

Bibliographic Analysis Of Doctoral Thesis In Chemistry Submitted In Shodhganga By Gauhati University.

Dr. Alakesh Roy
Librarian
Morigaon College, Morigaon

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I. Introduction

Bibliography plays a very important role in research evaluation. Several attempts have been made to analyze the research performances in different areas using Bibliographic method. However, very less study is done to explore the Theses of Universities in Assam. So this study was done to explore the theses of Department of Chemistry, Gauhati University submitted and uploaded in Shodhganga during the time span of 2012 to 2023. A total of 400 theses were uploaded in Shodhganga during the study period by Department of Chemistry, Gauhati University. The first thesis was uploaded on 12 December 2012 and the last one in 17 May 2023 for this study. It is very necessary to analyze the theses of academic institutions for further research, for which the present study is undertaken to make an attempt to analyze the theses of Department of Chemistry, Gauhati University using the secondary data from Shodhganga database. The current study intends to identify the characteristics and research output of Doctoral Theses of the Department of Chemistry, Gauhati University of Assam during the year 2012-2023.

II. Objectives

The objective of the present study is to analyse the doctoral thesis submitted to Shodhganga by Department of Chemistry, Gauhati University. Bibliographic analysis give a details description of the thesis uploaded in Shodhganga by Gauhati University.

III. Methodology

The study is based on theoretical research method. The websites of Shodhganga and Gauhati University were searched for the study. Different websites of related literature were also searched.

IV. Discussions

Theses and dissertations are known to be the rich and unique source of information, often the only source of research work that does not find its way into various publication channels. Theses and dissertations remain an un-tapped and under-utilized asset, leading to unnecessary duplication and repetition that, in effect, is the anti-theses of research and wastage of huge resources, both human and financial. The UGC Notification (Minimum Standards & Procedure for Award of M.Phil. / Ph.D Degree, Regulation, 2009 Amendment made on 2016) dated 5th May 2016 mandates submission of electronic version of theses and dissertations by the researchers in universities with an aim to facilitate open access to Indian theses and dissertations to the academic community world-wide. Online availability of electronic theses through centrally-maintained digital repositories, not only ensure easy access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This would overcome serious problem of duplication of research and poor quality resulting from the "poor visibility" and the "unseen" factor in research output. As per the Regulation, the responsibility of hosting, maintaining and making the digital repository of Indian Electronic Theses and Dissertation (called "Shodhganga"), accessible to all institutions and universities, is assigned to the INFLIBNET Centre. Shodhganga is the name coined to denote digital repository of Indian Electronic Theses and Dissertations set-up by the INFLIBNET Centre. The word "Shodh" originates from Sanskrit and stands for research and discovery. The "Ganga" is the holiest, largest and longest of all rivers in Indian subcontinent. The Ganga is the symbol of India's age-long culture and civilisation, everchanging, ever-flowing, ever-loved and revered by its people, and has held India's heart captive and drawn uncounted millions to her banks since the dawn of history. Shodhganga stands for the reservoir of Indian intellectual output stored in a repository hosted

and maintained by the INFLIBNET Centre. The Shodhganga@INFLIBNET is set-up using an open source digital repository software called DSpace developed by MIT (Massachusetts Institute of Technology) in partnership between Hewlett- Packard (HP). Shodhganga provides a platform for research scholars to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. The repository has the ability to capture, index, store, disseminate and preserve ETDs (Electronic Theses and Dissertations) submitted by the researchers. The Centre is also developing a semantic web-based interface to facilitate subject-based browsing, navigation, search and retrieval of content available in the repository.

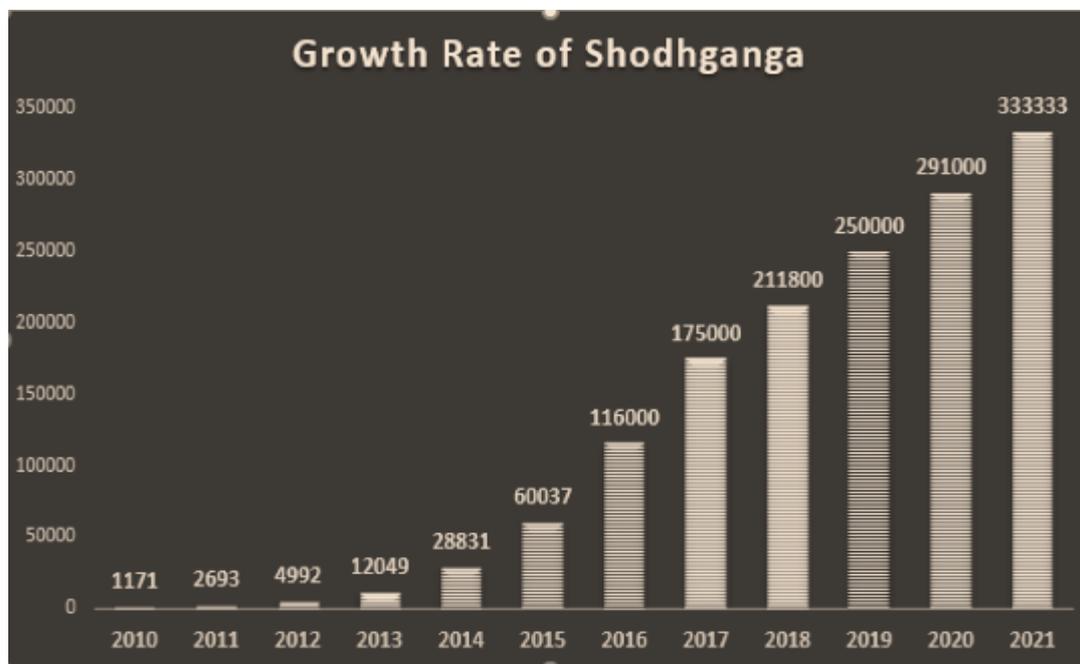


Fig 4.1 Growth rate of Shodhganga

The Department of Chemistry, Gauhati University was established in the year 1955 is the oldest Postgraduate Chemistry Department in the North East India. The Programme offered by the department are MSc in Chemistry (intake capacity 46), 1 year Post Graduate diploma course in Analytical Chemistry (PGDAC) with an intake capacity of 20. The Department also offer PhD programme encompasses several frontier areas of Chemistry. With financial assistance from DST (FIST Level-II) and UGC (DSA-II under SAP) the Department has, over the years, built up a modest infrastructure for research. It also has access to the facilities available at SAIF, Gauhati University. At present the department has 7 professors, 2 associate professors, 7 assistant professors including 1 under UGC-FRP, 1 DST-INSPIRE faculty, 1 guest faculty and 13 supporting staff members including 1 instrument operator, 1 technical assistant and 1 store keeper. Prof. B. C. Goswami is currently on lien to serve as the Vice Chancellor of Cotton University, Guwahati. The department grew under the leadership of Prof. B. Sanjiva Rao, former professor of IISc Bangalore, as the first HoD and Prof. Rohini Kanta Barua as the second HoD. Many others have subsequently helped the department grow to its present strength and reputation. At present Prof. Chitrani Medhi is the as Head of the Department.

Top 10 contributors in Shodhganga repository (As on 11.06.2023)

Sl No	University	Total	Dept of Chemistry
1	University of Madras	13310	591
2	University of Calcutta	12871	451
3	Anna University	11986	586
4	Sabiribai Phule Pune University	11663	1673
5	Chatrapati Sahuji Maharaj University	10033	894
6	Aligarh Muslim University	9111	985
7	V B S Purbanchal University	8410	470
8	Punjab University	8161	323
9	Bharathiar University	6745	299
10	Bharathidasan University	6520	565
11*	Gauhati University	5977	400

V. Findings

The thesis of Department of chemistry were submitted and uploaded in Shodhganga is as follows

Year	Number of theses Submitted
2012	1
2014	16
2015	32
2016	236
2017	13
2018	27
2019	23
2020	32
2021	10
2022	10
Total	400

The Guides under which the Research work completed are as follows

Sl. No	Name of the Guide / Guidess	No. of PhD Thesis
1	Acharyya, Mahendra N	1
2	Baishya, Gakul and Das, Pranab Jyoti	1
3	Baishya, N K	6
4	Barua Sudarshan	2
5	Barua, A B	4
6	Barua, N C	3
7	Barua, R K	9
8	Baruah, J B	1
9	Baruah, J N	1
10	Baruah, Tapan Ch	1
11	Bhattacharjee, Chira R	2
12	Bhattacharjee, S K	14
13	Bhattacharyya, Krishna Gopal	52
14	Bhattacharyya, Pradip Kr	8
15	Bhattacharyya, Manjit Kumar	3
16	Bhuyan, Pulak Jyoti	2
17	Borbora, Amrit C	1
18	Borbora, Rupa Das	1
19	Bordoloi, Manobjyoti	1
20	Borthakur, P C	1
21	Chakraborty, Monideepa	2
22	Chakraborty, Dhruba	1
23	Chakravorty, K L	1
24	Chaudhuri, A	6
25	Choudhury Devasish	4
26	Choudhury, Ritish	1
27	Choudhury, Satyendra Kr	2
28	Chowdhury, P K	1
29	Das, Archana M	1
30	Das, Birinchi Kumar	11
31	Das, Diganta Kumar	14
32	Das, P J	1
33	Das, H K	3
34	Das, Pranab Jyoti	7
35	Deka, Dibakar Chandra	28
36	Deka K.C.	1
37	Deka, S	1
38	Devi, A	7
39	Devi, Nirada	3
40	Devi, Dipali	1
41	Dutta Dipak Kumar	5
42	Dutta, N N	2
43	Ganguli, Jatindra Nath	13
44	Ganguly, Mausumi	3
45	Gogoi, S Kr	1
46	Goswami Bhabesh Ch	9
47	Goswami, Amrit	1
48	Goswami, Archana Sarma	1
49	Goswami, Dulumoni	1
50	Goswami, P	1
51	Hazarika, Mridul	2
52	Hazarika, Swapnali	1

53	Hussain, Akhtar	1
54	Iyengar, M S	1
55	Jyoti Das, Pranab	1
56	Kaimal, K G	1
57	Kakati, Dilip Kumar	9
58	Kalita, Dhruva Jyoti	1
59	Kataky, J C S	1
60	Konwar Dilip	1
61	Kotoky Jibon	1
62	Kotoky, Prabhat	1
63	Mahanta Debajyoti	1
64	Mahanta, Rita	2
65	Mahiuddin, Sekh	1
66	Mathur, R K	1
67	Medhi Chitarani	14
68	Medhi, Okhil Kumar	8
69	Misra, Abani Kumar	9
70	Muhiuddin, Sekh	1
71	Patgiri, A D	1
72	Phukan, Pradeep	27
73	Rao, P G	1
74	Rao, V S Bhaskar	1
75	Saikia, Binoy Kumar	1
76	Saikia, Lakshi	1
77	Saikia, Monali Dutta	2
78	Saikia, Pranjal	1
79	Saikia, C N	1
80	Saikia, Prakash Jyoti	1
81	Sarma, Arunima	1
82	Sarma, Neelotpal Sen	5
83	Sarma Prahash Chandra	1
84	Sarma Rupam Jyoti	2
85	Sarma, Hari Prasad	1
86	Sarma, J C	1
87	Sarma, Pabitra Kumar	5
88	Sharma, R P	6
89	Singh, H D	4
90	Swargiary, J	3
91	Talukadar, Anup Kumar	15
92	Tamuly, Pradip	1
93	Thakuria Ranjit	1
94	Thomas, E J	1
95	Thyagarajan, G	1

Keyword analysis

Sl No	Keyword	Appearance
1	Ion	283
2	Synthesis	85
3	Study	64
4	Chemical	56
5	Metal	52
6	Organic	41
7	Water`	41
8	Assam	38
9	Catalytic	30
10	Compounds	28
11	Reaction	26
12	Catalyst	23
13	Carbon	22
14	Soil	21
15	Hetero/ heterocycle	18
16	North east India	15
17	Bioactive	11
18	Molecule	11
19	Tea	11
20	Oxidation	11
21	Vitamin	10
22	Case study	9
23	Copper	9
24	Chemistry	8

25	DNA	8
26	Extraction	8
27	Environment	7
28	Benzene	7
29	Drugs	6
30	Spectroscopy	6
31	Pollution	5
32	Spectrophotometric	5
33	Steroids	5
34	Antioxidant	5
35	Liquid	5
36	Dyes	5
37	Nano Particle	4
38	Aromatic	4
39	Chlorides	4
40	Inorganic	3
41	Refinery	3
42	Biochemical	3
43	Coal	3
44	Biochemical	3
45	Silk	3
46	Alkaline	3
47	Chromatography	2

Some Doctoral Research on special topic:

Thesis on Bio fuel

“Investigation of some nonconventional feedstock to assess their prospects and potential for production of biodiesel” by Sarma, Manoj

Thesis on Soil, Air and Water Pollution (in Assam / North East India)

1. Effects of mining on the quality of soil and water in the coal mining areas of Assam by Kabita, Patowary
2. Quality assessment of water sources used for domestic purposes in the tribal areas of the South West Kamrup with special reference to Boko by Baruah, Jyoti Prasad Sarma
3. Quality Assessment of drinking water in Sonitpur district Assam with special reference to Gohpur subdivision, by Sabhapandit, Pranab
4. Drinking water chemistry in Goalpara district Assam India by Sarma, Babul Chandra
5. Physico chemical investigations of inorganic colloids in soils by Rajkhowa, Jyotidhar
6. A study of water quality and pollution levels of the Bharalu river by Lal, Prem Chandra
7. Impact of oil field operations on soil quality near upper Assam oil fields by Devi, Arundhuti
8. A comparative study of the groundwater quality in five districts of Assam and Meghalaya with special reference to health related parameters by Nath, Dhruva Jyoti
9. Impact of textile mill on soil and water quality a case study at Rangia Assam India by Deka, Gitimoni
10. A study on quality of drinking water in Lakhimpur district of Assam with reference to health hazard by Kakati, Sabitri Saikia
11. Quality of drinking water in the Darrang district with particular reference to Mangaldai subdivision by Sarma, Hari Prasad
12. Chemical composition of the street dust of Guwahati with special reference to speciation of the heavy metals by Sarmah, Bidyut Jyoti
13. Quality assessment of water sources used for domestic purposes in and around Lumding town of Assam by Paul, Mrinal Kanti
14. A study of surface water and sediment pollution for a few entrapped water sources in and around Guwahati city by Sarma, Chandana
15. Study of surface water pollution in greater Guwahati by Kakati, Girindra Nath
16. Environmental impact of vehicular emissions at Guwahati a case study with respect to the impact on roadside soil by Goswami, Bijoy Sankar
17. Impact of oil exploration and drilling on soil quality an assessment with respect to Lakowa and Rudrasagar oil fields of Assam by Kalita, Mukut
18. Agropotentialities of paper mill wastes of hindustan paper corporation limited Nagaon Assam a feasibility study by Medhi, Utpal Jyoti
19. Quality of water in rural Assama case study with respect to Nalbari district by Barman, Hitesh
20. Soil contamination due to a pulp and paper industry a case study at Jagiroad Assam India by Khound Phukan, Smritishikha

21. Air and soil quality near lakhmoni oil field bokota assam and impacts on muga antheraea assama cultivation by Devi Gitumani
22. Water quality of major wetlands in Barpeta District, Assam, India by Talukdar Rodali
23. Quality of water in the Chirang District of Assam with special reference to cationic and anionic pollutants and their inter relationships by Basumatary Valentina
24. Water quality evaluation in the Kokrajhar District of Bodoland Territorial Council, Assam by Das, Basanta Kumar
25. Carbon sequestration in paddy fields of Assam by Gogoi, Navamallika
26. Investigation on the physico chemical parameters of soil and degradability of river bed of Brahmaputra and areas around it in Dhubri District of Assam by Rahman Mizanur
27. Studies on soil parameters and dt 50 of a few aromatic hydrocarbons in soils of river bed of brahmaputra in Goalpara District of Assam by Kaabi, Abdul

Thesis on **Organic Reaction and Methods**

1. Organic reactions catalyzed by copper and palladium compound with focus on carbon carbon bond formation by Kalita, Pabitra Kumar
2. Studies on bivalent organic sulphur compounds sulphenylations with sulphenyl bromides of orthomercaptoazo compounds by Mazumdar, Mridula
3. Studies on dicoordinated organic sulphur compounds sulphenylation reaction with 2 nitro 4 methylazobenzene 2 sulphenyl bromide by Chakraborty, Monojit
4. "Development of organic synthetic methods using N,N- Dibromo-p-Toluene Sulfonamide" by Saikia, Indranirekha

Thesis on **Oxidation Reaction**

1. Studies on development of novel green oxidation methodologies by Sarma, Kuladip
2. Synthesis of a few metal based oxidizing agents and their applications in oxidation reactions by Dewan, Anindita
3. Aqueous phase catalytic oxidation of dyes by Das, Moutusi
4. Development of effective catalysts for advanced oxidation processes for the removal of pollutants by Malakar, Anup

Thesis on **Drugs**

1. Investigation on the binding of anticancer drugs by Karim, Murshida
2. Studies on nanoparticulate drug delivery system for anti retroviral drugs by Biswas, Angshuman
3. Chemical transformations of steroids towards the preparation of steroidal drug and drug intermediates hormones and some ansasecosteroids by Borah, Parinita

Thesis on **Clays**

1. Preparation Properties Structure and Applications of Modified Clays by Agarwal, Sangeeta
2. Clay based green catalysts and their characterization by Khanikar, Nirupam
3. The systematic study of the clays of different arsenic affected areas of Assam with special reference to their ion exchange properties by Sarma, Jinamoni
4. Studies on transition metal doped polyaniline and polyaniline clay nanocomposites by Upadhyaya, Madhab
5. Claymetal interactions a study with respect to kaolinite and montmorillonite with and without pillaring by Gupta, Susmita Sen
6. Intercalated layered clay composites and their applications by Phukan, Anjali
7. Immobilization of pollutants on clay surface by Ghosh, Dipa
8. A study of intercalated clay metal complexes by Bhagawati, Bithika
9. Study of a few clays of Assam and Meghalaya and their utility in pollution control by Phukan, Gopal

Thesis on **Tea**

1. Polyphenol metabolism and its relation to quality attributes in Assam tea by Santanu Sabhapondit
2. Optimization of tea quality with special reference to catechins and lipids by Baruah, Deepika
3. Effect of herbicide application on tea camellia sinensis L o kuntze by Baishya, Jamini Kr
4. Studies on nitrogen availability in soil and its use efficiency by tea camellia sinensis L by Paul, Kanu Kumar
5. Study on biochemical aspects of phenolics in tea with special reference to catechins by Deka, Himangshu
6. Surface modification of activated carbon prepared from tea leaf and their applications for adsorption and catalysis by Goswami Mridusmita

Thesis on Catalysis & Electrochemistry

1. A study of photo catalysis on nanosized Ti iv oxide by Goswami, Pallabi
2. Studies on modifications physicochemical and catalytic characterisation of synthetic zeolite X by Das, Durgeswar
3. Studies on characterization and catalytic properties of oxides and zeolites by Talukdar, Anup Kumar
4. Synthesis characterization and electrochemistry of new copper based mono and binuclear complexes having bio inorganic importance by Sarma, Babita

Thesis on Metals

1. Fluorescent and electrochemical sensing of few metal ions bifluoride and new ph dependent fluorescent molecular switch by Dutta, Kaku
2. Synthesis of nanostructured 3 d transition metal oxides and studies on their catalytic and other activities by Bepari, Rahul Amin
3. Studies on extractive spectrophotometric determination of metal ions at tracer level using benzyldimethylphenylammonium chloride as a reagent by Das, Pran Krishna by Das, Pran Krishna
4. A study on physical and chemical properties of Fly ash with special reference to uptake of heavy metals by Ray, Bashanti
5. Adsorption behaviour of heavy metal ions and dyes from water onto nano porous materials kinetic and thermodynamic studies by Dutta, Debajani

Thesis on Vitamins

1. Epidemiological studies involving carotenoids and vitamin A by Sarma, Pulin Chandra
2. Studies on the formation of vitamin A in freshwater fish by Das, Rathindra Chandra
3. Further studies on the origin of vitamin A in freshwater fish by Goswami, Bhabesh Chandra
4. Studies in vitamin A and congeners by Nayar, P Govindan
5. Spectrophotometric determination of vitamin D in presence of vitamin A by Rao, M V Krishna
6. Studies in vitamin A2 by Nair, M G Raghavan
7. Studies on vitamin A and its congeners by Ghosh, Manindra Chandra
8. Studies in naturally occurring anhydrovitamin A2 by Goswami, Kamaleswar

Thesis on Synthesis and derivatives

1. Studies on the synthesis and reactivity of high nitrogen compounds and some modern methods of synthesis using phase transfer catalysts by Das, Satya Sandhya
2. Some aspects of the chemistry of cyclic nitroketones with special emphasis on the synthesis of bioactive natural products by Bezbarua, Maitreyee Sarma
3. Investigations towards the synthesis of bioactive natural products and their analogues by Bez, Ghanashyam
4. Synthesis and characterization of a few high silica zeolites by Misra, Gautam Krishna
5. Studies on the synthesis and reactivity of some amino acid derivatives by Neog, Jyotimoni
6. Studies on sulfenyl derivatives of orthomercaptoazo compounds a source of electrophilic bivalent sulphur by Ganguly, Mausumi

Thesis on Geochemistry

1. A contribution to the study of geochemistry of rock phosphate from Sung valley Meghalaya India by Saikia, Gobin Chandra
2. Geochemical appraisal of the fluoride distribution in the water system of Karbi Anglong District, Assam by Tamuly Utpal

Thesis on Ethnic Community

1. Traditional alcoholic beverages prepared by ethnic communities in sivasagar district of assam study on methodology and composition by Handique Pranami
2. Rice beer used by bodos with special reference to Kokrajhar District in Assam : Methodology and physico chemical characterization by Anamika Kalita Deka

VI. Conclusion

In conclusion we can say that the Research work in the Department of Chemistry Gauhati University is doing a tremendous growth. It also helps the society to develop and mitigate the environment by the research work on environment related topics like air pollution, soil and water pollution. Research on Tea will help in quality up gradation of the tea Industry Research on Ethnic Community definitely gives exposure to the local

society. Shodhganga Repository is really very helpful for the researchers who want to undergo further research activities.

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