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Research Article

Genesis and Growth of Indian Chemical Science Journals Over the Last One Hundred Years (1924-2023): An Exploratory Study

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ABSTRACT

The study emphasis growth and development of Indian Chemical Science Journals from 1924 to 2023, of various secondary sources of information like, Web of Science, SCOPUS, Indian Citation Index, Indian Science Abstract and Web-Ulrich (International Periodical Directory), which are published from India and total 160 journals were published during this period. The study reveals that the Indian Chemical Society Journal, Journal of the Institution of Chemists, Transaction of the Indian Ceramic Society, Annals of Biochemistry and Experimental Medicine, were oldest journals of chemical science in India, which has been publishing chemical science-related articles from 1924,1929, 1934, 1941, respectively. Transaction of the Indian Ceramic Society was the oldest journal (94) ceased in 2009. A total 46 journals ceased publication during 1924 to 2023 and most of the ceased journals were increased after 2000 (32). The most of journal are published in the year 2014 (15) and 70.62% journals were published by private/ personal/ corporate publications, 12.5% by professional associations/ learned societies in the field of subjects and also it is observed that out of 160 journals only 16% journals are indexed by Scopus, followed by 8.75% journals are indexed in Indian Citation Index (ICI) and a few of journals 3.12% are indexed in Web of Science. Interestingly, most journals are indexed in another indexing database i.e., DOAJ, EMBASE/ Excerpta Medica, Emerging Sources Citation Index, Indian Science Abstracts, IndMed, PubMed Central, Scimago Journal Ranking, Science Citation Index Expanded, etc.

Keywords: Ceased Journal, Chemical Science Journal-India, Chemical Science, Chemistry Journal-India, Growth of Literature, Indian Chemical Society Journal, Journal of the Institution of Chemists, Organic Chemistry, Physical Chemistry.

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INTRODUCTION

Chemistry is a fundamental scientific discipline. It is a branch of natural science that deals with the composition of matter, and their properties. In India, the techniques of chemical science date back to the Indus Valley or Harappan civilization (Verma *et al.*, 2022). There are five stages observed in the course of development of Indian chemistry: (i) The pre-Vedic period from 1500 BC, which includes the Harappan period, (ii) The Vedic and Ayurvedic period from 700 AD, (iii) The transitional period from 700 AD to 1100 AD, (iv) The Tantric period from 700 AD to 1300 AD and (v) The 'Iatro-chemical period' from 1300 AD to 1600 AD (Sriram, 2021).

Since the Middle Ages the modern facets of the subject chemistry gradually began to spread across India. Indian chemistry had two features: gold-making and the synthesis of nectar. The two aspects of the practice of chemistry, metallurgy and physic, were superimposed to create a single picture in which base metals were transformed into noble metals using mercury and its nectar. Later, in the late 18th century, Sir William Jones established the Asiatic Society in Calcutta, the then capital of colonial India, in 1784 to promote scientific education in India. In the mid-19th century, European scientists began their journey towards India. In 1817, with the help of Raja Rammohan Roy and David Hare, Hindu College was established, which later became Presidency College; it played an important role in the spread of modern science education across India. Then, on 24 January 1857, the University of Calcutta was established to promote the modern education system and science education. In 1872, the first chemistry course was started at Presidency College, Calcutta, followed by a postgraduate course in chemistry in 1886. The Indian Association for the Cultivation of Sciences (Bala and Gupta, 2010) was established in 1876 by Dr. Mahendralal Sarkar and Father Eugene Lafont. Early chemists like P. C. Roy and Chuni Lal Bose

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were actively associated with this institution. P. C. Roy was well aware of and proud of the remarkable progress made by Indians in the field of chemistry during ancient and medieval times, which is evident from his two volumes on the history of Hindu chemistry, a pioneering classic work in the history of science. After Roy, Chandrabhushan Bhaduri and Jyotibhushan Bhaduri were notable research figures in the field of inorganic chemistry. On the other hand, R. D. Phukon sowed the seeds of research in physical chemistry. Thus, a group of young scientists began to show keen interest in modern scientific research activities.

Since there were no journals in India at that time, scientists used to publish their research papers in journals published abroad. In 1924, the "Journal of the Indian Chemical Society" was started, which was the first published chemistry journal in India, published by Acharya Prafulla Chandra Roy from the Indian Chemical Society, Kolkata, West Bengal. The present study focuses on the genesis and growth of chemical science journals published from India.

LITERATURE REVIEW

Singh (2014) studied the scientometric analysis of 657 papers published in Indian Journal of Pure and Applied Physics during the period of 2006-2010. Paul and Deoghuria (2014) shows a scientometric analysis on Indian Journal of Physics during 2004 to 2013. This study covered the remarkable growth pattern of literature both quantitatively and qualitatively, authorship pattern, citation analysis etc. Pathak and Kumari (2019) carried out a scientometric analysis of Indian Journal of Pharmaceutical Education and Research over the timespan of 2007-2018. The study highlights and identifies the year wise growth of publication and citation, authorship pattern, prolific organization etc. Nyamagoudar and Anandhalli analysed the evaluation of the Indian chemical science research publications over the last two decades (2000-2019). This paper shows distribution of research publications by document type and source type publication, growth of publication and top productive countries. Nishy, Parvatharajan and Pratap studied scientometric analysis of the Indian Journal of Chemistry section-B during 2005 to 2009 and they showed authorship pattern, geographical distribution, citation analysis etc. Mondal studied the research emphasis of IISERs in chemical science from 2006 to 2020 to identify research trend, publication patterns. The faculty members contributed 3973 articles in 15 years of which 18.52% were international collaboration publications. Kumari (2009) carried out a scientometric analysis of synthetic organic chemistry research during 1998-2004 and pointed out the publication pattern, growth of subject, authorship pattern, citation analysis. Varaprasad *et al.* (2010) studied the research contribution of J. S. Yadav to Chemical Science in quantitative analysis during 1986 to 2009. The paper shows collaborative works were 90% and highest degree of collaboration was 0.1925 from 2002 to 2003. Sangam, Meera and Megeri (2008) explored the growth pattern of Indian Chemical Science Literature. The findings of the research show the growth of chemical science literature as 0.8 % in the year of 2005. Sab *et al.* (2017) conducted an assessment of Chemical science research output using scientometric indicators. The paper deals with relative growth rate, Doubling time etc. Ranganathan and Balasubramani (2013) carried out scientometric analysis on green chemistry research in India. The studies reveal that most of the research output was published as journal articles (88.47%). The Lotka's law was also verified in this study. Rajendran, Jeyshankar and Elango (2011) conducted a scientometric analysis on Journal of Scientific and Industrial Research. The paper shows 633 contributions, where only 51 papers were single authored and the rest papers were multi-authored with degree of collaboration 0.92% by Indian authors. Santhakumar and Kaliyaperumal (2014) explored the growth and development of mobile technology publications during 2003 to 2012. This study showed that 1,44,527 publications were published in the field of mobile technology during this period. Also, most prolific authors in this field were explored along with publication types, highly productive affiliated institutions etc. Modak and Madras (2008) carried out a scientometric analysis of chemical engineering publications from 1990 to 2006. The results of the paper included country wise distribution, publication pattern and collaboration pattern revealing that the United States has the top publication position (26.15%) in the field. The Chinese Institutions maintained the world-wide standard for a long time in publication records. Mahala and Singh (2021) studied Indian research output of top universities in science domain during 2015 to 2019 available in Scopus database. In all, 26173 documents consisting of journal articles, review papers and proceeding's papers were analysed. The University of Delhi had maximum publications in the science domain over the stipulated period. Kumar *et al.* (2008) studied authorship pattern, institutional collaboration, authors' keyword analysis and referencing pattern from articles published in Pramana: Journal of Physics. The findings of the paper shows that the rate of collaboration was 0.7%. Khanna *et al.* (2017) executed the scientometric analysis of physics and astronomy research output from Guru Nanak Dev University during 2006-2015. The paper shows year wise research productivity, most prolific authors, collaboration institutions and most preferred journals for publication.

Kalaiappan *et al.* (2010) explored the scientometric analysis of Prof. G. N. Ramachandran, an eminent biophysicist and crystallographer. Gupta *et al.* (2011) performed the scientometric analysis of Indian Diabetes research from 1999 to 2008. The findings of the paper show that the United States tops the list holding 29.61% of global publication share and the annual average growth rate of Indian publications on diabetes is 13.71%. Gunasekaran (2026) performed bibliometric analysis of Chemical Science Research in India from 1998 to 2004. The findings of the paper reveal that Indian share of global research in the field of

chemical science in 2002 figured 4.5%. The Indian Institute of Science, Bengaluru was the top-ranked institution contributing 345 papers during the said period. Dwivedi *et al.* (2015) contributed the scientometric study on organic chemistry research in India during 2004 -2013 using Web of Science Database. Biradar *et al.* (2015) conducted a scientometric study of Chemistry Research in India from 1999 to 2012. The paper examines that a total of 94001 publications appeared during this period and the highest share of publications (11.63%) were published in the year of 2012. This paper also studied relative growth rate and doubling time, authors wise productivity, high productive scientists etc. Several studies consisting of the scientometric analysis of chemistry and chemical science research in India have been carried out till date, of which no paper has been observed that analysed the genesis and development of chemical science journals published from India. This feature creates an eminent research gap that no study has yet been carried out outlining the origin and growth of chemical science journals published from India. This paper intends to bridge the said research gap.

Research Question

- How did chemical science journals start to be published in India since 1924?
- What is the present status (subject coverage, publication status, indexing status etc.,) of the chemical science journals published from India?

Objectives to Study

- To prepare a comprehensive list of Chemical Science journals which are published from India.
- To show the growth pattern of Indian chemical science journals since 1924 to 2023, i.e. over the last one hundred years.
- To find out the mode of publication, place of publication, indexing status in various citation databases, frequency of distribution etc., of the Indian chemical science journals.

METHODS

The data for the present study of Indian chemical science journals has been collected from various secondary sources of information like, Web of Science, SCOPUS, Indian Citation Index, Indian Science Abstract and Web-Ulrich (International Periodical Directory) during period of 1924 to 2023, i.e. last one hundred years. The retrieved data from different sources contained several duplicate records that were removed and 160 journals in all were eventually figured out from different sources of information. The complete list of 160 Indian journals is presented in the Appendix at the end.

Data Analysis

The collected journals were divided into three categories, i.e. Phase I: 1924-1947, Phase II: 1948-1999 and Phase III: 2000-2023.

Phase I: 1924 to 1947

One of the leading scientific societies in India, the Indian Chemical Society, was established in 1924 as a national forum for chemists and others in related fields. The first president of the society, Sir Prafulla Chandra Roy, was a leading figure among Indian chemists. Under his leadership, the Indian Chemical Society was established as a recognized society on 9 May 1924. The society was the forerunner who published Indian Chemical Society Journal in 1924 from Kolkata, which is the first and foremost journal on chemical science published from India. Presently, the journal is continuously being published by Springer Link. The second one entitled Journal of the Institution of Chemists started publication in 1929 from Kolkata and the third journal entitled Journal of Chemical Sciences started publication from Sadashivanagar, Bengaluru in 1934. The journal was first published in 1934 as a section of the Proceedings of the Indian Academy of Sciences, Section A, and later changed its name to 'Proceedings - Chemical Sciences (Sagar *et al.*, 2014) in 1978. It was retitled as 'Journal of Chemical Sciences' in 2004. The journal has ceased since the year 2009. The Journal of Chemical Sciences comprises the comprehensive resource for the chemical Science and technology areas. It was started by the Indian Academy of Sciences, Bengaluru in 1934 by the Nobel Laureate Professor C. V. Raman. The frequency of this journal is bi-monthly. The Annals of Biochemistry and Experimental Medicine was started in 1941 by Indian Institute for Biochemistry (Jignesh and Yogesh, 2019) and Experimental Medicine, New Delhi. It was last published yearly in 1963. The Transactions of the Indian Ceramic Society began publication in 1941. The broader subject-area of this journal is condensed matter physics, while the specific domain covers the aspects of glass and ceramics. Presently, Thomson Reuters has taken charge of this journal.

Five journals were started during the period of 1924-1947, of which one journal ceased publication (Table 3). Out of five journals, only two journals were Govt. publication (G) and only three journals were published by R & D organization (D) (Table 5). Out of the five journals, only two journals are indexed by Scopus and one journal is indexed by Web of Science and two journals are not indexed by either of Scopus, Web of Science, or Indian Citation Index (Table 8).

Phase II: 1948-1999

Indian Journal of Chemistry was started in 1963 and bifurcated into two independent journals, Sections A and B, in 1976. The Indian Journal of Chemistry, Sec A (IJC-A) publishes papers from the fields of inorganic, bio-inorganic chemistry, theoretical and analytical chemistry, whereas Indian Journal of Chemistry, Sec B

(IJC-B) publishes papers from organic and medicinal chemistry. From January 2022 onwards, IJC-A has been merged with IJC-B and the combined entity is now published as the monthly journal, Indian Journal of Chemistry. Forty-one journals were started during the period 1948-1999. During this period, 12 journals ceased publication, and 27 journals are still continuing. Also, no data is available for the two journals (Table 3). Out of 27 journals, only 7 journals are Scopus indexed, 3 journals are indexed by Web of Science, and 6 journals are indexed by Indian Citation Index (Table 9).

Phase III: 2000-2023

In all, one hundred fourteen (114) journals were started during the period of 2000 to 2023, of which 32 journals have ceased publication (Table 3). The majority of journals (70.62%) were published by private and corporate sectors during this period and quite a few journals were published by the Government sector (6.25%) and learned society (8.75%) respectively (Table 5). The maximum share of journals is not included by any standard indexing and citation database. Only 6.14% of journals are indexed by Scopus, 1.75% of journals were indexed by Web of Science and 7.01% of journals were indexed by Indian Citation Index (Table 6). Maximum journals are published from Gurgaon, Haryana (Table 11). Out of 114 journals, only two journals contained no ISSN. Otherwise, all journals have ISSN (Table 6). In this phase 41, 46 and 27 journals came out in print, online and hybrid modes respectively (Table 7).

100 years' timeline of Indian Journal of Chemical Sciences

Table 1 presented the timeline of the number's journals published in the area of chemical science from 1924 to 2023 along with respective cumulative journals Figure 1. Most of the journals were started in the year 2014 (15 journals), followed by 12 journals started in 2015, 10 journals were started in the years 2010 and 2012 each and 11 journals were started in 2011.

Table 1: Timeline of Indian Chemical Science Journals.

Sl. No.	Starting Year (Ys)	No. of Journals	Cumulative no. of Journals	Sl. No.	Starting/ Published Year (Ys)	No. of Journals	Cumulative no. of Journals
1.	1924	1	1	26	1994	1	38
2.	1929	1	2	27	1995	1	39
3.	1934	1	3	28	1996	1	40
4.	1941	2	5	29	1997	4	44
5.	1957	2	7	30	1998	2	46
6.	1958	1	8	31	2000	1	47
7.	1963	1	9	32	2003	2	49
8.	1964	1	10	33	2005	8	57
9.	1967	2	12	34	2006	5	62
10.	1969	1	13	35	2007	4	66
11.	1970	1	14	36	2008	4	70
12.	1974	1	15	37	2009	3	73
13.	1976	1	16	38	2010	10	83
14.	1977	1	17	39	2011	11	94
15.	1979	2	19	40	2012	10	104
16.	1981	1	20	41	2013	7	111
17.	1982	1	21	42	2014	15	126
18.	1983	2	23	43	2015	12	138
19.	1985	3	26	44	2016	6	144
20.	1987	1	27	45	2017	4	148
21.	1989	2	29	46	2018	1	149
22.	1990	2	31	47	2019	7	156
23.	1991	2	33	48	2020	1	157
24.	1992	1	34	49	2021	2	159
25.	1993	3	37	50	2022	1	160

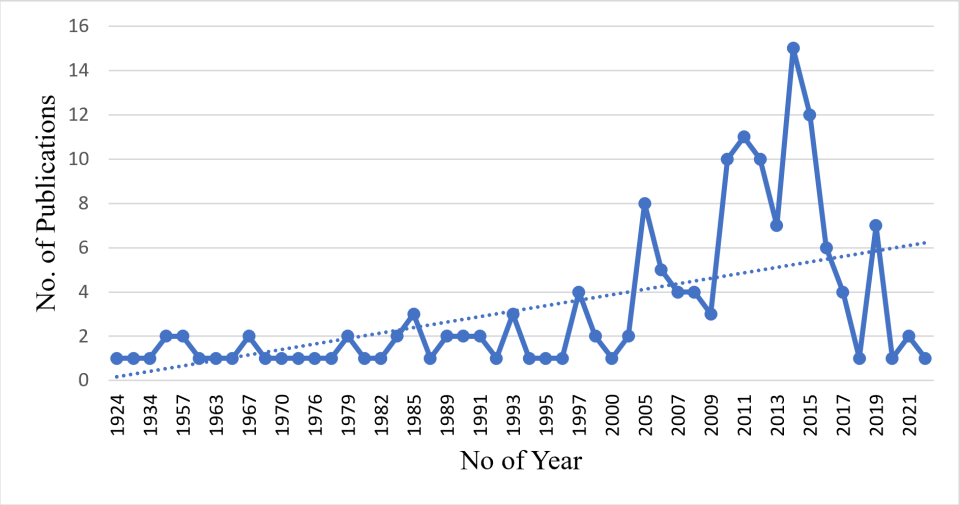

Figure 1: Growth of Publication.

Table 2: Decade-wise Life Span of the Journals.

Sl. No.	Decades from 1924-2023	Median Year of the Decade (Y_M)	No. of Journals Started	Average life span in Years (L_A)	Time-Normalized Life Span [$L_{AN}=L_A/(2023-Y_M)$]
1.	1924 to 1933 (D1)	1928	2	96.5	1.02
2.	1934 to 1943 (D2)	1938	3	84.33	0.99
3.	1944 to 1953 (D3)	1948	-	-	-
4.	1954 to 1963 (D4)	1958	4	64.25	0.99
5.	1964 to 1973 (D5)	1968	5	55.6	1.01
6.	1974 to 1983 (D6)	1978	9	43.66	0.97
7.	1984 to 1993 (D7)	1988	14	33.5	0.96
8.	1994 to 2003 (D8)	1998	12	25.08	1.00
9.	2004 to 2013 (D9)	2008	62	13.5	0.90
10.	2014 to 2023 (D10)	2018	49	6.89	1.38

The decade wise analysis of the life span of journals is presented in Table 2. There are 10 decades starting from 1924 to 2023 which are indicated by D_1, D_2, D_3, D_4…. D_{10}. The Table shows a large number of journals (62) started in the present decade (2004- 2013), followed by 49 journals started during 2014 to 2023, 14 journals started during 1984 to 1993 and 12 journals started during 1994 to 2003. The age of individual journals can be calculated by subtracting the starting year of the journal (Y_s) from the cessation year (Y_c) or the current year 2023 (if continuing).

The number of journals started, and their overall age are determined by decade. The Average Life Span (L_A), which fluctuates greatly over time, is the result of dividing the afore-mentioned total age by the number of journals. For example, the range of L_A is 6.89 to 96.5. Time-Normalized Life Span (L_{AN}) = $L_A/(2023-Y_M)$, where Y_M is the median year of each decade, is introduced here to reduce age-wise volatility. Time-Normalized Life Span (L_{AN}) (Das *et al.*, 2021) ranges from 1.02 (1924-1933) to 1.38 (2014-2023). Tables 3 and 4 make it evident that a declining trend in journal cessation over decades is correlated with an increasing trend in L_{AN} over time.

Table 3: Cessation of Journals.

Starting Year (Range) -------- Cessation year (Range)	1924-1947	1948-1999	2000-2023	1924-2023
1924-47	-	-	-	-
1948-75	1	-	-	1
1976-99	-	-	-	-
After 2000	1	12	32	45
No Data Available	-	2		2
Still Continuing	3	27	82	112

Table 4: Decade-wise Journal Metrics.

Starting Decades ---------- Ceasing Decades	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
1924 to 1933 (D1)	-	-	-	-	-	-	-	-	-	-
1934 to 1943 (D2)	-	-	-	-	-	-	-	-	-	-
1944 to 1953 (D3)	-	-	-	-	-	-	-	-	-	-
1954 to 1963 (D4)	-	1	-	-	-	-	-	-	-	-
1964 to 1973 (D5)	-	-	-	-	-	-	-	-	-	-
1974 to 1983 (D6)	-	-	-	-	-	-	-	-	-	-
1984 to 1993 (D7)	-	-	-	-	-	-	-	-	-	-
1994 to 2003 (D8)	-	-	-	-	-	-	-	1	-	-
2004 to 2013 (D9)	1	-	-	-	2	1	1	1	1	-
2014 to 2023 (D10)	-	-	-	1	-	2	3	1	18	12
Still Continuing	1	2	-	3	3	5	10	6	45	37
Not Available Data	-	-	-	-	-	1	1	-	-	-
No of Journals during Decades (D1 to D10)	2	3	0	4	5	9	15	9	64	49

Table 5: Frequency of Publishers.

Publishers' Category	1900- 1947	1948-1999	2000-2023	1900-2023
Private/ Personal/ Corporate Publication [R]	0	24	89	113 (70.63%)
Professional Association/ Learned Society (L)	0	6	14	20 (12.50%)
R & D Organization (D)	3	2	9	14 (8.75%)
Govt. Organization (G)	2	8	0	10 (6.25%)
University Department (U)	0	1	2	3 (1.88 %)

Table 6: ISSN Analysis.

ISSN Status	1900-1947	1948-1999	2000-2023	1900-2023
Print	3	22	41	66 (41.25%)
Online	1	3	45	49 (30.62%)
Print + Online	1	15	26	42 (26.25%)
No ISSN	0	1	2	3 (1.87%)
Total	5	41	114	160

Table 7: Publication Mode.

Mode of publication	1900- 1947	1948-1999	2000-2023	1900-2023
Print	3	23	41	67 (41.87%)
Online	1	3	46	50 (31.25%)
Hybrid	1	15	27	43 (26.87%)
Total	5	41	114	160

Table 8: Frequency Distribution.

Frequency	1900-1947	1948-1999	2000-2023	1900-2023
Annual	3	11	9	23 (14.37%)
Bi-annual	-	4	33	37 (23.12%)
Quarterly	1	11	32	44 (27.5%)
Tri-Annual	-	-	4	4 (2.5%)
Bi-Monthly	1	3	8	12 (7.5%)
Monthly	-	9	14	23 (14.37%)
Fortnightly	-	-	-	-
Weekly	-	1	-	1 (0.62%)
Irregular	-	13	-	13 (8.12%)
No Data	-	1	2	3 (1.87%)
Total	5	53	102	160

Table 9: Indexing Status.

Indexing Sources	1900-1947	1948-1999	2000-2023	1900-2023
Scopus	2	7	7	16 (16%)
Web of Science	1	2	2	5 (3.12%)
Indian Citation Index (ICI)	-	6	8	14 (8.75%)
Scopus and Web of Science	-	2	-	2 (1.25%)
Scopus and Indian Citation Index (ICI)	-	2	-	2 (1.25%)
Scopus, Web of Science and Indian Citation Index (ICI)	-	-	-	-
Web of Science and Indian Citation Index (ICI)	-	1	-	1 (0.62%)
Others Index, which is not covered by Scopus, Web of Science, and Indian Science Index	2	21	97	120 (75%)
Total	5	41	114	160

It is observed that 5 journals were started before independence, i.e. from 1924 to 1947, of which 3 journals are still continuing and 2 journals have ceased. Also, 41 journals were started from 1948 to 1999, of which 12 journals ceased publication and 114 journals were started after 2000 of which, 32 journals ceased publication. The trend of journal cessation is thus increasing with time, and total 46 journals ceased publication from 1924 to 2023. An increasing trend of cessation has been observed since after the year 2000.

Frequency of Publishers

Table 5 presents the frequency of publishers' categories. There are five different categories like Govt. Organization, R & D Organization, Professional Association/ Learned Society, Private/ Personal/ Corporate Publication and University Department.

It is found that 70.62% of journals are published by private/ personal/ corporate publications, 12.5% by professional associations/ learned societies and 8.75%, while 6.25% of journals are published by R & D Organization and Govt. Organization, respectively.

ISSN Analysis

The ISSN (International Standard Serial Number) rank is presented in Table 6. This shows 41.25% of journals with print ISSN only, followed by 30.62% journals with online version

Table 10: Subject Domain Analysis.

Subject Domain	Frequency	Percentage of Subject Domain Frequency (%)
Chemical Science	60	37.50
Biochemistry	21	13.13
Pharmaceutical	11	6.88
Engineering	9	5.63
Organic Chemistry	6	3.75
Physical Chemistry	6	3.75
Analytical Chemistry	5	3.13
Environmental Chemistry	5	3.13
Electrochemistry	4	2.50
Green Chemistry	4	2.50
Molecular	4	2.50
Atoms	3	1.88
Biotechnology	3	1.88
Geochemistry	3	1.88
Clinical Chemistry	2	1.25
Inorganic Chemistry	2	1.25
Photochemistry	2	1.25
Polymer	2	1.25
Spectroscopy	2	1.25
Ceramic	1	0.63
Heterocyclic	1	0.63
Mineralogist	1	0.63
Minerals	1	0.63
Petrochemical	1	0.63
Thermodynamics	1	0.63
	160	

(e-ISSN) and 26.25% journals with (print + online) ISSN. 1.87% of journals do not have ISSN numbers.

Publication Mode

Table 7 shows mode of publication in which 41.87% journals are published in print mode, while 31.25% and 26.87% journals are published through online and hybrid mode respectively.

Frequency of Journals

The frequency of journal publication is shown in Table 8, which indicates that 27.55% of journals are published quarterly, followed by bi-annual, annual and monthly publications representing 23.12%, 14.37% and 14.37% respectively.

Indexing Status of Journals

The indexing status of the journals is shown in Table 9. Out of 160 journals, 16% journals are indexed in Scopus, 8.75% journals are indexed in Indian Citation Index (ICI), and some of the journals are indexed in Web of Science (3.12%).

It is interesting to note that 120 (75%) journals are indexed by others indexing databases which are not covered by Scopus, Web of Science, and Indian Citation Index. It means that large numbers of journals are published from India in chemical science but they are hardly indexed by either Scopus or Web of Science.

Subject Domain

Table 10 shows subject domain analysis of the journals of chemical sciences published from India. The Table shows 60 (37.50%) journals belong to the broad discipline of chemical science, 13.13% journals belong to biochemistry and 6.88 % journals belong to pharmaceutical subjects.

Places of Publication

The analysis of Table 11 shows that 160 chemical science journals are published from various geographical locations of India. The analysis shows that most of the journals (11.25%) are published from Gurgaon, Haryana. The state Haryana is ranked at topmost with respect to the publication of chemical science journals followed by Rohini, Delhi (7.5%) and Noida, Uttar Pradesh (6.25%).

CONCLUSION

Over the past hundred years, chemical science journals in India have maintained their growth disregard the closure of a few journals. The rapid proliferation of journals was observed after 2000 (114), and the private/corporate organizations mostly published these journals 70.63%. The maximum journals (41.87%) were published in print mode. Interestingly, only 16% of journals are covered in Scopus, followed by 8.75% journals indexed in Indian Citation Index (ICI) and a few journals, 3.12% are indexed in Web of Science, and most journals are covered in other indexing databases. Indian Chemical Society Journal, Journal of Chemical Sciences and Transaction of the Indian Ceramic Society is the oldest journal in chemical science in India, which requires maintaining their standards. So, Indian Chemical Science journals require more publicity for rising their visibility, which will enable them to increase their Impact Factor, H-index, etc.

Table 11: Distribution of Place of Publication.

Place Name	Rank	1900-1947	1948-1999	2000-2023	Total
Gurgaon, Haryana	1	-	-	18	18 (11.25%)
Rohini, Delhi	2	-	-	12	12 (7.5%)
Noida, Uttar Pradesh	3	-	1	9	10 (6.25%)
Trivandrum, Kerala	4	-	8	1	9 (5.62%)
Hyderabad, Telangana	5	-	1	6	7 (4.37%)
Hooghly, West Bengal	6	-	-	6	6 (3.75%)
Darya Ganj, New Delhi	7	1	1	4	5 (3.12%)
Kolkata, West Bengal	8	3	1	1	5 (3.12%)
Pusa Campus, New Delhi	9	-	5	-	5 (3.12%)
New Delhi	10	1	2	1	4 (2.5%)
Pune, Maharashtra	11	-	-	4	4 (2.5%)
Ahmedabad, Gujarat	12	-	-	3	3 (1.88%)
Jaipur, Rajasthan	13	-	1	2	3 (1.88%)
Malviya Nagar, New Delhi	14	-	1	2	3 (1.88%)
Mumbai, Maharashtra	15	-	2	1	3 (1.88%)
Sahibabad, Uttar Pradesh	16	-	1	2	3 (1.88%)
Ajmer, Jaipur	17	-	-	2	2 (1.25%)
Bengaluru, Karnataka	18	-	1	1	2 (1.25%)
Bhopal, Madhya Pradesh	19		1	1	2 (1.25%)
Egattur, Chennai	20	-	-	2	2 (1.25%)
Indore, Madhya Pradesh	21	-	-	2	2 (1.25%)
Jaunti, Delhi	22	-	-	2	2 (1.25%)
Not Found	23	-	-	2	2 (1.25%)
Prayagraj, Uttar Pradesh	24	-	-	2	2 (1.25%)
Puthiyamputhur, Tamil Nadu	25	-	-	2	2 (1.25%)
Sadashivanagar, Bengaluru	26	1	1	-	2 (1.25%)
Sultanpur, Uttar Pradesh	27	-	-	2	2 (1.25%)
Tarnaka, Hyderabad	28	-	-	2	2 (1.25%)
Adirampattinam, Tamil Nadu	29	0	0	1	1
Ambala, Haryana	30	-	-	1	1
Asiana, Lucknow	31	-	-	1	1
Baranashi, Uttar Pradesh	32	-	1	-	1
Chandigarh, Punjab	33	-	-	1	1
Delhi	34		1	.	1
Ghaziabad, Uttar Pradesh	35	-	1	-	1
Jalpaiguri, West Bengal	36	-	-	1	1
Kadapa, Andhra Pradesh	37	-	-	1	1
Kanchipuram, Tamil Nadu	38	-	-	1	1
Kanpur, Uttar Pradesh	39	-	-	1	1
Karaikudi, Tamil Nadu	40	-	1	-	1
Lucknow, Uttar Pradesh	41	-	-	1	1
Mayur Vihar, Delhi	42	-	-	1	1

Place Name	Rank	1900-1947	1948-1999	2000-2023	Total
Medinipur, West Bengal	43	-	1	-	1
Meerut City, Uttar Pradesh	44	-	1	-	1
Mysore, India	45	-	1	-	1
Nacharam, Hyderabad	46	-	1	-	1
Nagercoil, Tamil Nadu	47	-	-	1	1
Nehru Place, New Delhi	48	-	1	-	1
Nellore, Andhra Pradesh	49	-	-	1	1
Ongole, Andhra Pradesh	50	-	-	1	1
Patna, Bihar	51	-	1	-	1
Raipur, Chhattisgarh	52	-	1	-	1
Rajasansi, Punjab	53	-	-	1	1
Ramprastha, Ghaziabad	54	-	1	-	1
Sanath Nagar, Hyderabad	55	-	-	1	1
Secunderabad, Telangana	56	-	-	1	1
Shahdara, Delhi	57	-	1	-	1
Shakarpur, Delhi	58	-	1	-	1
Sikandra-Bodla, Agra	59	-	-	1	1
Surat, Gujarat	60	-	-	1	1
Tarakeswar, Hooghly	61	-	-	1	1
Thennur, Tamil Nadu	62	-	-	1	1
Uttam Nagar, New Delhi	63	-	-	1	1
Vijayawada, Andhra Pradesh	64	-	-	1	1
Total		5	41	114	160

ABBREVIATIONS

ICI: Indian Citation Index; **DOAJ:** Directory of Open Access Journals; **ISSN:** International Standard Serial Number; **IJC-A:** *Indian Journal of Chemistry*, Section A; **IJC-B:** *Indian Journal of Chemistry*, Section B; **R & D:** Research and Development; **G:** Government Organization; **D:** Research and Development Organization; **L:** Professional Association/Learned Society; **R:** Private/Personal/Corporate Publication; **U:** University Department; **LA:** Average Life Span; **YM:** Median Year of Each Decade; **LAN:** Time-Normalized Life Span; **Ys:** Starting Year of the Journal; **Yc:** Cessation Year; **D1-D10:** Decades from 1924 to 2023.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Annexure: Indian Chemical Science Journals (1924 – 2023).

Sl. No.	Name of the Journals	Starting/ Published Year (Ys)	Indexed in…	Whether continuing, if 'No', Year of cessation (Yc)	Age in Years (Ys-Yc)/ (Ys-2023)	Place and State of Publication	Frequency (Latest)	ISSN (Print & Online)	Publisher's Name and Type	Publication Model
1	Indian Chemical Society Journal	1924	S	Yes	99	Kolkata West Bengal	Yearly	0019-4522	Indian Chemical Society (D)	p
2	Journal of The Institution of Chemists	1929	No	No, 2009	94	Kolkata West Bengal	Bi-Monthly	0020-3254	The Institution of Chemists (India) (D)	p
3	Journal of Chemical Sciences	1934	S	Yes	89	Bengaluru	Yearly	0974-3626/ 0973-7103	Indian Science Academy (G)	H
4	Annals of Biochemistry and Experimental Medicine	1941	No	No, 1963	82	New Delhi	Yearly	0365-0642	Indian Institute for Medical Research (G)	p
5	Transactions of the Indian Ceramic Society	1941	W	Yes	82	Kolkata, West Bengal	Quarterly	2165-5456	Indian Ceramic Society (D)	O
6	Chemical Weekly	1957	No	Yes	66	Mumbai, Maharastra	Weekly	0045-6500	Sevak Publications [R]	H
7	Indian Perfumer	1957	No	No, 2018	66	Noida, Uttar Pradesh	Quarterly	0019-607X	Essential oil association of India (L)	p
8	Indian Chemical Engineer	1958	ICI	Yes	65	Kolkata, West Bengal	Quarterly	0019-4506/ 0975-007X	Indian Institute of Chemical Engineers (G)	H
9	Indian Journal of Chemistry	1963	S	Yes	60	Pusa Campus, New Delhi	Monthly	0019-5103/ 2583-1321	NISCAIR [G]	H
10	Indian Journal of Bio-chemistry and Bio-physics	1964	S	Yes	59	Pusa Campus, New Delhi	Monthly	0301-1208/ 0975-0959	NISCAIR [G]	H
11	Indian Journal of Pharmaceutical Education and Research	1967	W	Yes	56	Bengaluru, Karnatak	Quarterly	0019-5464	Association of Pharmaceutical Teachers of India [L]	O
12	The Indian Mineralogist	1967	No	No, 2009	56	Mysore, India	Bi-annual	0019-5928	Mineralogical Society of India [L]	p
13	Current Titles in Electrochemistry	1969	S, ICI	No, 2006	54	Malviya Nagar, New Delhi	Monthly	0300-4376	Scientific Publishers [R]	p
14	Chemical Digest	1970	No	Yes	53	Mumbai, Maharashtra	Monthly	0970-9525	Small Business Publications [R]	p
15	Chemical Engineering World	1974	S	No, 2018	49	Nehru Place, New Delhi	Quarterly	0009-2517	Chemical Engineering World [R]	p
16	Indian Journal of Chemistry- Section A	1976	S	Yes	47	Pusa Campus, New Delhi	Monthly	0376-4710/ 0975-0975	NISCAIR [G]	H
17	ACTA Chemistry	1977	No	No, 2018	46	Meerut City, Uttar Pradesh	Quarterly	0253-7338	Acta Scientific Publications [R]	p
18	Bulletin of Materials Science	1979	S, W	Yes	44	Bengaluru	Yearly	0250-4707/ 0973-7669	Indian Science Academy [G]	H

19	Proceedings of the Indian Academy of Sciences - Chemical Sciences	1979	No	No, 2008	44	New Delhi	Monthly	0253-4134	Spinger India [R]	P
20	The Delhi University Journal of the Natural Sciences	1981	No	Yes	42	Delhi	Yearly	2334-2951	University of Delhi [G]	O
21	Bulletin of Pure & Applied Science- Chemistry	1982	ICI	Yes	41	Shahdara, Delhi	Bi-Annual	0970-4620/ 2320-320X	Baps Publications [R]	H
22	Chemical Products Finder	1983	No	Yes	40	Shakarpur, Delhi	Monthly	no	MAGAZINE Communications Pvt. Ltd. [R]	p
23	Indian Journal of Geochemistry	1983	No	Not available	40	Baranashi, Uttarpradesh	Unknown	0970-9088	Indian Association of Geochemists [L]	p
24	Bulletin of Electrochemistry	1985	No	Yes	38	Karaikudi, Tamil Nadu	Monthly	0256-1654	Central Electrochemical Research Institute [D]	p
25	Indian Journal of Clinical Biochemistry	1985	S	Yes	38	Patna, Bihar	Bi-Annual	0970-1915/ 0974-0422	Association of Clinical Biochemist of India [L]	H
26	Oriental Journal of Chemistry	1985	W, ICI	Yes	38	Bhopal, Madhya Pradesh	Bi-Monthly	0970-020X/ 2231-5039	Oriental Scientific Publishing Co [R]	H
27	Journal of Polymer Materials	1987	W	No, 2018	36	New Delhi	Quarterly	9700-838X	Oxford & I.B.H. Publishing [R]	P
28	Asian Journal of Chemistry	1989	No	Yes	34	Sahibabad, Uttar Pradesh	Quarterly	0970-7077	Asian Publication Corporation [R]	p
29	Asian Journal of Research in Chemistry	1989	ICI	Yes	34	Raipur, Chhattisgarh	Bi-Monthly	0974-4169/ 0974-4150	A and V Publications [R]	H
30	Trends in Organic Chemistry	1990	ICI	Yes	33	Trivandrum, Kerala	Yearly	0972-4362	Research Trends (P) Ltd. [R]	p
31	Trends in Photochemistry & Photobiology	1990	No	Yes	33	Trivandrum, Kerala	Yearly	0972-4532	Research Trends (P) Ltd. [R]	p
32	Indian Journal of Heterocyclic Chemistry	1991	W, S	Yes	32	Ramprastha, Ghaziabad	Quarterly	0971-1627/ 2456-4311	Connect Journals [R]	O
33	Trends in Chemical Physics	1991	No	No, 2006	32	Trivandrum, Kerala	Yearly	0972-4346	Research Trends (P) Ltd. [R]	p
34	Current Topics in Electrochemistry	1992	S, ICI	Yes	31	Trivandrum, Kerala	Yearly	0972-4443	Research Trends (P) Ltd. [R]	p
35	Trends in Applied Spectroscopy	1993	ICI	No, 2014	30	Trivandrum, Kerala	Yearly	0972-4516	Research Trends (P) Ltd. [R]	p
36	Trends in Chemical Engineering	1993	No	Yes	30	Trivandrum, Kerala	Yearly	0972-4478	Research Trends (P) Ltd. [R]	p
37	Trends in Comparative Biochemistry & Physiology	1993	ICI	No, 2018	30	Trivandrum, Kerala	Yearly	0972-4540	Research Trends (P) Ltd. [R]	p
38	Indian Journal of Chemical Technology	1994	S	Yes	29	Pusa Campus, New Delhi	Bi-Monthly	0971-457X/ 0975-0991	NISCAIR [G]	H

39	Journal of Physical Science	1995	No	Yes	28	Medinipur, West Bengal	Yearly	2350-0352	Vidyasagar University [U]	P
40	Indian Journal of Medical Biochemistry	1996	No	Yes	27	Daryagani, New Delhi		0972-1207/ 2456-5664	Jaypee Brothers Medical Publishers [R]	H
41	Asian Chemistry Letters	1997	No	Not available	26	Ghaziabad, UttarPradesh	Quarterly	0971-9822	Anita Publications [R]	P
42	Asian Journal of Spectroscopy	1997	No	no, 2009	26	Jaipur, Rajasthan	Quarterly	0971-9237	Spectral-Force Publications [R]	p
43	Indian Journal of Chemistry- Section B	1997	S	No, 2021	26	Pusa Campus, New Delhi	Monthly	0376-4699/ 0975-0983	NISCAIR [G]	H
44	Journal of Applied Geochemistry	1997	No	Yes	26	Nacharam, Hyderabad	Bi-Annual	0972-1967/ 2319-4316	Indian Society of Applied Geochemists [L]	H
45	Current Topics in Analytical Chemistry	1998	No	Yes	25	Trivandrum, Kerala	Yearly	0972-4451	Research Trends (P) Ltd. [R]	p
46	Exploration and Research for Atomic Minerals	1998	No	Yes	25	Hyderbad, Telangana	Quarterly	0972-1967/ 2319-4316	Atomic Minerals Directorate for Exploration and Research [D]	H
47	Trends in Geochemistry	2000	No	No, 2002	23	Trivandrum, Kerala	Yearly	0972-4850	Research Trends (P) Ltd. [R]	p
48	International Journal of Chemical Sciences	2003	ICI	No, 2022	20	Gurgaon, Haryana	Quarterly	0972-768X	Trade Science [R]	p
49	International Journal of Chemical Sciences and Research	2003	No	No, 2022	20	Gurgaon, Haryana	Quarterly	2249-0329	Trade Science [R]	p
50	Analytical Chemistry: An Indian Journal	2005	No	Yes	18	Gurgaon, haryana	monthly	0974-7419	Trade Science [R]	p
51	Indian Journal of Agricultural Biochemistry	2005	S	Yes	18	Kanpur, Uttar Pradesh	Bi-Annual	070-6399/ 0974-4479	The Indian Society of Agricultural Biochemistry [L]	H
52	International Journal of Applied Chemistry	2005	ICI	Yes	18	Rohini, Delhi	Bi-Annual	0973-1792/ 0973- 9734	Research India Publications [D]	H
53	International Journal of Pure and Applied Chemistry	2005	No	No, 2019	18	New Delhi	Bi-annual	0973-3876	Global Research Publications [R]	O
54	Journal of Ultra Chemistry	2005	No	Yes	18	Bhopal, Madhya Pradesh	Bi-monthly	0973-3450/ 2319-8036	Ansari Education and Research Society [L]	H
55	Materials Science: An Indian Journals	2005	No	No, 2021	18	Gurgaon, haryana	Irregular	0974-7486	Trade Science [R]	P
56	Organic Chemistry	2005	No	Yes	18	Gurgaon, haryana	monthly	0974-7516	Trade Science [R]	p
57	Organic Chemistry: An Indian Journal	2005	No	Yes	18	Gurgaon, haryana	Irregular	0974-7516	Trade ScienceC	p
58	Asian Journal of Experimental Chemistry	2006	No	Yes	17	Ahmedabad, Gujrat	Bi-annual	0973-4783/ 0976-8955	Hind Institute of Science & Technology [R]	H
59	Chemical Technology: An Indian Journal	2006	No	No, 2022	17	Gurgaon, Haryana	Irregular	0974-7443	Trade Science [R]	p
60	Inorganic Chemistry	2006	No	No, 2022	17	Gurgaon, haryana		0974-746X	Trade Science [R]	p
61	Inorganic Chemistry: An Indian Journal	2006	No	Yes	17	Gurgaon, haryana	Irregular	0974-746X	Trade Science [R]	p

62	Physical Chemistry: An Indian Journal	2006	No	No, 2022	17	Gurgaon, Haryana	Irregular	0974-7524	Trade Science [R]	p
63	Advances and Applications in Fluid Mechanics	2007	No	Yes	16	Prayagraj, Allahabad	Quarterly	0973-4686	Puspa Publishing House [R]	p
64	Biochemistry	2007	No	Yes	16	Gurgaon, haryana	Irregular	0974-7427	Trade Science [R]	p
65	Biochemistry: An Indian Journal	2007	No	No, 2021	16	Gurgaon, haryana	Irregular	0974-7427	Trade Science [R]	P
66	Journal of Pharmacy and Chemistry	2007	No	No, 2021	16	Sanath Nagar, Hyderabad	Quarterly	0973-9874/ 2349-669X	Science Tech Foundation [R]	H
67	Carbon - Science and Technology	2008	No	Yes	15	Pune, Maharastra	monthly	0974-0546	Applied Science Innovations Pvt. Ltd. [R]	O
68	International Journal of Chemical Engineering	2008	No	No, 2016	15	Darya Ganj, New Delhi	Bi-Annually	0974-5793	Serials Publications Pvt. Ltd. [R]	P
69	Journal of Chemical and Pharmaceutical Sciences	2008	No	Yes	15	VIJAYAWADA, ANDHRA PRADESH		0974-2115/ 2349-8552	Chemical and Pharmaceutical Sciences [D]	H
70	Rasayan Journal of Chemistry	2008	S	Yes	15	Ajmer, Jaipur	Quarterly	0974-1496/ 0976-0083	Rasayan Journal [R]	H
71	International Journal of Chemical Engineering Research	2009	ICI	No, 2022	14	Rohini, Delhi	Bi-Annual	0975-6442/ 0976-4771	Research India Publications [R]	p
72	International Journal of Chemical Research	2009	No	Yes	14	Pune, Maharastra	Yearly	0975-3699/ 0975-9131	Bioinfo Publications [R]	H
73	Journal of Chemical and Pharmaceutical Research	2009	No	Yes	14	Gurgaon, Haryana	monthly	0975-7384	Chemical and Pharmaceutical Research [D]	O
74	International Journal of Applied, Physical and Bio-chemistry Research	2010	S	Yes	13	Egattur, Chennai	Bi-annual	2277-4793/ 2319-4448	Transstellar Journal Publications and Research Consultancy Private Ltd. [R]	H
75	International Journal of Chemical & Petrochemical Technology	2010	S	Yes	13	Egattur, Chennai	Bi-annual	2277-4807/ 2319-4464	Transstellar Journal Publications and Research Consultancy Private Ltd. [R]	O
76	International Journal of Chemical Environmental and Pharmaceutical Research	2010	No	No, 2013	13	Ajmer, Jaipur	Quarterly	2229-3892	International Journal of Chemical Environmental and Pharmaceutical Research [D]	p
77	International Journal of Wastewater Treatment and Green Chemistry	2010	No	No, 2015	13	Darya Ganj, New Delhi	Bi-Annually	0976-6200	Serials Publications Pvt. Ltd. [R]	p
78	Journal of Biochemistry and Biotechnology	2010	No	No, 2014	13	Darya Ganj, New Delhi	Bi-Annual	0976-6235	Serials Publications Pvt. Ltd. [R]	p

79	Journal of Indian Society of Chemistry & Biology	2010	No	Yes	13	Lucknow, Uttar Pradesh	Quarterly	2249-4820	Chemistry & Biology Interface [D]	P
80	Journal of Modern Chemistry and Chemical Technology	2010	No	Yes	13	Noida, Uttar Pradesh	Quarterly	2229-6999	STM Journals [R]	p
81	Pharma Science Monitor	2010	No	yes	13	Surat , Gujarat	Quarterly	0976-9242/ 0976-7908	Pharma Science Monitor [R]	H
82	Research & Reviews in Polymer	2010	No	Yes	13	Gurgaon, haryana	Quarterly	2249-8877	Trade Science [R]	p
83	Research Journal of Pharmaceutical, Biological and Chemical Sciences	2010	No	Yes	13	Not Found	Bi-Monthly	0975-8585	Research Journal of Pharmaceutical, Biological and Chemical Sciences [D]	p
84	Acta Chimica & Pharmaceutica Indica	2011	ICI	Yes	12	Hyderabad	Quarterly	2277-288X	Trade Science [R]	O
85	Chemical Science International Journal	2011	No	Yes	12	Hooghly, West Bengal	Quarterly	2456-706X	Sciencedomain International [R]	p
86	Chemistry and Biology Interface	2011	No	Yes	12	Asiana, Lucknow	Bi-Monthly	2249-4820	Indian Society of Chemists and Biologist [L]	O
87	Current Trends in Biotechnology and Chemical Research	2011	No	Yes	12	Ambala, Haryana	Bi-annual	2249-4073/ 2321-0265	Maharishi Markandehwar University, Department of Biotechnology [U]	H
88	Indian Journal of Applied Research	2011	No	Yes	12	Ahmedabad, Gujarat	monthly	2249-555X	Indian Society for Health and Advanced Research [L]	p
89	International Journal of Applied Biotechnology & Biochemistry	2011	No	Yes	12	Rohini, New Delhi	Bi-Annual	2248-9886	Research India Publications [R]	p
90	International Journal of Biochemistry Research & Review	2011	No	Yes	12	Hooghly, West Bengal	Bi-Annual	2231-086X	Sciencedomain International [R]	p
91	International Journal of Chemistry and Chemical Engineering	2011	ICI	No, 2022	12	Rohini, Delhi	Bi-Annual	2248-9924	Research India Publications [R]	p
92	Journal of Atoms and Molecules	2011	No	Yes	12	Bengaluru, Karnatak	Bi-Monthly	2277-1247	Madhu Publishing House [R]	O
93	Journal of Current Chemical and Pharmaceutical Sciences	2011	No	Yes	12	Gurgaon, haryana	Irregular	2277-2871	Trade Science [R]	O
94	Scientific Reviews and Chemical Communication	2011	No	Yes	12	Gurgaon, haryana	Irregular	2277-2669	Trade Science [R]	O
95	Chemical Science Transactions	2012	W	Yes	11	Adirampattinam, Tamil Nadu	Quarterly	2278-3458/ 2278-3318	WWW Publications [R]	H
96	ChemXpress	2012	no	Yes	11	Gurgaon, haryana	Quarterly	2320-1967	Trade Science [R]	p

97	Indian Journal of Advances in Chemical Science	2012	no	Yes	11	Kadapa, Andhra Pradesh	Quarterly	2320-0898/ 2320-0928	K R O S Publications [R]	H
98	International Journal of Basic and Applied Chemical Sciences	2012	W	Yes	11	Jaipur, Rajasthan	Yearly	2277-2073	Centre for Info Bio Technology [L]	O
99	International Journal of Chemical and Pharmaceutical Sciences	2012	No	No, 2019	11	Not Found	Tri-annual	0976-9390	International Journal of Chemical and Pharmaceutical Sciences [R]	O
100	International Journal of Green and Herbal Chemistry	2012	No	Yes	11	Malviya Nagar, New Delh	Quarterly	2278-3229	Scientific and Academic Publications [R]	O
101	Journal of Pharmacognosy and Phytochemistry	2012	No	Yes	11	Rohini, New Delhi	Bi-Monthly	2349-2278-4136	Society of Pharmacognosy and Phytochemistry [L]	H
102	PARIPEX- Indian Journal of Research	2012	No	Yes	11	Ahmedabad, Gujarat	monthly	2250-1991	Indian Society for Health and Advanced Research [L]	p
103	Research Journal of Chemical Sciences	2012	No	Yes	11	Indore, Madhya Pradesh	Tri-annual	2249-9261/ 2231-606X	International Science Community Association [L]	H
104	World Research Journal of Biochemistry	2012	No	No, 2014	11	Pune, Maharastra	Yearly	2279-0810/ 2279-0829	Bioinfo Publications [R]	H
105	Asian Journal of Chemical and Pharmaceutical Research	2013	No	Yes	10	Nellore, Andhra Pradesh	Bi-Annual	2347-8322	Pharma Research Library [D]	O
106	Interactive Medicinal Chemistry	2013	No	No, 2014	10	Secunderabad, Telangana	Bi-Annually	2053-7107	Herbert Publications Ltd. [R]	p
107	International Journal of Applied Biochemistry	2013	No	No, 2015	10	Kanchipuram, Tamil Nadu	Monthly	2349-5421	Mainspringer Publishers [R]	p
108	International Journal of Chemical Studies	2013	No	Yes	10	Rohini, Delhi	Bi-Monthly	2321-4902/ 2349-8528	AkiNik Publications [R]	H
109	Research Journal of Chemical and Environmental Sciences	2013	No	Yes	10	Sikandra-Bodla, Agra	Bi-monthly	2321-1040	Academy for Environment and Life Sciences [L]	O
110	To Chemistry Journal	2013	No	Yes	10	Rajasansi, Punjab	Quarterly	2581-7507	Purkh [R]	O
111	Universal Organic Chemistry	2013	No	Yes	10	Tarnaka, Hyderabad	monthly	2053-7670	Herbert Publications Ltd. [R]	p
112	Advanced Organic Chemistry Letters	2014	No	No, 2019	9	Jaunti, Delhi	Yearly	2348-1889	Integrated Science Publications [R]	p
113	Chemical Biology Letters	2014	S	Yes	9	Jaunti, Delhi	Quarterly	2347-9825	Science In Publishing [R]	O
114	Emerging Trends in Chemical Engineering	2014	No	Yes	9	Noida, Uttar Pradesh	Quarterly	2349-4786	STM Journals [R]	p

115	International Journal of Advanced Research in Chemical Science	2014	No	No, 2022	9	Ongole, Andhra Pradesh	Monthly	2349-039X/ 2349-0403	ARC Publications [R]	H
116	International Journal of Clinical Biochemistry and Research	2014	No	Yes	9	Uttam Nagar, New Delhi	Quarterly	2394-6369/ 2394-6377	IP Innovative Publication Pvt. Ltd. [R]	H
117	International Journal of Scientific Research in Chemical Sciences	2014	No	Yes	9	Indore, Madhya Pradesh	Bi-Annual	2455-3174	International Scientific Research Organization for Science, Engineering and Technology [D]	O
118	Journal of Applied Chemical Science International	2014	S	No, 2021	9	Hooghly, West Bengal	Quarterly	2395-3705/ 2395-3713	International Knowledge Press [R]	H
119	Journal of Biochemistry International	2014	S	Yes	9	Tarakeswar, Hooghly	Quarterly	2454-4760	International Knowledge Press [R]	O
120	Journal of Bioprocessing and Chemical Engineering	2014	No	Yes	9	Darya Ganj, New Delhi	Quarterly	2348-3768	Science Publishing Group [R]	O
121	Journal of Chemical, Biological and Physical Sciences	2014	No	Yes	9	Malviya Nagar, New Delhi	Bi-Annual	2249-1929	Scientific and Academic Publications [R]	O
122	Journal of Chemistry, Environmental Sciences and its Applications	2014	No	No, 2021	9	Chandigarh, Punjab	Bi-Annual	2349-7564/ 2349-7769	Chitkara University Publications [U]	H
123	Journal of Microelectronics and Solid State Devices	2014	No	Yes	9	Noida, Uttar Pradesh	Quarterly	2455-3336	STM Journals [R]	O
124	Journal of Pharmaceutical, Chemical and Biological Sciences	2014	No	Yes	9	Jalpaiguri	Quarterly	2348-7658	Star Carrier Academy [L]	O
125	Physical Therapy and Rehabilitation	2014	No	Yes	9	Tarnaka, Hyderabad	monthly	2055-2386	Herbert Publications Ltd. [R]	p
126	SSRG International Journal of Chemical Engineering Research	2014	No	Yes	9	Thennur, Trichy	Tri-annual	2394-5370	Seventh Sense Research Group [L]	p
127	ASIO Journal of Analytical Chemistry	2015	No	No, 2019	8	Jaipur, Rajasthan	Irregular	2455-7072	Albert Science International Organization [L]	O
128	Biochemistry & Molecular Biology Letters	2015	No	Yes	8	Gurgaon, haryana	Irregular	2454-9304	Trade Science, Inc. [R]	P
129	Green Chemistry & Technology Letters	2015	No	Yes	8	Prayagraj, Uttarpradesh	Bi-Annually	2455-3611	Maya Global Education Society [L]	O
130	International Journal of Analytical and Applied Chemistry	2015	No	Yes	8	Noida, Uttar Pradesh	Bi-Annual	2582-5933	JournalsPub [R]	O

131	International Journal of Chemical Synthesis and Chemical Reactions	2015	No	No, 2022	8	Noida, Uttar Pradesh	Bi-annual	2582-5917	JournalsPub [R]	O
132	International Journal of Environmental Chemistry	2015	No	Yes	8	Noida, Uttar Pradesh	Bi-Annual	2456-5245	JournalsPub [R]	O
133	International Journal of Green Chemistry	2015	No	Yes	8	Noida, Uttar Pradesh	Bi-Annually	2582-5925	JournalsPub [R]	O
134	International Journal of Thermodynamics and Chemical Kinetics	2015	No	No, 2022	8	Noida, Uttar Pradesh	Bi-Annually	2456-6977	JournalsPub [R]	O
135	Journal of Advanced Chemical Sciences	2015	No	Yes	8	Puthiyamputhur, Tamilnadu	Quarterly	2394-5311	JACS Directory [R]	O
136	Journal of Advanced Electrochemistry	2015	No	No, 2022	8	Puthiyamputhur, Tamilnadu	Yearly	2455-0205	JACS Directory [R]	O
137	Open Journal of Chemistry	2015	No	Yes	8	Hyderabad, Telangana	Yearly	2641-3051	Peertechz [R]	O
138	Research Journal of Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences	2015	No	Yes	8	Pune, Maharashtra	Bi-Monthly	2454-6348	Life Science Informatics Publications [R]	O
139	Asian Journal of Chemical Sciences	2016	No	Yes	7	Hooghly, West Bengal	Quarterly	2456-7795	Sciencedomain International [R]	O
140	Asian Journal of Materials Chemistry	2016	No	No, 2019	7	Sahibabad, Uttar Pradesh	Bi-Annual	2456-6225	Asian Publication Corporation [R]	O
141	Asian Journal of Organic and Medical Chemistry	2016	No	no, 2020	7	SAHIBABAD, UTTAR PRADESH	Quarterly	2456-8937	Asian Publication Corporation [R]	p
142	Asian Journal of Physical and Chemical Sciences	2016	No	Yes	7	Hooghly, West Bengal	Quarterly	2456-7779	Sciencedomain International [R]	O
143	International Journal of Chemical Engineering and Processing	2016	No	Yes	7	Noida, Uttar Pradesh	Bi-Annual	2455-5576	JournalsPub [R]	O
144	RFP Journal of Biochemistry and Biophysics	2016	No	Yes	7	Mayur Vihar, Delhi	Bi-Annual	2582-3558/ 2582-3442	Red Flower Publication Pvt. Ltd. [R]	H
145	International Journal of Chemical Science	2017	No	Yes	6	Rohini, New Delhi	Irregular	2523-2843	Royal Publications [R]	O
146	International Journal of Chemistry Studies	2017	No	Yes	6	Rohini, New Delhi	Irregular	2581-348X	Royal Publications [R]	p
147	Matrix Science Pharma	2017	No	Yes	6	Mumbai, Maharashtra	Bi-annual	2521-0432/ 2521-0815	Wolters Kluwer - Medknow Publications and Media Pvt. Ltd. [R]	H
148	Open Journal of Analytical and Bioanalytical Chemistry	2017	No	Yes	6	Hyderabad, Telangana	Yearly	2689-7628	Peertechz [R]	O

149	Asian Journal of Biochemistry, Genetics and Molecular Biology	2018	No	Yes	5	Hooghly, West Bengal	Quarterly	2582-3698	Sciencedomain International [R]	O
150	Acta Scientific Applied Chemistry Journal	2019	No	No, 2019	0	Hyderabad, Telangana	Monthly	no	Acta Scientific Publications [R]	O
151	Archive of Biochemistry	2019	No	Yes	4	Hyderabad, Telangana	Yearly	2994-4295	Peertechz [R]	O
152	i-Manager's Journal on Chemical Sciences	2019	ICI	Yes	4	Nagercoil, TamilNadu	2019 - Quarterly / 2020 - Bi-annual / 2021 - 2022 - Not Published / 2023 onwards - Tri-annual	2583-9101	i-Manager Publications [R]	O
153	International Journal of Bioscience and Biochemistry	2019	No	Yes	4	Rohini, Delhi	Bi-annual	2664-6544/ 2664-6536	Academic Publications [R]	H
154	International Journal of Chemical and Biological Sciences	2019	No	Yes	4	Rohini, Delhi	Bi-Annually	2664-6773/ 2664-6765	Academic Publications [R]	H
155	International Journal of Chemical Research and Development	2019	No	Yes	4	Rohini, Delhi	Bi-annual	2664-6560/ 2664-6552	Academic Publications [R]	H
156	International Journal of Chemical, Environmental and Biological Sciences	2019	No	Yes	4	Rohini, New Delhi	Bi-annual	2320-4079/ 2320-4087	International Scientific Academy of Engineering & Technology [L]	H
157	International Journal of Chemical and Natural Science	2020	No	Yes	3	Hyderabad, Telangana	Monthly	2347-6672	AIZEON Publishers [R]	O
158	Journal of Atoms and Molecules	2021	ICI	Yes	2	Sultanpur,Uttar Pradesh	Monthly	0976-9595	MRI Publication [R]	O
159	Journal of Advanced Scientific Research	2021	ICI	Yes	2	Sultanpur,Uttar Pradesh	Monthly	0976-9595	MRI Publication [R]	O
160	Accounts of Chemical Education and Research	2022	No	No, 2022	0	Kolkata, West Bengal	Quarterly	no	Indian Chemical Society (D)	P

(Column 4: S=Scopus, W= Web of Science, ICI= Indian Citation Index)
(Column 10: G= Govt. Organization; D= R & D Sector; L= Learned Society/ Professional Association; R= Private/ Personal/ Corporate Publication; U= University Department)
(Column 11: P = Print; O = Online; Hy = Hybrid)