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Research Article

Mapping Scientific Output in the Asian Journal of Chemistry: A Bibliometric Analysis

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ABSTRACT

Background/Aim: This study presents a comprehensive bibliometric analysis of the Asian Journal of Chemistry to evaluate its publication performance, authorship patterns, collaboration networks, thematic evolution and citation impact over the period 2001-2025. **Methodology:** Bibliometric data compressing 19,537 publications were retrieved from the Scoups database and analysed using bibliometric techniques. Data cleaning and standardization were performed using the Bibliometrix package in R, with VOSviewer was employed to visualise co-authorship, institutional collaboration, country collaboration and Keyword co-occurrence networks, Key indicators such as publication growth, authorship patterns, citation impact, profile authors, institutions, countries and thematic structures were examined. **Results:** The findings reveal that the journal published 19,537 documents during the study period, with research articles constituting the majority of publications (94.9%). The average number of co-authors per document was 3.59 and the collaboration coefficient was 0.9199, indicating a strong collaborative research culture. Publication output peaked in 2013 with 2,632 articles followed by a gradual decline in subsequent years. India emerged as the most productive and collaborative country, while several Asian institutions demonstrated substantial research contributions. Keyword analysis identified synthesis, complex formation reaction analysis, chemical analysis and unclassified drug as dominant research themes, Thematic mapping highlighted drug synthesis, chemical reactions and complex formation as motor themes driving the journals. Intellectual structure. Citation analysis showed that highly cited papers predominantly focused on environmental remediation, nanotechnology, phytochemistry and analytical chemistry with the most cited article receiving 155 citations. **Conclusion:** The Asian Journal of Chemistry has established itself as a significant platform for disseminating chemical research, particularly within Asia. The journal demonstrates strong collaborative authorship patterns, thematic diversity and sustained contributions to applied and interdisciplinary chemistry. Future growth may be enhanced by encouraging submission in emerging field such as green chemistry, advanced materials, artificial intelligence applications in chemistry and other interdisciplinary research domains.

Keywords: Asian Journal of Chemistry, Bibliometric Analysis, Scientometrics, Citation Analysis, Research Trends, Collaborative Network: VOSviewer.

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INTRODUCTION

The Asian Journal of Chemistry (AJC) is a peer-reviewed international journal dedicated to the dissemination of research findings in all areas of chemistry. Established in 1989, the journal has grown to become one of the prominent platforms for researchers, particularly from Asia, to publish high-quality chemical research. It is published bimonthly by the Asian Publication Corporation based in India (M *et al*., 2026). The journal covers a wide range of subjects within the discipline of chemistry, including organic, inorganic, physical, analytical, environmental, medicinal, and applied chemistry. It also welcomes interdisciplinary studies where chemistry plays a central role (Mallikarjuna *et al*., 2024). The journal is published in English and is widely recognised for encouraging both fundamental and applied research articles, short communications, and reviews (Ahmed and Sab, 2023; Thanuksodi, 2014; Science *et al*., 2020; Thelen and Hoffman, 2011). The Asian Journal of Chemistry is indexed in several international databases such as Scopus, Chemical Abstracts, and CAS, which enhances its visibility in the global scientific community. Its ISSN for the print edition is 0970-7077 and for the electronic version is 0975- 427X. Although not listed in the Journal Citation Reports (JCR) of Web of Science with a Clarivate

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Impact Factor as of the latest update, it maintains a CiteScore from Scopus (2023 CiteScore: 1.1). The journal's relevance lies in its accessibility to a broad audience of researchers, especially from developing countries, and in its role in promoting chemical research across Asia and beyond. With a consistent publication history and thematic diversity, AJC contributes significantly to the communication of scientific progress in the chemical sciences.

Bibliometric analysis has become an essential method for evaluating the productivity, trends, and impact of scientific publications and journals. Numerous studies have employed bibliometric methods to assess the performance of specific journals, authors, and research areas over defined periods.

Analyzing individual journals offers insights into publishing trends, author productivity, and citation patterns (Dhawan *et al.*, 2016). Highlighted that such studies help editors and researchers understand the developmental trajectory of journals. Similar assessments have been done for several journals. For example, Rajendran (Veeramani *et al.*, 2014), Performed a bibliometric study of the Journal of Biosciences, focusing on authorship patterns and geographic contributions (Thelen and Hoffman, 2011). Analyzed the Medical Journal of Malaysia and highlighted national versus international contributions.

Although few studies directly target the Asian Journal of Chemistry, its regional and disciplinary relevance make it a suitable candidate for bibliometric mapping (Bhattacharya and Basu, 1998). Suggested that chemistry journals in Asia are increasingly gaining recognition, and periodic bibliometric assessments can help track such progress. The AJC, being a long-standing platform for chemical sciences, reflects broader trends in Asian chemical research.

Author productivity is a key metric in bibliometric studies. Lotka's Law, which suggests that a small number of authors contribute most publications, has been validated in several journal-based studies (Ahmed and Sab, 2023; Ankaram, 2013; Chester *et al.*, 2017; Mallikarjuna *et al.*, 2024; Sab and Davanagere, 2024; Science *et al.*, 2020). Bibliometric assessments often test Lotka's distribution to determine whether the journal follows this common scientific publication pattern.

Citation counts help evaluate the impact and relevance of articles within and outside the journal. Bradford's Law is often used to identify core journals contributing to a particular field (Patra *et al.*, 2006) In chemistry and related sciences, this law helps in mapping literature dispersion across journals.

Bibliometric reviews commonly analyse institutional and country-wise contributions. Such data informs about collaboration patterns and research dominance (Sanni and Zainab, 2011). Highlighted that Asian research, particularly from India, China, and Japan, has increased global visibility through regional journals like AJC.

Keyword co-occurrence and thematic mapping are useful for understanding research trends and topic evolution. According to (Van and Waltman, 2010) tools like VOSviewer facilitate visualisations of keyword clusters, allowing identification of prominent research domains within a journal.

OBJECTIVES OF THE STUDY

- To analyse the publication growth pattern in the Asian Journal of Chemistry over a defined period (e.g., 2000-2025).
- To examine the authorship pattern and degree of collaboration among researchers publishing in the journal.
- To determine the geographical distribution of contributions, identifying leading countries and institutions.
- To identify the most prolific authors contributing to the journal and assess their productivity trends.
- To evaluate the most cited articles published in the journal and analyze their citation impact.
- To visualize co-authorship and keyword co-occurrence networks using bibliometric mapping tools like VOSviewer or Biblioshiny.

METHODOLOGY

The bibliographic information for the Asian Journal of Chemistry was extracted from the comprehensive Scopus database. This bibliometric study investigates the scientific output published in the Asian Journal of Chemistry by analysing quantitative publication data, author productivity, collaboration patterns, and thematic trends. The methodology adopted for this analysis comprises the following key steps:

Data Source and Collection

The bibliographic data for the study were retrieved from the Scopus database, one of the most comprehensive and reliable abstract and citation databases for peer-reviewed literature. The search was conducted using the Source Title filter to include only publications from the Asian Journal of Chemistry. Metadata such as publication year, document type, authorship details, institutional affiliations, country of origin, keywords, and citation counts were exported in CSV format for analysis.

Data Cleaning and Preprocessing

The raw data obtained from Scopus were cleaned and standardised using the R programming language. This included the removal of duplicate records, standardisation of author names and institutional names, and filtering non-relevant document types (e.g., errata, editorials). Bibliometric packages such as

Bibliometrix (Abafe *et al.*, 2022; Donthu *et al.*, 2021) and VOS Viewer (Eck and Waltman, 2010) in R, were employed for data wrangling and descriptive analysis.

Bibliometric Indicators and Analysis

The analysis covered a wide range of bibliometric indicators, including:

❖Annual publication output and growth rate.

❖Most prolific authors, institutions, and countries.

❖Citation analysis: most cited papers and average citations per document.

❖Journal impact as per citation metrics.

Visualisation and Mapping

To explore collaboration patterns and thematic structures, the study employed VOSviewer, a tool for constructing and visualising bibliometric networks. The following visual maps and graphs were generated: Co-authorship networks (authors, institutions, countries), Keyword co-occurrence maps to identify major research themes, and citation networks of influential articles within the journal. The results were interpreted in the context of chemistry research trends, regional publication dynamics, and the journal's role in disseminating scholarly output. Graphs, tables, and maps were used to effectively present the findings. This systematic and tool-supported approach enabled a comprehensive mapping of the publication and citation landscape of the Asian Journal of Chemistry, offering insights into its scholarly communication patterns over time.

RESULTS AND DISCUSSION

Main information of the study

The bibliometric dataset analysed spans the years 2001 to 2025, covering a total of 19,537 documents published in the Asian Journal of Chemistry. The journal has maintained a vast publication record, with an average of 3.59 co-authors per document, indicating moderate research collaboration. The annual growth rate of publications stands at -4.17%, indicating a decline in output over recent years. Notably, the average age of documents is 12.5 years, which reflects the enduring presence of older publications in the citation landscape. The journal's documents have received an average of 2.95 citations per article, a modest citation impact. Of the total publications, 1,569 are single-authored documents, contributed by 1,038 authors, underscoring the presence of individual contributions alongside collaborative efforts. The dataset includes 18,543 research articles, 620 conference papers, 301 review articles, and a few other publication types such as errata, notes, and short surveys. In terms of keywords, the journal features 4,673 Keywords Plus and 36,459 author-supplied keywords, highlighting a wide thematic diversity. Despite the large author base of 38,426 contributors, the international co-authorship rate is relatively low at 5.44%, indicating that the journal primarily attracts domestic or regional contributions rather than international collaborations. Interestingly, the dataset shows zero references, which may be due to missing metadata rather than an actual absence. Overall, the journal demonstrates a significant volume of publications with moderate citation performance and limited global collaboration.

Year-wise performance and citation trend

Figure 1 shows that the Asian Journal of Chemistry has exhibited a dynamic publishing trend over the 26 years from 2000 to 2025. In the early 2000s, the journal had a modest output, with 280 articles published in 2000, gradually increasing year by year, reaching 593 publications in 2006. From 2007 onward, the output began to grow more significantly, peaking sharply between 2010 and 2014. The highest number of publications was recorded in 2013 with 2,632 articles, followed closely by 2014 (2,035 articles) and 2012 (1,444 articles). This period marks the journal's most prolific phase, indicating a strong surge in submissions and editorial throughput. However, post-2014, a steady decline in output is observed. By 2015, publications dropped to 1,038, and this downward trend continued through the late 2010s, stabilizing around 550 articles per year between 2016 and 2018. The early 2020s saw further decline, with outputs between 438 and 518 articles annually. The most recent years, 2024 and 2025, show a substantial drop, with only 334 articles in 2024 and 117 in 2025, though the 2025 figure may be partial. Overall, this trajectory suggests a peak-and-decline model, where the journal reached maximum productivity around 2013-2014, followed by a contraction that may reflect changes in editorial policy, submission rates, or indexing status. These trends are important for evaluating the journal's evolution and its role in the chemistry research landscape over time.

Average citations Trends

Figure 2, the line graph titled "Average Citations per Year," reflects the citation trend of scientific publications in the Asian Journal of Chemistry over a span from 2000 to 2025. The trend reveals a gradual increase in average citations from 2000 to around 2010, with some fluctuations. Between 2000 and 2010, the average citations rose from approximately 0.13 to 0.26, showing a steady improvement in the scholarly impact of the journal during this decade.

From 2011 to 2015, the citation trend displayed noticeable variations with peaks and troughs, indicating inconsistency in the scholarly impact during those years. A significant uptrend began in 2016, leading to the highest average citations being recorded between 2018 and 2019, where the values exceeded 0.4. This peak suggests that the articles published during these years received heightened academic attention and relevance, possibly due to quality improvements or growing interest in the topics covered. However, from 2020 onward, a consistent downward

trajectory is observed. While 2021 and 2022 maintained a moderate citation level (~0.34-0.30), a sharp decline is evident from 2023 to 2025. The drop in 2025 brings the average citation rate below 0.05, possibly reflecting the lack of sufficient time for newer publications to accumulate citations or a decline in journal influence and visibility in recent years. Overall, the Asian Journal of Chemistry saw its most impactful period in terms of citations between 2016 and 2019. The recent drop may be temporal and could correct itself over time as more citations accumulate for recent articles. This trend emphasizes the dynamic nature of journal impact and the importance of continued quality and relevance in scientific publishing (Table 1).

Publication trend

Table 2 shows that the publication trend of the Asian Journal of Chemistry from 2001 to 2025 shows a clear evolution in output from 2001 to 2025. The journal published a modest 3-4 issues annually, reflecting its early development stage. Between 2006 and 2010, there was a steady increase in frequency, rising from 5 to 10 issues per year, indicating growth in submission and readership. From 2011 onwards, the journal entered a phase of stability, consistently publishing 12 issues annually. A notable peak occurred in 2023 with 18 issues plus supplementary issues, followed by a sharp increase to 24 issues in 2024. However, the journal returned to a steady 12 issues per year from 2015 to 2024. In 2025, the number of issues dropped significantly to 4, suggesting a possible shift in publication policy, editorial restructuring, or other transitional factors. overall, the trend highlights the journal's initial growth, peak expansion, and eventual stabilization with recent changes.

Authorship Patterns

Table 3 indicates that the authorship pattern of 19,537 papers published in the Asian Journal of Chemistry reveals a strong inclination towards collaborative research. Single-authored papers account for only 8.025 (1566 papers), indicating that a vast majority, over 91% of articles, were co-authored. The most common authorship patterns are two-author (21.91%) and three-author (24.22%) papers, which together contribute to nearly 46% of all publications. Four author contributions (19.57) and five author contributions (12.88) also a significant portion, showing that small to mid-sized collaborative teams dominate in

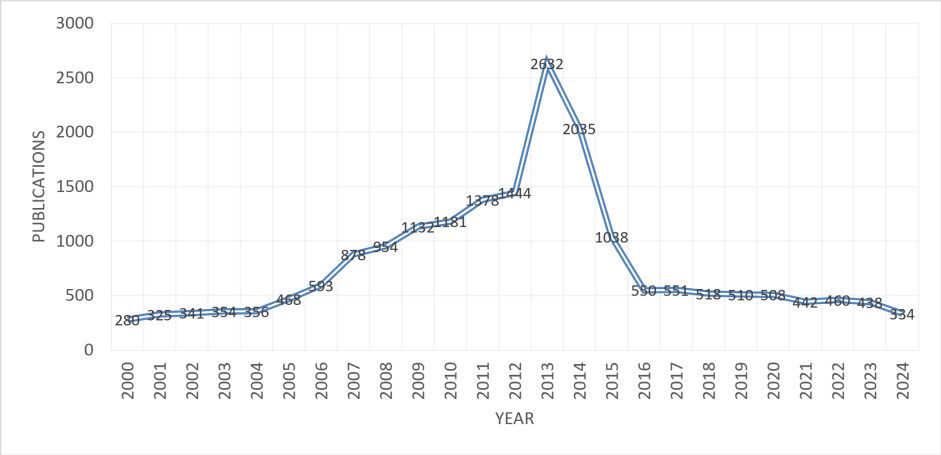


Figure 1: Publications performance and citation trend.

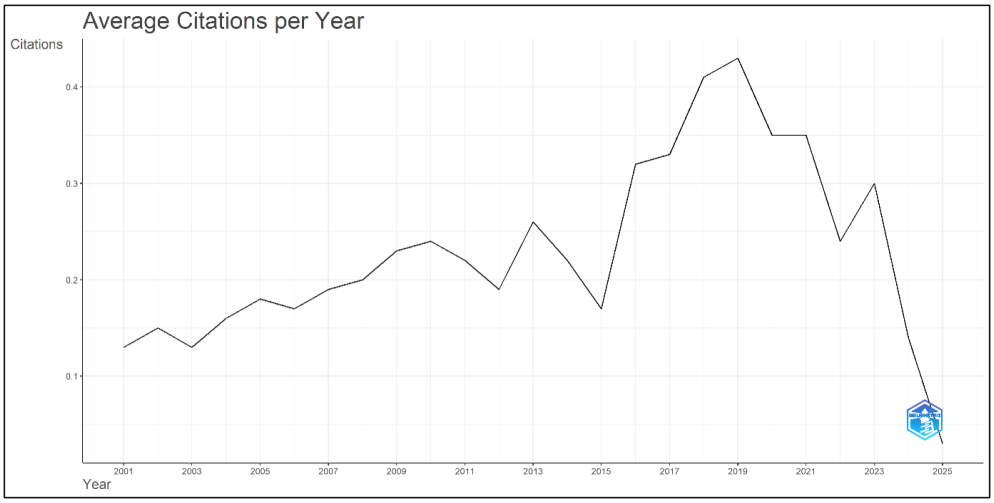


Figure 2: Average citations per year.

Table 1: Main information of the study.

Description	Results
Main Information About Data	
Timespan	2001:2025
Sources (Journals, Books, etc.)	1
Documents	19537
Annual Growth Rate %	-4.17
Document Average Age	12.5
Average citations per doc	2.95
References	0
Document Contents	
Keywords Plus (ID)	4673
Author's Keywords (DE)	36459
AUTHORS	
Authors	38426
Authors of single-authored docs	1038
Authors Collaboration	
Single-authored docs	1569
Co-Authors per Doc	3.59
International co-authorships %	5.436
Document Types	
Article	18543
Conference paper	620
Erratum	22
Note	36
Review	301
Short survey	15

the journal. Portion, showing that small to mid-sized collaborative teams are dominant in the journal. Authorship gradually declines with higher numbers of co-authors, with six author and above combinations contributing progressively smaller percentages. The cumulative percentage reaches over 93% by six authors, and nearly 100% by fourteen authors. The high Collaboration Coefficient (CC) of 0.9199 strongly reinforces the trend towards collaborative works in the journal. Overall, the data underscores a highly collaborative publishing culture within the Asian Journal of Chemistry, emphasizing teamwork and shared scientific contributions.

Author Productivity through Loka's Law

Figure 3 presents a classic visualization of author productivity within a given body of academic or scientific literature. It demonstrates Lotka's law, which predicts that the number of authors publishing n papers is about $1/n^2$ of those publishing one paper. This means a few authors contribute a large number of publications, while the majority contribute only one. In the graph, the X-axis represents the number of documents written (I.e.,productivity, while the y-axis shows the percentage of authors contributing at each productivity level. The plot reveals a steep decline from the highest point on the left, indicating that a large majority of authors have written only a single document. This is characteristic of Lotka's law, where about 60-70% of authors are onle-time contributors. As we move rightward along the x-axis, the curve flattens dramatically, showing that very few authors have written a large number of documents, highlighting the skewed distribution of productivity in scholarly publishing. The smooth, sharply descending curve visually supports Lotka's empirical rule and implies that the data follows a power-law distribution. The tail of the curve extending toward the right with a near zero y-value illustrates that a tiny fraction of authors are prolific, publishing dozens or even over a hundred documents. The use of a fine dashed line accompanying the main curve may represent the theoretical model or fitted curve for comparison with empirical data. This visualization is critical in bibliometric and scientometric studies, as it reflects research contribution, helps identify core contributors in a domain, and is essential in understanding patterns of knowledge production. The logo in the bottom-right corner (Biblometric) indicates the analysis was generated using the Biblometrix R package, a widely used tool for scientometric studies. The graph affirms Lotka's law in the studies dataset, highlighting that most authors contribute minimally while a few drives the bulk of scholarly output essential insight into author productivity patterns in scientific research.

Most Collaborative countries

Figure 4 shows that the country collaboration network map was generated using VOSviewer, revealing the international research landscape and inter-country collaborations contributing to the Asian Journal of Chemistry. Each node in the visualization represents a country, with the node size proportional to its publication volume, and the links between nodes indicating the frequency and strength of co-authorship relationships.

India stands out as the most dominant contributor, reflected by the largest node, signifying a high volume of publications and extensive collaborative ties. China and Iran follow closely behind, also occupying central and influential positions in the network, showcasing their strong scientific output and engagement in joint research. Countries such as Pakistan, Saudi Arabia, Egypt, and South Korea also exhibit significant participation and are closely linked to India and Iran, forming dense clusters indicative of regional cooperation.

The map features several distinct clusters, each represented by a different color, suggesting regional or linguistic affinities. For instance, India, South Korea, Ethiopia, and Nepal form one such cluster, while Saudi Arabia, Pakistan, Egypt, and Algeria comprise another, indicating strong intra-cluster collaboration. European and non-Asian countries such as Italy, France, Spain, and the United States appear less central but are connected

through multiple thin lines, showing occasional or secondary collaboration.

Overall, the map illustrates a vibrant and interconnected network, with India as a central hub linking various Asian, Middle Eastern, and African countries. The clustering and linking patterns reflect both geographic proximity and research interests, reinforcing the Asian Journal of Chemistry's role as a platform for cross-border scientific cooperation within and beyond Asia.

Most Collaborative Institutions

Figure 5 shows that the organizational research output map was generated using VOSviewer visually represents the collaborative landscape of institutions contributing to the Asian Journal of Chemistry. The network visualization highlights various academic and research institutions with node sizes reflecting the volume of scientific output and connectivity denoting collaboration intensity or co-authorship frequency.

At the centre of the map, the "School of Chemical and Biological" emerges as the most prominent contributor, indicated by the largest node size. This suggests a significant volume of publications from this institution, as well as potential centrality in collaborative networks. Other notable institutions with substantial output include "Department of Chemistry, Islam", "Department of Chemistry, University", "Department of Advanced Materials", and "NTT Hi-Tech Institute, Nguyen". These entities also exhibit strong inter-institutional collaboration, as evidenced by their proximity to other nodes and larger cluster sizes.

Several clusters appear, each likely representing regional or thematic collaborations. For instance, departments of pharmaceutical sciences and various chemistry departments from colleges and universities form dense clusters, reflecting interdisciplinary research and shared academic interests. The occurrence of truncated names such as "Faculty," "University," or "Chemi" suggests possible data entry inconsistencies or software limitations during processing, which slightly affects the precision

Table 2: Annual publication Trend.

Sl. No.	Year	Volume	Total Issue
1.	2001	13	4
2.	2002	14	3
3.	2003	15	3
4.	2004	16	3
5.	2005	17	4
6.	2006	18	5
7.	2007	19	7
8.	2008	20	8
9.	2009	21	10
10.	2010	22	10
11.	2011	23	12
12.	2012	24	12
13.	2013	25	18 + Supplementary issue
14.	2014	26	24
15.	2015	27	12
16.	2016	28	12
17.	2017	29	12
18.	2018	30	12
19.	2019	31	12
20.	2020	32	12
21.	2021	33	12
22.	2022	34	12
23.	2023	35	12
24.	2024	36	12
25.	2025	37	4

Table 3: **Authorship pattern of the Asian Journal of Chemistry.**

Sl. No.	Authors	No. of Papers	% of 19537	Cumulative Total	Cumulative Percentage	Collaboration Coefficient (CC)
1.	Single Author	1566	8.02	1566	8.02	0.9199
2.	Author2	4281	21.91	5847	29.93	
3.	Author3	4731	24.22	10578	54.14	
4.	Author4	3824	19.57	14402	73.72	
5.	Author5	2517	12.88	16919	86.60	
6.	Author6	1436	7.35	18355	93.95	
7.	Author7	655	3.35	19010	97.30	
8.	Author8	287	1.47	19297	98.77	
9.	Author9	130	0.67	19427	99.44	
10.	Author10	62	0.32	19489	99.75	
11.	Author11	25	0.13	19514	99.88	
12.	Author12	8	0.04	19522	99.92	
13.	Author13	6	0.03	19528	99.95	
14.	Author14	6	0.03	19534	99.98	
15.	Author15	2	0.01	19536	99.99	
16.	Author18	1	0.01	19537	100.00	
	Total	19537	100.00			

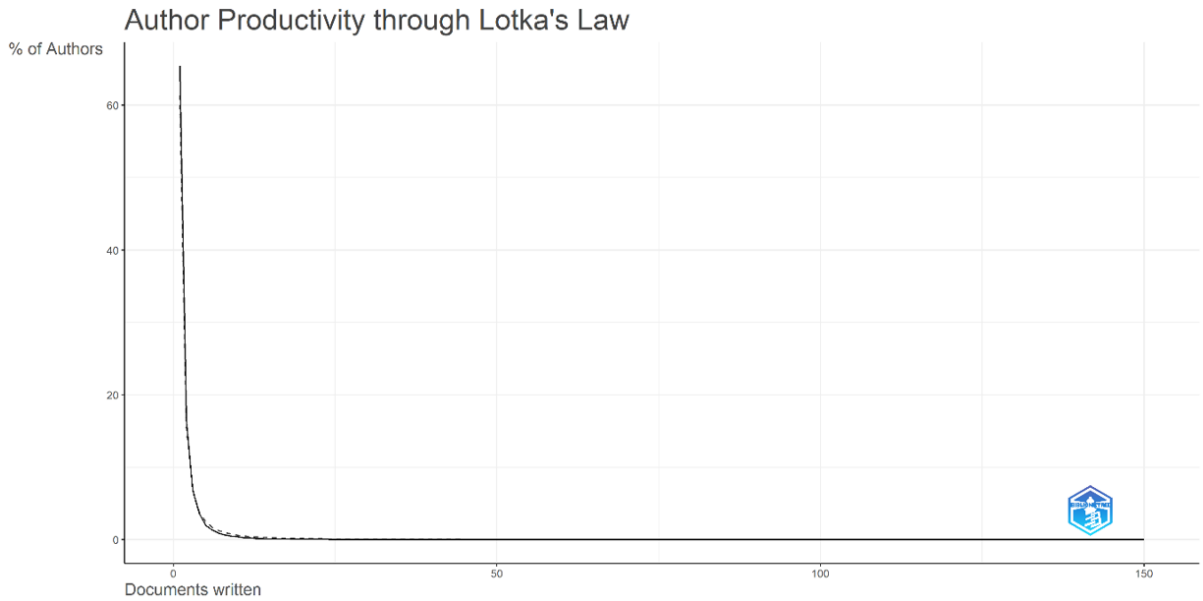


Figure 3: Author productivity through Lotka's Law.

of institutional identification but not the overall interpretative value.

The presence of numerous smaller nodes scattered around the periphery indicates a wide range of institutions with occasional or isolated contributions, highlighting the broad authorship base but also pointing to a relatively centralized structure of frequent contributors. the organizational mapping of the Asian Journal of Chemistry reflects a concentrated contribution from key chemical and pharmaceutical research institutions, with some hubs playing a pivotal role in research dissemination. The map underscores the journal's strong engagement with academic institutions across Asia and its role in facilitating collaborative scientific discourse in the field of chemistry.

Most Prolific authors

Figure 6 indicates that the analysis of the most relevant authors based on their research output in the Asian Journal of Chemistry reveals significant contributions from several prolific scholars. Hu,

Qiufen, emerges as the leading author with a remarkable output of 86 documents, indicating sustained and dominant engagement with the journal over time. This is followed by Lim, Chang Sung, who has published 68 papers, further highlighting a strong and consistent research presence. Authors such as Bi, Jian-Hong (59 documents), Oh, Won-Chun (57), Yang, Guangyu (56), and Zhai, Qing-Zhou (56) also demonstrate substantial scholarly activity, suggesting their centrality in the journal's research community.

Further down the list, authors like Row, K.H. (48), Dubey, P.K. (46), Ahmad, Ateeque (45), and Dong, Xiu-Yan (45) also contribute significantly, underscoring the journal's diverse author base spanning across multiple regions and institutions. The clustering of publication numbers among these authors suggests a competitive and collaborative research environment.

Many of these prolific contributors are likely engaged in core areas of chemistry relevant to the journal's scope, and their consistent output plays a critical role in shaping its scientific identity and citation impact. This pattern of concentrated authorship also reflects the journal's role as a preferred platform for established researchers in the Asian scientific community.

Most relevant topics

Figure 7 indicates that the analysis of the most relevant topics in the Asian Journal of Chemistry, based on the frequency of

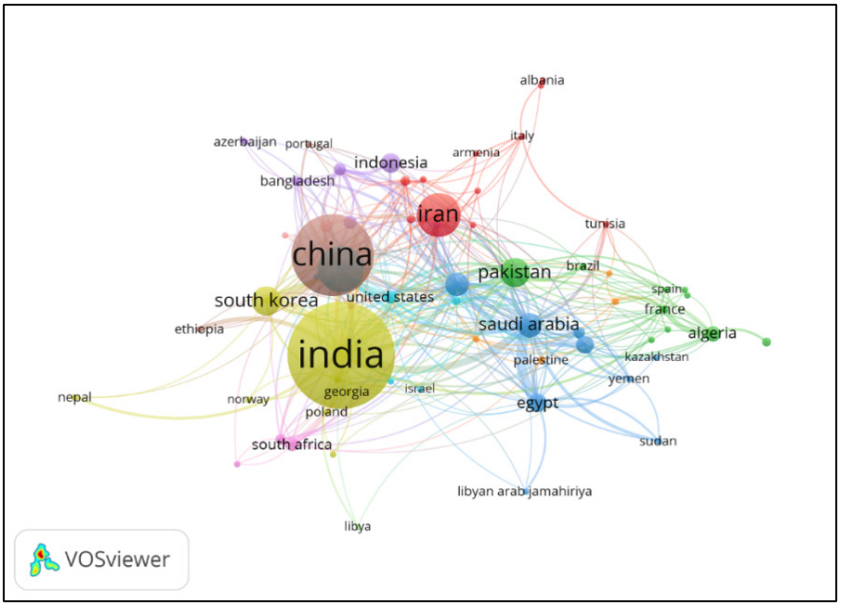


Figure 4: Top top-most collaborative countries network map.

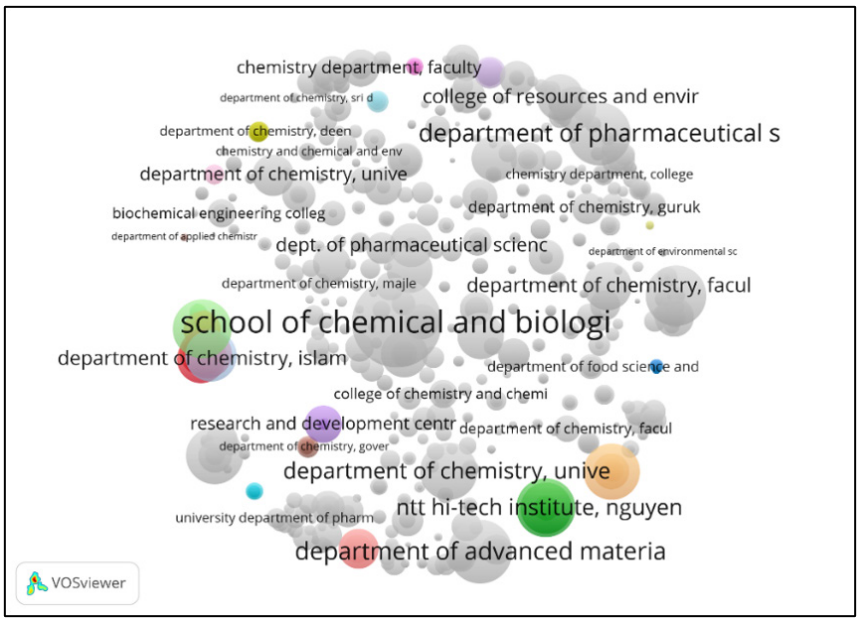


Figure 5: The top-most productive institutions' network.

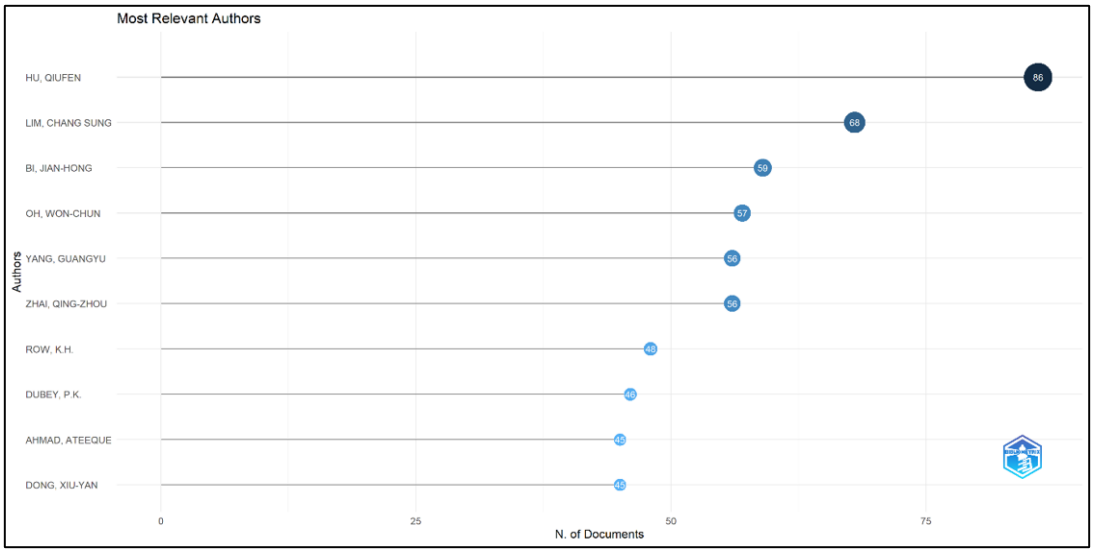


Figure 6: Top collaboration authors' network.

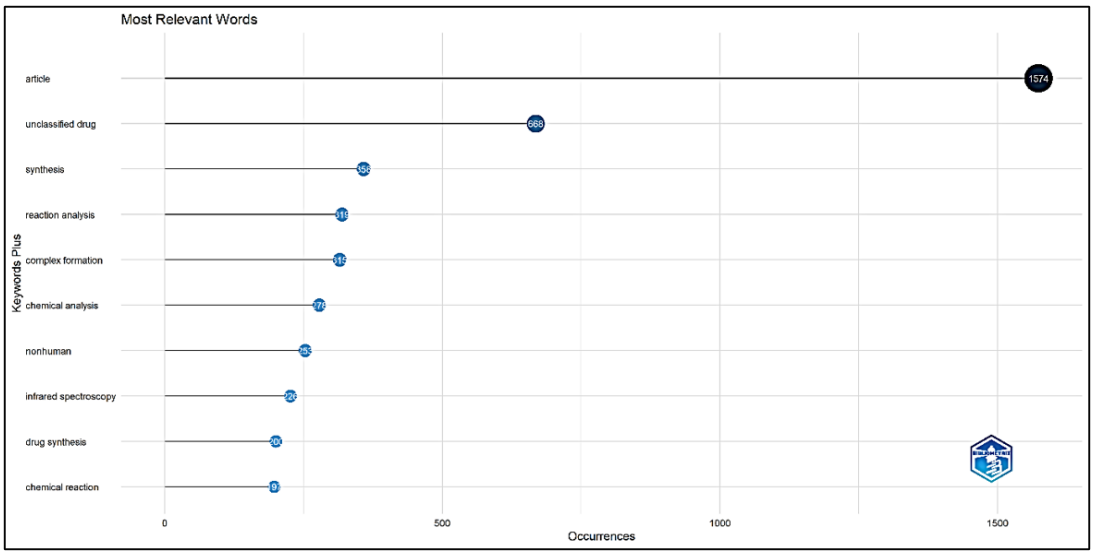


Figure 7: Most relevant words.

Keywords Plus, highlights a strong focus on foundational and applied areas of chemical research. The term "article" dominates with 1574 occurrences, indicating that the dataset heavily references full research articles, suggesting a comprehensive scope in published content. Following this, "unclassified drug" with 668 mentions suggests a significant body of work related to drug discovery or pharmaceutical compounds that have yet to be classified, underlining the journal's contribution to emerging medicinal chemistry.

Key research themes include "synthesis" (356 occurrences), "reaction analysis" (319), and "complex formation" (316), revealing a clear emphasis on experimental and mechanistic chemistry. These keywords point toward extensive studies in chemical synthesis processes, reaction mechanisms, and coordination chemistry, which are central to both academic inquiry and industrial application.

Other prominent terms such as "chemical analysis" (276), "infrared spectroscopy" (226), and "chemical reaction" (197) reflect the journal's attention to analytical techniques and molecular characterization. Additionally, the presence of "nonhuman" (255) implies research involving biological or pharmacological testing, possibly in animal models, reinforcing the journal's interdisciplinary nature bridging chemistry and biomedical science.

Overall, the most relevant topics published in the Asian Journal of Chemistry demonstrate a well-rounded mix of synthetic methodologies, analytical practices, pharmaceutical explorations, and interdisciplinary research, establishing the journal as a significant platform for diverse areas of chemical science.

Word tree map

Figure 8 illustrates that the tree map visualization of the Asian Journal of Chemistry research output provides a comprehensive overview of the most frequently occurring topics, offering insights into the thematic focus of the journal. Each block in the tree map represents a keyword (primarily from "Keywords Plus"), with its size proportional to the number of occurrences and percentage share in the dataset.

At the forefront is the term "article" with 1574 occurrences (19%), serving as a metadata indicator that confirms the inclusion of a substantial number of research articles. This is followed by "unclassified drug" (668 occurrences; 8%), indicating a robust body of research in pharmaceuticals, especially emerging or newly synthesized compounds not yet formally classified. Core chemistry themes are well-represented. "Synthesis" (358; 4%), "reaction analysis" (319; 4%), and "complex formation" (315; 4%) highlight a strong emphasis on synthetic methodologies and coordination chemistry. These are complemented by "chemical analysis" (278; 3%) and "infrared spectroscopy" (226; 3%), suggesting extensive use of analytical techniques to characterize chemical structures and reactions.

Biological and pharmacological research is also a key focus, as seen in "nonhuman" (253; 3%), "drug synthesis" (200; 2%), "drug structure" (111; 1%), and "antibacterial activity" (101; 1%), pointing to interdisciplinary studies involving chemistry and biomedical sciences.

Further, the journal explores a wide variety of specialized topics including "polymerization" (119), "magnetism" (120), and "oxidation" (99), revealing research into materials and physical chemistry. The frequent appearance of terms like "chemical structure" (184), "spectrophotometry" (160), and "structure analysis" (131) underscores the journal's strength in molecular and structural investigations.

Notably, numerous coordination compounds are featured, such as "nickel complex", "cobalt complex", "copper complex", and "metal complex" each with over 90 occurrences highlighting research in inorganic chemistry and metal-ligand interactions. Terms such as "ligand" (126) and "chemical composition" (105) further reinforce this.

The appearance of applied and evaluative terms like "accuracy", "calculation", "conductance", and "ionic strength" suggests a quantitative and precision-focused approach in the studies. Meanwhile, geographic and contextual keywords like "India" (80) point to the journal's regional relevance and authorship trends. In conclusion, the treemap reveals that the Asian Journal of Chemistry showcases a balanced and diverse portfolio of research topics-ranging from synthetic and analytical chemistry to pharmaceutical sciences and materials chemistry-making it a multidisciplinary platform for advancing chemical knowledge in Asia and beyond.

Keyword occurrence

Figure 9 shows that the VOS viewer keyword co-occurrence map of the Asian Journal of Chemistry research output presents a rich, multidimensional view of the journal's thematic landscape, offering insights into prominent research trends and interconnections among topics. The visualization is structured

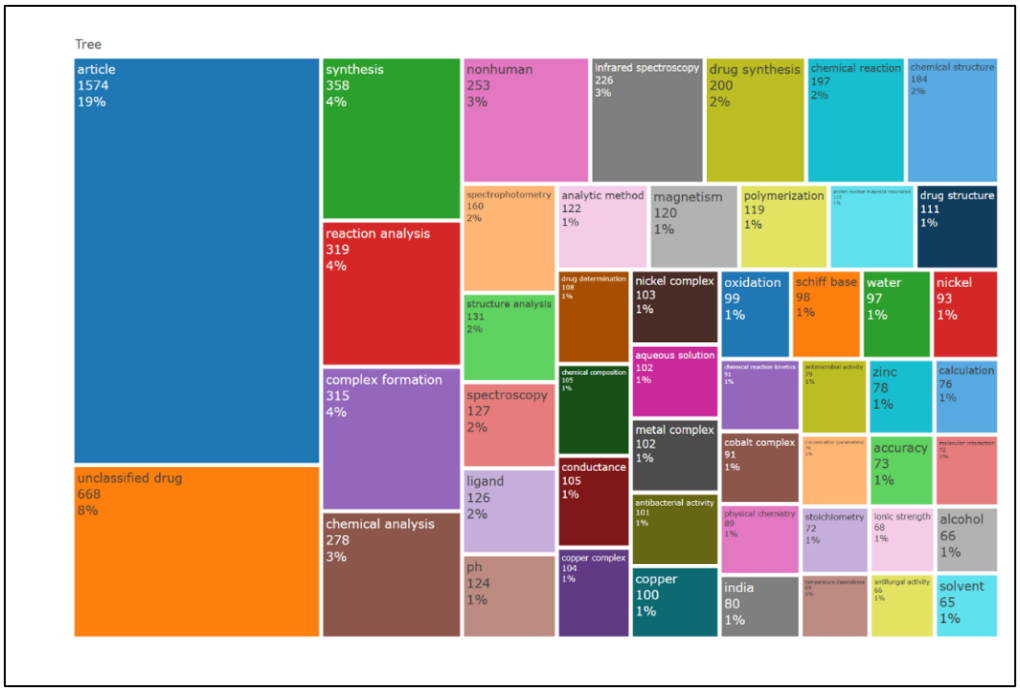


Figure 8: Tree map of keywords.

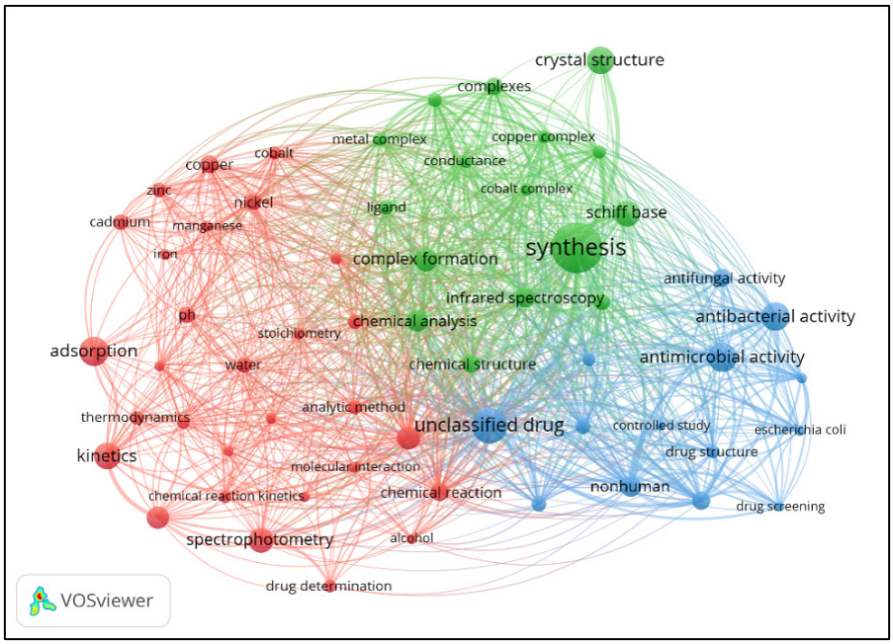


Figure 9: Keywords co-occurrence network.

into distinct clusters, each represented by a different color, demonstrating how various research keywords group together based on their co-occurrence in published literature.

At the centre of the network lies the dominant term "synthesis", prominently featured in the green cluster. This cluster encapsulates core inorganic and coordination chemistry themes such as "complex formation", "metal complex", "copper complex", "cobalt complex", "ligand", "infrared spectroscopy", and "crystal structure". These terms indicate a strong research focus on synthesizing new compounds and characterizing their structural properties. The interconnectivity within this cluster highlights a tightly knit body of literature that emphasizes structural chemistry, spectroscopic methods, and compound analysis.

The blue cluster, positioned to the right, revolves around biomedical and pharmaceutical research themes, with keywords like "unclassified drug", "antibacterial activity", "antifungal activity", "antimicrobial activity", "nonhuman", and "drug structure". This group reflects the journal's contribution to pharmaceutical and drug discovery research, where synthetic chemistry intersects with biological testing and pharmacological evaluation. The term "nonhuman" suggests a focus on preclinical research models, reinforcing the translational nature of the studies.

In contrast, the red cluster, located toward the left, centres around physicochemical studies and environmental applications. Key terms include "adsorption", "kinetics", "spectro photometry", "ph", "stoichiometry", "thermodynamics", "chemical reaction kinetics", and various metals like "nickel", "copper", "zinc", and "cadmium". This cluster reflects significant research on metal ions, environmental chemistry, and material interaction with pollutants or reagents-possibly indicating adsorption studies for water purification, catalysis, or surface chemistry.

At the intersection of these clusters, terms like "chemical analysis", "chemical structure", and "chemical reaction" act as bridges, indicating that these concepts are foundational and appear across diverse chemical subfields. The keyword "unclassified drug", also centrally placed, shows its interdisciplinary presence, linking drug design with structural, analytical, and biological chemistry.

The VOSviewer map reveals the Asian Journal of Chemistry as a multidisciplinary platform covering a broad spectrum of research in inorganic synthesis, environmental and physical chemistry, and pharmaceutical sciences. The interconnectedness of clusters underscores the journal's integrative approach, fostering cross-disciplinary research that links fundamental chemistry with applied sciences.

Highly cited papers

Table 4 indicates that the analysis of the top 20 most highly cited papers published in the Asian Journal of Chemistry offers critical insights into the journal's impactful research themes, preferred study areas, and citation patterns. This table reveals a broad spectrum of influential research spanning materials science, environmental chemistry, phytochemistry, and nanotechnology. The most cited article (TC=155) by Alkaim A.F *et al.* (2014) discusses the adsorption and photocatalytic degradation of methylene blue, emphasizing the journal's strength in environmental remediation and water treatment. This theme recurs across several top-cited papers, such as Maleki *et al.* (2011) on cadmium adsorption using barley hull ash (TC=88) and Aljebori and Alshirifi (2012) on textile dye removal using white marble (TC=69), highlighting a consistent focus on heavy

Table 4: Highly cited papers.

Sl. No.	Title	Authors	TC	year
1.	Effect of pH on adsorption and photocatalytic degradation efficiency of different catalysts on removal of methylene blue.	Alkaim A.F *et al.*	155	2014
2.	Dyeing of cotton fabric using pomegranate (*Punica granatum*) aqueous extract.	Adeel, Shahid *et al.*	112	2009
3.	Characterization of zeolites by infrared spectroscopy.	Byrappa, K. *et al.*	105	2007
4.	Aqueous cadmium removal by adsorption on barley hull and barley hull ash.	Maleki, A *et al.*	88	2011
5.	Phytochemical constituents and pharmacological activities of sweet *Basil-Ocimum basilicum* L. (Lamiaceae).	Marwat, Sarfaraz Khan	86	2011
6.	Synthesis and antimicrobial activity of some Schiff bases from benzothiazoles.	Shaikh Kabeer, A *et al.*	86	2001
7.	Formulation and characterization of plant essential oil based nanoemulsion: Evaluation of its larvicidal activity against *Aedes*.	Ghosh, Vijayalakshmi, *et al.*	85	2013
8.	An overview on biofuels and their advantages and disadvantages.	Datta, A *et al.*	80	1019
9.	Preparation and characterization of graphene oxide reduced from a mild chemical method.	Oh, W.-C. *et al.*	80	2011
10.	Phytotherapy of diabetes in West Algeria.	Allali, H *et al.*	80	2008
11.	Chemical properties of treated textile dyeing wastewater.	Hussein, Falah H.	76	2013
12.	Colloidal synthesis of silver nano particles.	Ratyakshi and Chauhan RR	74	2009
13.	Qualitative analysis of high-density polyethene using FTIR spectroscopy.	Charles, J., Ramkumaar, G	70	2009
14.	Effect of different parameters on the adsorption of textile dye maxilon blue GRL from aqueous solution by using white marble.	Aljebori, A.M.K., Alshirifi,	69	2012
15.	A novel application of hydrotropic solubilization in the analysis of bulk samples of ketoprofen and salicylic acid.	Maheshwari, R.K	66	2006
16.	Kinetic study of Cr(III) and Cr(VI) biosorption using *Rosa damascena* phytomass: A rose waste biomass.	Iqbal, M.J. *et al.*	65	2013
17.	Separation and purification of some components of Iranian saffron.	Bolhasani, A *et al.*	64	2005
18.	Heavy metal content of roadside soils along ring road in Riyadh (Saudi Arabia).	Al-Shayeb, S.M.	64	2001
19.	Synthesis and characterization of silver oxide and silver chloride nanoparticles with high thermal stability.	Siddiqui, M.R.H	63	2013
20.	Arsenic in drinking water: A review on toxicological effects, mechanism of accumulation and remediation.	Khan, M.A	63	2011

metal and dye removal techniques. Research on natural product applications also garners significant attention. Adeel *et al.* (2009) (TC=112) explored the dyeing potential of pomegranate extract, and Ghosh *et al.* (2013)

(TC=85) Investigated the larvicidal effect of essential oil nanoemulsions. Similarly, the study by Marwat (2011) on the phytochemical and pharmacological properties of *Ocimum basilicum* (TC=86) reflects strong interest in medicinal plants and phytopharmacology, particularly relevant to ethnobotany and herbal medicine. Nanotechnology features prominently in several entries. The colloidal synthesis of silver nanoparticles (Ratyakshi and Chauhan, 2009; TC=74), graphene oxide characterization (Oh *et al.*, 2011; TC=80), and silver oxide/chloride nanoparticles (Siddiqui, 2013; TC=63) underscore a sustained emphasis on nanomaterials and their synthesis for diverse applications, including antimicrobial activity and thermal stability.

Papers like Byrappa *et al.* (2007) on zeolite characterisation using infrared spectroscopy (TC= 105) and Charles and Ramkumaar (2009) on FTIR spectroscopy of HDPE (TC=70) emphasise the application of analytical techniques in material characterisation, resonating with industrial and polymer chemistry sectors.

Some articles address broader concerns-biofuels and energy (Datta *et al.*, 1019, TC=80), arsenic toxicity in water (Khan, 2011; TC=63), and heavy metals in soils (Al-Shayeb, 2001; TC=64)-showcasing the journal's environmental and sustainability-oriented research contributions. From a temporal distribution perspective, papers from 2001 to 2014 dominate, with peak contributions around

2009-2013, suggesting that impactful works published during this decade have accrued substantial citations over time. Authors from diverse geographic backgrounds, including the Middle East, South Asia, and Africa, demonstrate the journal's international research appeal.

This top-cited paper list reflects the Asian Journal of Chemistry's strength in environmental remediation, natural products and phytochemistry, analytical techniques, and nanoscience. The interdisciplinary nature of these topics, blending chemistry with environmental and biomedical applications, underlines the journal's broad scientific relevance and citation impact.

Thematic analysis

Figure 10 indicates that the thematic map analysis of research published in the Asian Journal of Chemistry provides a comprehensive overview of the journal's intellectual structure and evolving research priorities. The map categorises themes based on their centrality (relevance) and density (development), dividing them into four quadrants: motor themes, basic themes, niche themes, and emerging or declining themes.

In the motor themes quadrant, which includes topics that are both well-developed and highly relevant, themes such as unclassified drug, synthesis, and complex formation dominate. These represent the journal's central research focus and reflect its strong orientation towards applied and synthetic chemistry, particularly in the pharmaceutical and coordination chemistry domains.

The niche themes quadrant shows themes like nonhuman, drug synthesis, and drug structure, which are highly developed but have limited relevance across the broader field. These are specialized areas that may contribute deeply within their sub-disciplines, such as drug design for veterinary use or structural studies in medicinal chemistry, but do not connect broadly with other research topics.

In the basic theme's quadrant, which features central yet underdeveloped areas, themes such as article, reaction analysis, and chemical reaction appear. These are foundational topics in chemical research, suggesting they are frequently addressed but may lack methodological advancement or innovation in the journal's current output. Their centrality indicates their importance to the journal's scope, and their low-density signals potential for further scholarly development.

Finally, the emerging or declining themes quadrant includes pH, spectrophotometry, and drug determination. These topics are characterized by low centrality and low development, suggesting that they are either losing prominence due to advancements in analytical techniques or are in the early stages of re-emerging interest. Their presence may indicate opportunities for revival through modern approaches or signal a shift in research focus away from traditional analytical methods.

Overall, the thematic map illustrates that the Asian Journal of Chemistry is strongly anchored in drug synthesis and chemical reaction studies, while also showing areas of specialization and potential decline. This insight is valuable for researchers and contributors aiming to align their work with the journal's core and emerging areas of interest.

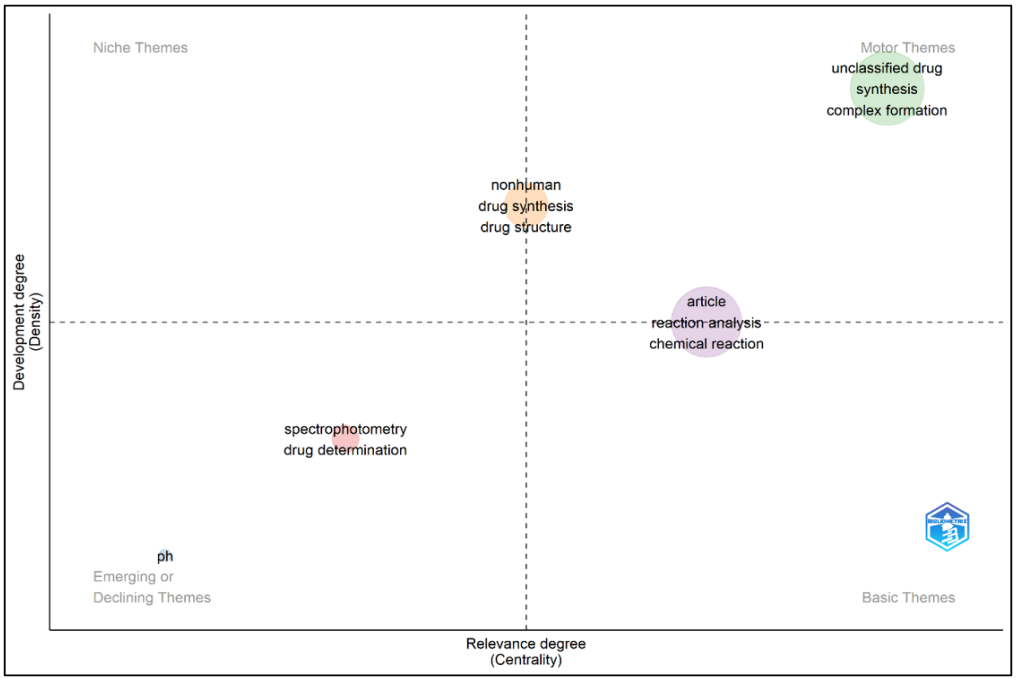


Figure 10: Thematic map.

Funding Agencies

Figure 11 shows that the analysis of funding agency contributions to research published in the Asian Journal of Chemistry reveals a strong presence of Indian institutions, underscoring the journal's regional focus and relevance. The University Grants Commission (UGC) of India tops the list with 146 publications, highlighting its pivotal role in promoting chemical research across Indian universities.

This is followed closely by the Department of Science and Technology (DST), Ministry of Science and Technology, India, with 93 papers, and the National Natural Science Foundation of China with 83 publications, indicating significant bilateral research output from China. The University Grants Committee (likely referring to an entity from Hong Kong or another administrative region) also contributed a substantial 82 papers, further emphasizing the journal's appeal in the broader Asian academic landscape. Among other major Indian funders, the Council of Scientific and Industrial Research (CSIR) and the Science and Engineering Research Board (SERB) contributed 70 and 29 publications, respectively. Malaysia is well represented by the Ministry of Higher Education (44), University Kebangsaan Malaysia (16), and University Malaysia Terengganu (15), reflecting its growing research footprint. Notably, individual academic departments such as the Department of Chemistry, Aligarh Muslim University and the Department of Chemistry, University of York have contributed 30 and 22 papers, respectively, suggesting departmental-level research support and collaboration. Contributions from national research foundations in Korea and South Africa (e.g., National Research Foundation of Korea, Vaal University of Technology) also point to a modest international diversity. Overall, the funding landscape in the Asian Journal of Chemistry is dominated by Indian institutions, complemented by meaningful support from China, Malaysia, Korea, and select universities in Saudi Arabia and the UK, reflecting a mix of national and institutional support for research dissemination in the journal.

DISCUSSION

The top 20 most highly cited papers highlight the journal's emphasis on interdisciplinary and application-oriented research, particularly in environmental remediation, nanotechnology, natural product chemistry, and spectroscopy. The most cited article, "Effect of pH on adsorption and photocatalytic degradation efficiency…" by Alkaim A.F. *et al.* (2014), with 155 citations, underscores a strong interest in environmental chemistry and wastewater treatment - themes echoed across several other papers. Similarly, works focusing on natural dyeing processes, nanomaterials (e.g., silver nanoparticles and graphene oxide), and phytochemical analysis demonstrate the journal's appeal in areas combining chemistry with sustainable technologies and biological applications.

The presence of research from diverse countries and authors also indicates the journal's regional and international reach, with notable contributions from India, Iraq, Saudi Arabia, and Algeria. The period of the most-cited papers ranges from 2001 to 2014, suggesting sustained research impact and that the journal maintains a solid reputation for publishing enduring scientific work. The thematic map analysis offers further clarity by categorising research areas into four quadrants. Motor Themes: These include high-density and high-centrality topics such as unclassified drugs, synthesis, and complex formation. These themes are vital to the journal's identity and represent the most influential and actively developing areas of research. Basic Themes: Topics such as chemical reaction, reaction analysis, and article reflect the foundational nature of much of the published research. These are broadly relevant but may require deeper development and integration of new techniques or perspectives. **Niche Themes:** Drug structure and nonhuman studies appear here, indicating well-developed yet specialised subfields that do

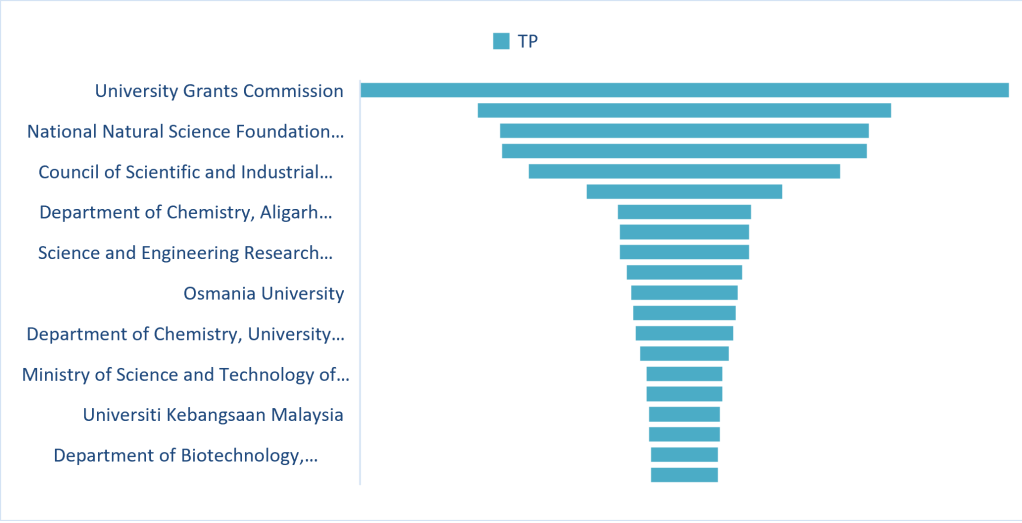


Figure 11: Top 20 Most Funded Agencies.

not intersect broadly with other research areas. Emerging or **Declining Themes:** Themes like pH, spectrophotometry, and drug determination suggest areas that may be losing traction or are in need of innovative reinvigoration through new methodologies or technologies.

Overall Observations

Interdisciplinary Focus

The journal accommodates a wide spectrum of topics from traditional organic synthesis to modern nanotechnology and environmental applications, reflecting the interdisciplinary nature of modern chemical research.

Application-Driven Research

Many highly cited papers involve practical applications, such as water purification, green chemistry, and biomedical applications. This aligns with global research trends toward sustainability and health.

Strong Analytical Component

Frequent use of FTIR, UV-vis spectroscopy, and other analytical tools indicates a robust foundation in characterisation techniques.

Geographical and Author Diversity

The diversity of contributors points to a growing interest from researchers across Asia and the Middle East, highlighting the journal's role in fostering regional scientific discourse.

Scope for Innovation

While foundational themes remain strong, areas such as traditional spectroscopy and pH studies may benefit from modernisation and deeper integration with current technologies like machine learning, advanced materials, and green chemistry.

The Asian Journal of Chemistry serves as an important platform for advancing chemical sciences in Asia and beyond. It consistently publishes high-impact research in environmental chemistry, nanotechnology, drug synthesis, and natural product chemistry. Thematic and citation analyses reveal a journal that is both rooted in foundational chemical sciences and responsive to emerging trends, offering valuable opportunities for researchers, especially those focused on applied and interdisciplinary innovations.

CONCLUSION

The study of research output in the Asian Journal of Chemistry provides a comprehensive understanding of the journal's scholarly impact, thematic focus, and research evolution over time. The analysis of the top 20 most highly cited articles reveals a predominant emphasis on applied chemical research, particularly in the areas of environmental remediation, nanoscience, phytochemistry, and analytical methods. These high-impact publications reflect the journal's ability to attract work that not only advances scientific knowledge but also addresses practical, real-world challenges, such as water purification, green synthesis, and public health-related chemical studies. The thematic map further strengthens this observation by showing that core research themes in the journal are centered on drug synthesis, chemical reaction mechanisms, and complex formation-areas that are well-developed, widely connected, and continuously evolving. The presence of "Motor Themes" indicates active, cutting-edge research directions, while the "Basic Themes," such as reaction analysis, serve as the foundational pillars of the journal's content. Meanwhile, the presence of topics like pH studies and basic spectrophotometry in the "Emerging or Declining Themes" quadrant suggests that certain classical areas may be losing prominence unless revitalized by integrating modern scientific tools or interdisciplinary approaches. This investigation also highlights the journal's contribution to disseminating research from diverse geographic regions, particularly from Asia and the Middle East, thereby facilitating global visibility for local innovations. The prominence of Indian and Middle Eastern researchers in the most cited list underscores the journal's significant role in nurturing scientific discourse in these regions. Additionally, the diverse authorship and range of publication years among top-cited articles indicate a sustained level of scholarly engagement and citation longevity. The Asian Journal of Chemistry stands as a robust platform for disseminating both foundational and innovative chemical research. It plays a vital role in shaping applied chemical science across the Asian continent and beyond. However, to remain at the forefront of scientific advancement, the journal may benefit from encouraging submissions in emerging interdisciplinary fields, promoting novel methodologies, and emphasising global challenges such as green chemistry, materials science, and molecular-level innovations. This strategic orientation could further elevate its impact and relevance in the global research community.

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ABBREVIATIONS

TP: Total Publication; **TC:** Total Citations; **ACP:** Average Citations per paper; **HCPS:** Highly cited paper; **CC:** Collaboration Coefficient.

CONFLICT OF INTEREST

The authors declare that there is no conflict of Interest.

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AUTHOR CONTRIBUTIONS

Chaman Sab M: Data collection, data analysis, manuscript writing, manuscript editing and corresponding author responsibilities. Madhu S: Conceptualisation, literature search. Sateesha H and Chandrashekar M: Reviewed and approved the final version of the manuscript.

REFERENCES

Abafe, E. A., Bahta, Y. T., & Jordaan, H. (2022). Exploring Biblioshiny for Historical Assessment of Global Research on Sustainable Use of Water in Agriculture. Sustainability (Switzerland), 14(17). https://doi.org/10.3390/su141710651

Ahmed KK, M., & Sab M, C. (2023). Analysing the Impact of ChatGPT Using Scientometrics. International Journal of Pharmaceutical Investigation, 13(4), 904-914. https://doi.org/10.5530/ijpi.13.4.114

Ankaram. (2013). Indian Streams. Indian Streams Research Journal, 3(10), 4-11.

Bhattacharya, S., & Basu, P. K. (1998). Mapping a research area at the micro level using co-word analysis. Scientometrics, 43(3), 359-372. https://doi.org/10.1007/BF02457404

Chester, K. *et al.* (2017) 'Bioautography-based Identification of Antioxidant Metabolites of *Solanum nigrum* L. and Explorati. Pharmacognosy Magazine, 13;Suppl(62), 179-188. https://doi.org/10.4103/pm.pm

Dhawan, S. M., Gupta, B. M., Gupta, R., Kumar, A., & Bansal, J. (2016). Quantitative assessment of global literature on 'web 2.0 and libraries'during 2006-15. DESIDOC Journal of Library and Information Technology, 36(5), 261-268. https://doi.org/10.14429/djlit.36.6.10350

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of Business Research, 133(May), 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

DR. S. Thanuksodi. (2014). Library Herald Journal: A Bibliometric Study. Journal of Education & Social Policy ISSN, 1(2), 2375-2782. http://www.researchersworld.com/vol2/issue4/Paper_8.pdf

M, C. S., Praveen, A. M., Eshwara, Y., Jali, S. B., Kk, M. A., & Yunus, M. (2026). Global COVID-19 and Environmental Sciences Research: A Scientometric Analysis of Highly-Cited Publications. 5(1), 1-16. https://doi.org/10.5530/jcitation.20260274

Mallikarjuna, B., Kappi, M., & Taj, S. (2024). Bibliometric Analysis of the Journal of Big Data: Trends, Impact, and Future Directions. Shanlax International Journal of Arts, Science and Humanities, 12(1), 100-114. https://doi.org/10.34293/sijash.v12i1.7762

Patra, S. K., Bhattacharya, P., & Verma, N. (2006). Bibliometric Study of Literature on Bibliometrics. DESIDOC Bulletin of Information Technology, 26(1), 27-32. https://doi.org/10.14429/dbit.26.1.3672

Sab, C., & Davanagere, C. (2024). Tracking Academic Influence: A Bibliometric Study of the INSPA Journal Tracking Academic Influence: A Bibliometric Study of the. November.

Sanni, S. A., & Zainab, A. N. (2011). Evaluating the influence of a medical journal using Google scholar. Learned Publishing, 24(2), 145-154. https://doi.org/10.1087/20110210

Science, I., State, K., Science, I., State, K., & State, K. (2020). Current Science: Bibliometric Visu a Liz a Tion Visua Based on Scopus D a T a Base. 756(December).

Thelen, M., & Hoffman, L. (2011). A Bibliometric Study of the "Journal of Humanistic Psychology." 3466603(3), 148. http://search.proquest.com/docview/885136837?accountid=10113%5Cnhttp://ne4ul9pz6b.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info:ofi/enc:UTF-8&rfr_id=info:sid/ProQuest+Dissertations+%26+Theses+Global&rft_val_fmt=info:ofi/fmt:kev:mtx:dissert

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523-538. https://doi.org/10.1007/s11192-009-0146-3

Veeramani, V., Sakthivelkumar, S., Tamilarasan, K., Aisha, S. O., & Janarthanan, S. (2014). Acaricidal activity of *Ocimum basilicum* and *Spilanthes acmella* against the ectoparasitic tick, *Rhipicephalus* (Boophilus) microplus (Arachinida: Ixodidae). Tropical Biomedicine, 31(3), 414-421.

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