	527	561	532	573	553	624	618	638	655	680	715
Bolivia	0	4	2	0	1	0	0	2	4	0	1	3	3	2	2	3	0	4	3	5	6	2	4	9	6
Brazil	534	759	791	912	1,060	1,140	1,318	1,343	1,471	1,687	1,861	1,994	2,130	2,142	2,186	2,258	2,443	2,574	2,753	2,761	2,961	3,281	3,491	3,633	4,304
Chile	182	197	191	165	197	204	220	264	216	235	236	237	227	275	261	300	296	323	304	318	398	375	468	489	552
Colombia	32	35	45	43	63	44	65	60	79	78	80	99	156	160	184	205	200	204	219	247	219	310	355	349	478
Ecuador	2	1	3	2	0	1	1	2	0	5	4	8	2	3	1	2	4	7	25	44	51	59	88	83	134
Guyana	0	0	0	0	1	3	2	2	3	12	1	1	5	2	2	1	2	1	0	0	0	0	2	0	0

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## S&amp;E articles in chemistry, whole count, by region, country, or economy: 1996–2020

(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Paraguay	1	2	1	1	4	1	1	0	0	0	0	0	0	2	3	1	1	3	2	1	3	3	3	5	6
Peru	1	2	5	8	3	4	2	12	8	22	8	8	10	6	6	8	10	9	14	22	23	32	38	48	79
Suriname	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Uruguay	17	19	20	31	32	17	16	22	26	22	29	33	50	42	32	56	40	40	47	52	48	72	67	65	71
Venezuela	120	151	122	143	175	146	155	183	180	204	167	217	204	183	155	124	132	122	96	84	52	65	68	44	47
Europe	34,906	35,300	36,028	34,904	35,369	35,953	36,504	36,996	38,409	39,017	37,886	40,219	39,960	41,136	41,387	43,060	43,822	46,207	45,821	48,091	49,095	49,151	50,617	52,547	57,178
EU-27 and UK <sup>a</sup>	27,304	27,903	28,573	27,905	27,968	28,024	28,738	29,230	30,305	31,315	31,307	33,064	32,810	33,640	33,831	35,399	36,389	38,111	37,721	39,448	40,219	40,207	41,196	42,349	46,150
UK	4,816	4,787	4,725	4,559	4,736	4,417	4,677	4,831	4,913	4,801	4,920	5,041	4,890	5,066	5,077	5,334	5,250	5,325	5,616	6,066	6,203	6,272	6,399	6,445	6,902
EU-27 <sup>b</sup>	23,240	23,896	24,661	24,109	24,042	24,384	24,875	25,373	26,458	27,581	27,436	29,163	29,101	29,819	30,029	31,397	32,532	34,348	33,717	35,184	35,874	35,817	36,756	37,849	41,293
Austria	418	588	515	515	560	588	588	704	780	705	695	755	795	878	821	815	878	962	1,021	1,048	1,035	1,162	1,081	1,231	1,285
Belgium	793	884	838	837	904	802	869	954	960	1,005	910	1,003	989	981	1,145	1,204	1,227	1,302	1,326	1,442	1,471	1,419	1,457	1,455	1,647
Bulgaria	281	266	280	242	241	215	222	242	277	265	260	312	345	283	301	318	310	348	282	295	234	279	436	367	373
Croatia	201	161	146	196	158	156	180	191	216	242	211	254	263	239	245	283	275	281	247	245	233	289	285	309	330
Cyprus	3	1	11	10	10	12	22	9	18	22	26	47	34	62	52	53	60	75	65	74	62	56	87	99	110
Czechia	684	717	780	702	760	771	808	818	907	1,110	987	1,124	1,298	1,182	1,171	1,377	1,280	1,482	1,377	1,517	1,450	1,500	1,541	1,632	1,794
Denmark	354	409	430	454	429	418	438	484	474	534	484	522	498	547	556	646	697	717	795	827	829	841	848	865	991
Estonia	43	38	45	43	30	35	47	38	50	50	62	60	61	73	80	77	95	98	115	128	107	126	102	103	132
Finland	446	428	417	443	481	472	477	432	490	475	500	558	532	556	617	555	590	643	665	762	695	732	794	836	891
France	4,277	4,380	4,561	4,533	4,313	4,342	4,357	4,494	4,507	4,684	4,772	5,184	5,212	5,170	5,169	5,335	5,498	5,761	5,680	5,866	5,997	5,924	5,811	5,955	6,307
Germany	6,809	7,227	7,298	6,856	6,679	6,528	6,416	6,638	7,008	7,192	7,247	7,554	7,535	7,924	8,001	8,261	8,669	8,960	8,824	9,303	9,254	9,395	9,619	9,794	10,325
Greece	394	341	386	357	368	456	479	466	522	526	598	660	632	636	573	568	573	598	599	634	640	641	692	664	837
Hungary	581	702	700	762	729	682	744	650	702	687	658	587	639	611	562	598	621	582	587	664	627	635	675	686	738
Ireland	166	179	195	172	156	183	218	268	265	281	293	325	383	420	529	541	513	542	507	538	538	548	593	602	695
Italy	2,660	2,475	2,658	2,659	2,665	2,871	2,939	3,158	3,229	3,223	3,062	3,396	3,315	3,375	3,277	3,466	3,496	3,857	3,890	4,125	4,286	4,215	4,506	4,781	5,512
Latvia	80	100	100	92	67	69	95	58	55	45	36	64	63	76	49	66	89	81	92	137	94	66	79	104	137
Lithuania	52	58	79	71	85	56	93	73	95	73	108	108	163	200	151	174	163	196	204	252	177	182	194	206	273
Luxembourg	1	3	5	3	5	3	2	4	3	3	9	16	18	24	18	32	39	38	45	39	53	64	62	58	66
Malta	1	3	3	0	1	2	4	2	1	2	1	1	0	0	1	1	1	2	9	14	7	13	16	9	11
Netherlands	1,238	1,254	1,236	1,201	1,233	1,286	1,238	1,294	1,334	1,392	1,308	1,299	1,291	1,442	1,499	1,505	1,482	1,645	1,558	1,582	1,765	1,638	1,737	1,894	1,980
Poland	1,550	1,547	1,662	1,644	1,705	1,689	1,827	2,102	2,143	2,192	2,347	2,384	2,342	2,283	2,172	2,338	2,694	2,895	2,699	2,953	3,360	3,342	3,436	3,440	3,963
Portugal	226	310	292	352	345	467	459	523	583	641	687	739	820	897	879	988	1,062	1,236	1,183	1,167	1,153	1,144	1,252	1,329	1,603
Romania	379	454	474	516	503	603	571	531	541	597	587	613	729	888	1,023	976	980	1,072	967	1,119	1,106	988	1,019	1,174	1,176
Slovakia	381	316	515	325	331	317	285	296	308	383	318	377	446	361	309	479	392	418	372	400	370	389	433	446	492
Slovenia	144	172	170	172	186	207	209	230	210	231	238	268	301	297	294	296	300	339	318	370	350	346	339	363	465
Spain	2,530	2,568	2,493	2,652	2,827	2,895	3,188	3,184	3,398	3,734	3,725	4,238	3,849	4,148	4,223	4,382	4,736	4,873	4,920	4,935	5,231	5,105	5,348	5,378	5,954

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(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sweden	846	864	914	839	857	902	954	893	1,029	997	1,045	1,007	942	1,012	1,053	1,087	1,115	1,258	1,314	1,332	1,388	1,418	1,440	1,521	1,746
Other Europe	8,628	8,525	8,667	8,266	8,578	9,145	9,069	9,383	9,809	9,510	8,332	9,044	8,955	9,306	9,325	9,535	9,454	10,183	10,236	11,124	11,371	11,567	12,148	13,129	14,264
Other Europe, 2020 <sup>b</sup>	13,309	13,163	13,227	12,652	13,164	13,406	13,568	13,980	14,486	14,062	13,045	13,871	13,621	14,167	14,198	14,624	14,439	15,234	15,550	16,841	17,269	17,527	18,220	19,226	20,742
Albania	5	8	4	6	9	7	7	2	1	3	1	1	1	4	8	10	9	8	8	3	15	13	8	9	11
Andorra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belarus	142	192	190	160	189	188	187	177	173	172	168	167	128	139	136	113	116	130	141	127	120	116	135	147	143
Bosnia and Herzegovina	2	2	0	0	2	0	2	5	3	5	8	11	8	12	11	17	14	18	20	14	18	33	31	36	34
Holy See (Vatican City)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	1
Iceland	10	6	11	4	6	8	13	8	7	4	11	12	20	10	15	14	18	19	25	25	23	25	35	35	39
Kosovo	0	0	0	0	0	0	0	0	0	0	0	0	8	9	16	14	16	12	9	12	16	28	32	23	33
Liechtenstein	4	8	5	6	3	6	2	5	4	3	9	4	5	8	2	4	7	7	12	9	11	12	11	8	4
Moldova	62	42	43	53	86	67	66	73	73	86	70	56	89	71	64	72	72	66	75	54	84	60	60	72	55
Monaco	4	2	4	3	3	12	4	0	4	8	1	3	1	5	10	7	2	2	2	5	4	5	5	6	8
Montenegro <sup>c</sup>	0	0	0	0	0	0	0	0	0	0	0	7	4	5	6	9	9	15	9	5	11	11	16	14	13
North Macedonia	25	38	24	35	36	54	51	52	31	31	35	56	41	33	33	34	33	25	32	36	32	27	32	47	40
Norway	267	246	281	239	247	254	196	231	275	293	299	312	271	304	297	312	337	336	357	379	383	413	442	463	574
Russia	5,526	5,344	5,483	5,096	5,294	5,763	5,562	5,662	5,564	5,287	4,183	4,543	4,425	4,590	4,493	4,712	4,277	4,740	4,795	5,437	5,735	6,022	6,290	6,646	7,100
San Marino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Serbia <sup>c</sup>	0	0	0	0	0	0	0	0	0	0	0	301	332	379	368	398	472	470	454	454	464	459	446	463	514
Serbia and Montenegro <sup>d</sup>	248	222	225	183	214	188	188	232	266	250	248	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switzerland	1,113	1,248	1,175	1,316	1,250	1,218	1,253	1,356	1,538	1,540	1,549	1,528	1,524	1,589	1,676	1,751	1,875	1,859	1,962	2,060	1,961	1,957	1,926	2,101	2,108
Turkey	446	481	499	571	548	691	804	876	1,140	1,135	1,292	1,590	1,544	1,688	1,698	1,606	1,692	1,949	1,861	1,991	2,132	2,078	2,317	2,706	3,143
Ukraine	902	810	847	731	815	844	881	846	901	867	642	689	710	649	678	664	726	751	727	775	641	617	713	746	816
Middle East	933	922	1,003	1,094	1,191	1,352	1,535	1,803	1,981	2,352	2,567	3,132	3,302	3,684	4,247	5,167	6,136	6,332	6,941	7,654	8,027	8,472	9,194	9,867	12,486
Armenia	35	49	42	32	44	46	35	50	56	62	63	100	66	44	66	40	53	58	63	58	59	51	64	65	73
Azerbaijan	66	44	46	33	44	47	46	44	71	79	53	53	65	135	132	142	121	117	76	66	81	114	136	136	139
Bahrain	5	0	3	1	0	0	3	1	0	2	1	1	4	0	1	5	2	8	6	8	5	7	16	27	26
Gaza Strip <sup>e</sup>	0	4	7	16	7	7	16	19	15	13	12	20	26	19	8	12	21	17	14	13	11	12	10	8	17
Georgia	30	24	28	33	27	31	37	20	31	32	34	27	27	26	33	21	36	24	17	29	17	14	29	41	36
Iran	135	150	236	314	373	519	617	834	980	1,249	1,530	1,963	2,132	2,428	2,684	3,209	3,654	3,762	3,951	4,343	4,528	4,691	5,218	5,373	6,260
Iraq	21	13	9	7	6	6	4	10	10	14	15	26	29	29	41	52	89	129	172	171	158	186	277	371	563
Israel	412	390	407	396	427	414	459	495	461	499	496	526	522	484	498	528	451	540	583	616	646	627	705	684	778
Jordan	44	51	33	56	42	50	67	60	53	68	94	113	110	112	90	88	101	101	100	104	103	151	164	176	248
Kuwait	46	36	36	42	29	31	28	26	36	46	34	41	60	46	55	36	43	57	60	41	52	66	76	107	125
Lebanon	2	8	4	5	15	11	16	7	11	21	31	22	30	22	28	36	42	68	65	81	98	96	110	119	140

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(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oman	3	3	10	12	14	13	17	18	13	15	16	6	18	26	28	38	49	51	65	69	75	102	88	94	114
Qatar	4	11	10	7	6	4	2	5	15	12	9	9	10	10	15	15	39	53	83	129	162	181	184	184	310
Saudi Arabia	111	101	102	109	127	136	167	168	186	198	146	161	164	241	506	889	1,404	1,286	1,629	1,863	1,960	2,008	2,034	2,367	3,585
Syria	9	14	10	11	9	9	8	18	19	10	16	11	14	16	28	31	37	23	22	33	25	33	12	35	48
United Arab Emirates	16	23	15	20	18	21	13	27	21	33	24	56	33	34	37	66	78	100	99	138	136	252	200	298	409
West Bank <sup>e</sup>	8	5	8	11	2	4	7	7	7	8	8	6	9	22	22	15	16	22	23	18	19	35	29	45	40
Yemen	1	6	3	2	3	10	2	6	12	11	11	15	11	15	14	20	20	7	19	14	18	29	43	59	124
Africa	1,140	1,150	1,142	1,193	1,230	1,197	1,364	1,503	1,633	1,600	1,839	2,020	1,903	2,074	2,314	2,592	2,785	3,077	3,104	3,572	3,882	4,246	4,623	5,467	7,070
Algeria	53	52	43	59	46	47	64	84	101	107	162	156	189	203	193	209	262	258	274	326	370	376	475	567	584
Angola	0	0	0	0	1	1	1	0	2	1	0	1	0	1	1	2	1	1	1	0	0	3	2	4	6
Benin	0	0	0	0	0	0	1	1	6	2	1	2	3	2	1	2	2	1	0	2	8	4	3	13	6
Botswana	3	9	7	11	9	13	15	9	21	17	18	14	14	12	8	11	14	11	12	9	19	17	18	12	25
Burkina Faso	2	1	1	3	0	0	2	0	6	0	1	7	4	7	5	7	8	7	4	7	7	9	8	5	8
Burundi	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	2	4	0	0	3	1	0	1	1	0
Cabo Verde	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Cameroon	9	6	9	4	5	6	11	10	15	20	25	32	35	25	25	34	31	34	27	39	45	36	49	66	86
Central African Republic	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Chad	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	2
Comoros	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	0
Congo, Democratic Republic of the	0	2	0	1	0	0	1	3	0	2	3	0	2	1	2	3	1	6	4	4	10	9	8	3	6
Congo, Republic of the	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	0	0	2	0	0	1
Côte d'Ivoire	0	0	9	7	9	5	12	3	10	11	7	14	12	12	10	13	18	8	8	11	16	7	21	14	19
Djibouti	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	0	1	1	0	1	2	0	2	3
Egypt	574	575	584	531	595	580	673	746	725	736	812	857	859	878	985	1,002	1,116	1,327	1,403	1,567	1,681	1,950	2,094	2,465	3,339
Equatorial Guinea	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eritrea	0	0	1	0	0	0	0	0	0	0	3	0	0	2	0	1	0	0	2	0	0	2	1	0	3
Eswatini	0	1	2	1	0	0	1	1	0	2	0	0	1	1	1	1	1	2	1	1	1	0	0	1	1
Ethiopia	18	17	15	10	14	9	9	8	5	10	17	11	12	9	12	24	26	29	29	32	43	69	80	111	197
Gabon	1	0	1	3	1	0	0	0	1	2	1	0	0	1	0	2	0	2	2	1	5	7	4	3	7
Gambia, The	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	0	0	1	0
Ghana	4	3	5	8	3	4	2	9	3	9	9	7	6	14	5	11	10	18	22	20	32	25	33	54	76
Guinea	0	0	0	0	0	0	0	0	2	0	1	0	3	1	0	0	1	1	1	2	0	1	0	0	0
Guinea-Bissau	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Kenya	11	8	12	5	8	13	10	16	12	11	4	10	7	18	9	25	32	14	12	8	23	27	29	38	59
Lesotho	1	1	0	0	0	1	1	0	2	0	0	2	1	0	0	1	0	0	1	2	2	3	1	1	1

Table SPBS-21

## S&amp;E articles in chemistry, whole count, by region, country, or economy: 1996–2020

(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Liberia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Libya	2	4	8	4	3	3	7	6	11	8	15	28	13	24	34	28	37	27	21	18	25	28	28	35	41
Madagascar	1	4	1	2	2	4	2	1	4	3	3	1	2	5	3	2	6	6	4	3	4	2	4	3	2
Malawi	1	0	1	1	1	1	1	0	0	0	0	2	0	1	2	3	0	2	0	1	1	1	3	3	3
Mali	0	0	0	0	0	0	0	0	2	2	2	0	1	2	2	1	2	2	5	1	1	1	2	1	2
Mauritania	0	0	0	0	0	2	2	3	4	7	1	3	7	7	0	3	1	1	1	0	4	8	7	3	5
Mauritius	1	1	1	4	7	5	4	7	7	9	1	6	7	9	10	4	11	11	9	17	16	23	29	35	21
Morocco	117	100	121	135	162	153	142	139	155	132	138	178	146	142	227	253	185	203	181	217	182	202	288	382	524
Mozambique	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	1	4	3	4	2	7	12
Namibia	0	0	1	0	0	0	0	1	1	1	1	0	0	0	1	0	0	1	3	5	2	5	1	5	15
Niger	1	0	0	0	1	0	0	0	2	0	0	2	0	0	2	1	1	0	2	0	5	1	0	3	1
Nigeria	70	48	33	42	42	28	39	36	49	40	54	59	49	82	82	77	72	86	103	132	151	184	193	299	494
Rwanda	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	1	1	2	5	6	6	22
São Tomé and Príncipe	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Senegal	8	8	5	12	4	7	9	10	10	12	11	17	12	23	16	16	31	32	20	21	18	21	23	19	29
Seychelles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Sierra Leone	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Somalia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
South Africa	216	247	213	268	218	238	265	292	351	322	403	435	371	462	493	674	728	739	675	785	842	804	884	954	1,234
South Sudan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Sudan	1	1	3	3	3	1	4	5	2	5	3	18	9	16	18	27	28	23	29	31	30	25	41	44	63
Tanzania	4	2	0	3	1	0	3	9	4	8	4	4	1	6	2	10	12	13	11	11	20	13	14	10	23
Togo	0	0	1	3	0	1	1	1	3	0	0	1	1	0	0	1	0	0	2	0	1	1	2	2	1
Tunisia	46	60	62	78	96	78	92	113	132	135	165	177	165	161	202	205	232	290	306	395	451	529	475	541	589
Uganda	0	0	0	0	0	0	1	0	1	1	0	3	3	5	2	1	1	2	3	8	7	10	11	9	11
Zambia	1	1	2	2	1	0	0	0	1	1	1	1	0	2	1	0	0	2	0	2	1	1	4	2	7
Zimbabwe	1	6	8	6	4	8	0	4	0	3	4	2	4	3	1	0	1	3	5	8	6	7	17	11	14
Asia	19,045	19,498	20,074	21,408	21,928	23,636	24,944	27,240	30,546	38,673	42,736	42,644	44,006	48,290	49,161	54,713	58,876	62,783	69,344	74,297	75,197	77,917	85,185	92,010	97,305
Afghanistan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	2	1	2	4
Bangladesh	38	34	33	57	24	48	51	55	54	67	51	73	67	70	82	104	113	113	122	151	139	173	205	229	364
Bhutan	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0	2	1	0	0	0	0	0
Brunei	6	1	3	3	3	5	4	3	6	3	3	2	3	1	5	12	15	13	18	28	20	11	20	29	36
Burma	2	2	1	1	1	1	0	3	6	6	2	3	1	3	0	0	0	0	0	6	4	7	11	10	18
Cambodia	0	0	0	0	0	0	0	0	0	0	0	0	3	2	3	1	0	0	1	0	3	3	4	0	7
China	5,056	5,475	5,530	6,381	7,016	8,208	8,858	10,016	12,933	16,103	18,333	21,267	22,231	24,877	25,126	28,590	31,000	34,552	39,842	43,397	44,864	46,838	52,583	58,892	60,574
India	3,073	2,797	2,883	3,076	2,982	3,324	3,762	4,274	4,562	4,796	5,695	6,605	6,459	7,017	7,351	8,399	8,829	9,524	10,745	11,189	11,253	11,829	12,174	12,227	13,962



Table SPBS-21

**S&E articles in chemistry, whole count, by region, country, or economy: 1996–2020**

(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Tonga	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Tuvalu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vanuatu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Unassigned	628	503	490	566	589	361	339	575	632	654	468	413	437	296	273	203	175	128	145	179	160	334	308	236	381

EU = European Union; UK = United Kingdom.

<sup>a</sup> The UK was a part of the EU for data purposes from 1973 to 2019.<sup>b</sup> Beginning in 2020, the UK was no longer a member of the EU.<sup>c</sup> Beginning in 2006, Serbia and Montenegro represented individual countries.<sup>d</sup> Serbia and Montenegro represented a single country for data purposes from 1992 to 2006.<sup>e</sup> West Bank and Gaza Strip are separate entities in this list but are grouped in the World Bank Lending Groups classification list. Here, the economic status of the group is applied to both individual regions.**Note(s):**

Article counts refer to publications from selected journals and conference papers in S&E from Scopus. Articles are classified by their year of publication and are assigned to a region, country, or economy on the basis of the institutional address(es) of author(s) listed in the article. Articles are credited on a whole count basis. In whole counting, each region, country, or economy with a collaborating author on an article is credited with one count. The sum of the whole count for regions, countries, or economies does not add to the world total because of multiple counts of coauthored publications. Some publications have incomplete address information for coauthored publications in the Scopus database. The Unassigned category count is the sum of whole counts for publications that cannot be assigned to a region, country, or economy.

**Source(s):**

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

*Science and Engineering Indicators*