

Research Output of Department of Chemistry, University of Mysore during 2005-2015

Ambika P. Patil

Library Project Assistant
Mysore University Library
University of Mysore,
Manasagangotri, Mysore – 570005 Karnataka State
e-mail: ambika228@gmail.com

Kavitha B. L.

Assistant Librarian
Rajarajeshwari Dental College & Hospital
Ramohalli Cross, Mysore – Bangalore Road
Bangalore – 560074 Karnataka State
e-mail: kavitha.mlisc2013@gmail.com

Praveen Kumari B. L.

Library Project Assistant
Mysore University Library
University of Mysore,
Manasagangotri, Mysore -570005 Karnataka State
e-mail: praveenkumari2009@gmail.com

Abstract: - *Research is the backbone of any subject field, not just required to be undertaken for its survival and sustenance but also for the furtherance of subject scope. This study assessed the level of research productivity of teaching faculty members in Department of Chemistry, University of Mysore during the period 2005-2015. In the present study attempt has been made to have an analysis of research output of Department of Chemistry, University of Mysore undertake the study, data was retrieved from Web of Science Thomson Reuters on January 22, 2016 and the analysis is being undertaken on those publications only identified on this particular databank.*

Key words: Research Output, Research productivity, Web of Science, Department of Chemistry, University of Mysore.

1.0 Introduction:

Faculty member of the university in India have to functions to perform, teaching and research. Researching in different topics come out with new results or new innovations. Research in the Department of Chemistry is innovative, collaborative and interdisciplinary by nature. Faculty, postdoctoral scholars, post graduate students all contribute to the rich research environment. Research plays an important role in developing a country. Research output of the University Scientists in the form of research paper in peer-reviewed scholarly journal is being considered as one of the main criteria for assessing the performance of the university scientists and faculty. To knowing the growth in Science and Technology in India need to monitor measure its

performance in Science and Technology. Some of this studies are helping to increase the research productivity in there discipline.

2.0 Brief History of Department

The department had been established even before the University was incorporated in 1916. In fact, a Chair in Chemistry had already been instituted in 1910 at the Central College with Dr. F.I. Usher, a distinguished student of Sir. William Ramsay, as the professor of Chemistry. In 1917, a Chair in Organic Chemistry was instituted and Mr. M.G. Srinivasa Rao became its occupant as the professor of Organic Chemistry. Later, Dr. B. Sanjiva Rao became the professor of General Chemistry.

The Department of Chemistry was also started along with Dr. C. Suryanarayana as the Head of the Department, who served for a brief period. A year later, under the able leadership f Prof. G. Narayan the department was befittingly shifted to the kitchen of Jayalakshmi Vilas Mansion, (now a museum and a part of this university), after the induction of Dr. H. Sanke gowda, Dr. K.S. Siddalingaiah and Dr. T.R. Ramaiah as permanent faculty members of the department, specialized in Inorganic Chemistry, Organic Chemistry and Biochemistry respectively. Four years later the post-graduate department of Chemistry was shifted to the new building on 28.03.1964, which was inaugurated by Padmabhushana Prof. M.S. Thacker, D.Sc., D.Litt.

3.0 Objectives of the study:

1. To study the publication pattern of Department of Chemistry, University of Mysore.
2. To measure the research output of Department of Chemistry, University of Mysore.
3. To analyze the contribution of the authors Department of Chemistry, University of Mysore.
4. To identify the strong and weak disciplines of Department of Chemistry, University of Mysore.

4.0 Methodology of the study:

The publication data of the university has been drawn from Web of Science Database January 22, 2016. Web of Science is published by Thomson Reuters, USA, it is an online version of Science Citation Index (SCI), a citation Index published by Institute for Scientific Information (ISI), Philadelphia. Publications data for 11 years from 2005 to 2015 were used for analyzing the growth and impact of Department of Chemistry, University of Mysore. A larger time coverage data has been used to ensure accurate results. The scope of this project is limited to the Department of Chemistry, University of Mysore.

5.0 Analysis and Interpretation of Data:

The analysis and interpretation of data collected is depicted in the following tables.

5.1 Growth and Impact of Research Output of Department of Chemistry, University of Mysore.

Table-1: Growth and Impact of Research Output of Department of Chemistry, University of Mysore.

Year	No. of papers	No. of Citations	Ave. Cit. Per Paper	h-Index
2005	21	163	7.76	7
2006	74	598	8.08	13
2007	163	638	3.91	9
2008	43	178	4.14	7
2009	69	223	3.23	8
2010	110	279	2.54	10
2011	114	246	2.16	8
2012	63	109	1.73	5
2013	49	141	2.88	7
2014	73	196	2.68	9
2015	67	32	0.48	3
Total	846	2803	3.599091	17

The table 1 shows variations in the number of papers published by Department of Chemistry, University of Mysore in the past 11 years, where the reasons for difference in number of papers published depends on the interest and situations of the individual. Department of Chemistry, University of Mysore has published 846, received 2803 citations and h-Index is 17 during 2005-2015. Maximum number of papers published by Department of Chemistry, University of Mysore during the year 2007 is 163, received 638 citations. Minimum number of papers published by Department of Chemistry, University of Mysore is 21 during the year 2005.

5.2 Cumulative Productivity in Journals of Department of Chemistry, University of Mysore.

Table-2: Cumulative Productivity in Journals of Department of Chemistry, University of Mysore.

Top cumulative journals	Cumulative no. of papers	Cumulative Share of papers
10	496	0.636
20	574	0.736
30	627	0.804
40	667	0.856
50	697	0.894
60	719	0.922
70	739	0.948
80	759	0.974
90	769	0.987

Table 2 shows the cumulative number of papers and share of papers of Department of Chemistry, University of Mysore.

According to this table top 10 Journals of Department of Chemistry, University of Mysore have published 496 papers.

5.3 List of most productive journals of Department of Chemistry, University of Mysore.

Table-3: List of most productive journals of Department of Chemistry, University of Mysore.

Sl. No.	List of Journals	No. of Articles
1	Acta Crystallographica Section E Structure Reports Online	349
2	Spectrochimica Acta Part A Molecular and Biomolecular Spectroscopy	29
3	Journal of Chemical Crystallography	22
4	Chemical Industry Chemical Engineering Quarterly	21
5	Bioorganic Medicinal Chemistry Letters	16
6	Indian Journal of Chemical Technology	15
7	Molecular Crystals and Liquid Crystals	13
8	Abstracts of Papers of the American Chemical Society	11
9	Zeitschrift Fur Kristallographie New Crystal Structures	10
10	Journal of Analytical Chemistry	10

The table 3 shows the list of top 10 most productive journals of Department of Chemistry, University of Mysore during the year 2005-2015. According to this table “Acta Crystallographica Section E Structure Reports Online” Journal (349) takes the 1st place in the list and “Zeitschrift Fur Kristallographie New Crystal Structures, Journal of Analytical Chemistry ” (10) takes the 10th place in the list.

5.4 Subjects – Wise Research output of Papers of Department of Chemistry, University of Mysore

Table-4: Subjects – Wise Research output of Papers of Department of Chemistry, University of Mysore

Sl. No.	Subject	No. of papers	No. of Citations	Ave. Cit. Per Paper	h-Index
1	Crystallography	417	1097	2.63	13
2	Chemistry	270	813	3.01	13
3	Pharmacology Pharmacy	69	356	5.16	10
4	Spectroscopy	62	176	2.84	8
5	Engineering	50	196	3.92	8
6	Science Technology other Topics	33	50	1.52	4
7	Biochemistry Molecular Biology	26	139	5.35	8
8	Materials Science	24	287	11.96	8
9	Polymer Science	21	168	8	7
10	Food Science Technology	10	32	3.2	3

The above table 4 shows subject wise break up of papers of Department of Chemistry, University of Mysore . Crystallography subject takes first place, 417 papers have been published.

5.5 Cumulative productivity of authors of Department of Chemistry, University of Mysore.

Table-5: Cumulative productivity of authors of Department of Chemistry, University of Mysore.

Top Cumulative Authors	Cumulative no. of papers	Cumulative Share of papers
10	569	0.722
20	621	0.788
30	650	0.824
40	691	0.876
50	707	0.897
60	734	0.931
70	745	0.954
80	759	0.945
90	777	0.986

Table 5 shows the cumulative authors of papers and share of authors of Department of Chemistry, University of Mysore . According to this table top 10 authors of Department of Chemistry, University of Mysore have published 569 papers.

5.6 Cumulative productivity of authors of Department of Chemistry, University of Mysore.

Table-6: Cumulative productivity of authors of Department of Chemistry, University of Mysore.

Sl. No.	Author Name	No. of papers	No. of Citations	Ave.	h-Index
1	Yathirajan HS	395	1091	2.76	12
2	Narayana B	309	922	2.98	12
3	Jasinski JP	166	300	1.81	8
4	Butcher RJ	138	319	2.31	8
5	Sarojini BK	117	513	4.38	10
6	Basavaiah K	116	296	2.55	8
7	Bolte M	71	280	3.94	8
8	Vinay KB	55	96	1.75	5
9	Mayekar AN	50	109	2.18	6
10	Rangappa KS	49	199	4.06	9

This table 6 shows the list of highly productive authors of Department of Chemistry, University of Mysore . Among them Dr. Yathirajan HS. has published highest number of papers, that is 395 papers during 2005-2015, 1091 citations has been the citation rate and h-Index is 12.

5.7 List of high cited papers of Department of Chemistry, University of Mysore

Table-7: List of high cited papers of Department of Chemistry, University of Mysore

Sl. No.	Title	Authors	Source Title	Publication Year	Total Citations
1	Photocatalytic degradation of rhodamine B dye using hydrothermally synthesized ZnO	Byrappa, K.; Subramani, A. K.; Ananda, S.; Rai, K. M. Lokanatha; Dinesh, R.; Yoshimura, M.	Bulletin of Materials Science	2006	89
2	Photocatalytic degradation of indigo carmine dye using TiO ₂ impregnated activated carbon	Subramani, A. K.; Byrappa, K.; Ananda, S.; Rai, K. M. Lokanatha; Ranganathaiah, C.; Yoshimura, M.	Bulletin of Materials Science	2007	60
3	Synthesis and antimicrobial study of novel heterocyclic compounds from hydroxybenzophenones	Khanum, SA; Shashikanth, S; Umesha, S; Kavitha, R	European Journal of Medicinal Chemistry	2005	54
4	Gas transport through nano and micro composites of natural rubber (NR) and their blends with carboxylated styrene butadiene rubber (XSBR) latex membranes	Stephen, R; Ranganathaiah, C; Varghese, S; Joseph, K; Thomas, S	Polymer	2006	50
5	Impregnation of ZnO onto activated carbon under hydrothermal conditions and its photocatalytic properties	Byrappa, K; Subramani, AK; Ananda, S; Rai, KML; Sunitha, MH; Basavalingu, B; Soga, K	Journal of Materials Science	2006	36
6	Anti-tumor and proapoptotic effect of novel synthetic benzophenone analogues in Ehrlich ascites tumor cells	Prabhakar, BT; Khanum, SA; Jayashree, K; Salimath, BP; Shashikanth, S	Bioorganic & Medicinal Chemistry	2006	29
7	Synthesis, structure-activity relationship of iodinated-4-aryloxymethyl-coumarins as potential anti-cancer and anti-mycobacterial agents	Basanagouda, Mahantesha; Jambagi, Vishwanath B.; Barigidad, Nivedita N.; Laxmeshwar, Sandeep S.; Devaru, Venkatesh; Narayanachar	European Journal of Medicinal Chemistry	2014	23
8	Efficacy of bioactive compounds from <i>Curcuma aromatica</i> against mosquito larvae	Madhu, S. K.; Shaukath, A. K.; Vijayan, V. A.	Acta Tropica	2010	21

9	An orthorhombic polymorph of 10,11-dihydrocarbamazepine	Harrison, WTA; Yathirajan, HS; Anilkumar, HG	Acta Crystallographica Section C-Crystal Structure Communications	2006	20
10	Cyclocondensation of Arylhydrazines with 1,3-Bis(het)arylmonothio-1,3-diketones and 1,3-Bis(het)aryl-3-(methylthio)-2-propenones: Synthesis of 1-Aryl-3,5-bis(het)arylpyrazoles with Complementary Regioselectivity	Kumar, S. Vijay; Yadav, Santosh K.; Raghava, B.; Saraiah, B.; Ila, H.; Rangappa, K. S.; Hazra, Arpan	Journal of Organic Chemistry	2013	19

This table 13 shows list of highly cited papers of Department of Chemistry, University of Mysore . during 2005-2015. In the above table Byrappa, K, E et. al. paper received highest number of citations that is 89.

6.0 Conclusion:

The article measures the research productivity and publication pattern of the Department of Chemistry, University of Mysore, Mysore. The publication output of institute during 2005-2015 was taken as a basis for measuring the research productivity. The study identified the publication patterns as well as strong and weak areas of research in the field of chemistry. Interaction collaboration has been demonstrated by the results of the study.

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