

## Profile of the Department

1. NameoftheDepartment : **CHEMISTRY**
2. YearofEstablishment: 2016
3. Namesof Programmes/Coursesoffered: B.Sc. Major/Core and Pass course/Generic elective
4. Annual/semester/choicebasedcreditsystem(programmewise): Semester and CBCS
5. Numberof Teachingposts

	<b>Sanctioned</b>	<b>Filled</b>
Professors		
AssociateProfessors		
Asst.Professors		4 (non-sanctioned)

**6. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M.Phil.etc.,)**

Name	Qualification	Designation	Specialization	No. of Years of Experience
Ms.Parmita Phukan	M.Sc., M.Phil PhD (On-going)	Assistant Professor	Organic Chemistry	3
Mr.Rajjyoti Gogoi	M.Sc., PhD (on-going)	Assistant Professor	Inorganic Chemistry	3
Dr.Shreemoyee Bordoloi	PhD	Assistant Professor	Inorganic Chemistry	2
Ms.Acharjee Konwar	M.Sc.	Assistant Professor	Physical Chemistry	1

**7. List of senior visiting faculty:**

- a) Dr.Surajit Konwar, Assistant Professor, Department of Chemistry, Dibrugarh University
- b) Dr.Diganta Sarma, Associate Professor, Department of Chemistry, Dibrugarh University

**8. Student-Teacher Ratio (programmewise): Major/Core: (22:1)  
Non-Major/Generic elective: (52:1)**

**9. Qualification of teaching faculty with DSc/D.Litt/Ph.D/MPhil/PG:**

**PhD-01, M.Phil-01, M.Sc-02**

## MISS PARMITA PHUKAN

### PAPER PUBLICATION DETAILS

1. “A Quick, Efficient and Simple Protocol for Synthesis of Bimetallic Nickel Palladium Nanoparticles: Effective Catalyst for Biaryl Synthesis”  
**ParmitaPhukan**, Preeti R. Boruah, Praveen S. Gehlot, Arvind Kumar, AnkurBordoloi and **DigantaSarma**, *Chemistry Select*, 2017, 2, 11795-11800.
2. “A Simple, Quick and Novel Protocol for Biaryl Synthesis using LiCl promoted in situ generated Pd nanoparticles”  
**ParmitaPhukan**, PreetiRekhaBoruah, Praveen Singh Gehlot, Arvind Kumar and **DigantaSarma**, *Applied Organometallic Chemistry*, 2018, DOI: 10.1002/aoc.4009
3. “Phytochemical and Pharmacognostic Analysis of *AlstoniaScholaris* (l) R. BR., A commonly available Medicinal Plant in Assam, India  
**ParmitaPhukan** and S. N. Phukan, *Research Journal of Chemical Sciences*, 2014, 1168-71

### SEMINARS/ CONFERENCES ATTENDED

1. **International Conference on *Frontiers in Chemical Sciences***, IIT Guwahati, 6<sup>th</sup> – 8<sup>th</sup> December, 2018.
2. **International Conference on *Emerging Trends in Chemical Sciences***, Department of Chemistry, Dibrugarh University, 26<sup>th</sup> – 28<sup>th</sup> February, 2018.
3. **National Seminar on *NanoMaterials Science, Technology and Application***, Department of Physics, Dibrugarh University, 10<sup>th</sup> – 11<sup>th</sup> November, 2017.
4. **National Seminar on *Recent Developments in Synthesis and Catalysis***, Department of Chemistry, Dibrugarh University, 10<sup>th</sup> – 11<sup>th</sup> March, 2017.
5. **International Conference on *Emerging Trends in Nano materials Science and Technology***, NIT Nagaland, 4<sup>th</sup> – 6<sup>th</sup> January, 2017.
6. **National Seminar on *Mathematical Modelling***, DhakuakhanaCollege, Assam, 4<sup>th</sup> – 5<sup>th</sup> February, 2016.

7. **National Seminar** on *Quality Based Higher Education System*, Panigaon O.P.D College, Assam, 22<sup>nd</sup> – 23<sup>rd</sup> September, 2014.
8. **National Seminar** on *Future prospects of Ethno-medicine*, Lakhimpur Girls' College, 20<sup>th</sup> – 21<sup>st</sup> August, 2014.

#### **WORKSHOPS ATTENDED**

1. **National Workshop** on *Research Paper and Project Proposal Writing*, Dibrugarh University, Assam, 24<sup>th</sup> – 25<sup>th</sup> October, 2016
2. **National Level** workshop on '*Basic Techniques of Molecular Biology & Bioinformatics*', LTK College, Assam, 5<sup>th</sup> – 6<sup>th</sup> May, 2016
3. **Lecture workshop** on '*Computational Chemistry with special emphasis on electronic structure methods*', Dibrugarh University, Assam, 19<sup>th</sup> -21<sup>st</sup> Nov 2018

#### **BOOK CHATER PUBLISHED**

Title: A Review on Base-Catalysed Coupling Reaction in aqueous Media

ISBN: 978-93-5258-557-1

#### **RAJYOTI GOGOI**

##### **PAPER PUBLICATION DETAILS**

1. A thiosemicarbazonepalladium (II)- imidazole complex as an efficient precatalyst for Suzuki- Miyauracrosscouplingreations at room temperature in aqueous media.-  
**RajjyotiGogoi**, J.Baruah, N.Gogoi&G.Borah, Transition Metal Chemistry, 2017, DOI 10.1007/s11243-017-0174-4
2. Synthesis and Characterization of Cobalt(II) Complexes with Hemilabile P<sup>^</sup>N Donor Ligands- **RajjyotiGogoi** ,ChandanPathak&Geetika Borah, Asian Journal of Chemistry 31(3):566-568, 2018, DOI: 10.14233/ajchem.2019.21685
3. Agro waste derived nanosilica supported Pd(II) complex: A protocol for copper free Sonogashira reaction in water-**RajjyotiGogoi** , RiturajSaikia&Geetika Borah ,Journal of Organometallic Chemistry 897 , 2019, DOI: 10.1016/j.jorganchem.2019.06.01

## SEMINARS/CONFERENCES/WORKSHOPS:

### Seminars/Conferences:

1. International Conference on Emerging Trends in Chemical Sciences, Department of Chemistry, Dibrugarh University, 26th – 28th February, 2018.
2. National Seminar on Recent Developments in Synthesis and Catalysis, Department of Chemistry, Dibrugarh University, 10th – 11th March, 2017.
3. International Conference on Emerging Trends in Nano materials Science and Technology, NIT Nagaland, 4th – 6th January, 2017.
4. National Seminar on Emerging Trends in Chemical Sciences, Gauhati University, 5th -6th November, 2015 .

### Workshops:

1. National workshop on Research paper and Project proposal writing, Dibrugarh university, 24-25 oct,2016.
2. National workshop on Open Source Software for Learning Management System, IIT Kharagpur 25th-27th july,2017.
3. National symposium on Light : Not a light Matter, Dibrugarh University, 12th November, 2016
4. National workshop on Goods and Service Tax, DHSK College, 26th march
5. National workshop on Legal Awareness Programme, DHSK College, 2nd -3rd December, 2016
6. National workshop on Computational Chemistry with special emphasis on electronic structure methods. 19 -21st ,2018, department of chemistry, Dibrugarh University

### Book chapter/ Edited:

Title	Publisher	Year	ISBN
1.Research Issues and Solution, A book on Multiple Disciplines Chapter: Naturally derived alternatives for organic synthesis-a green protocol	kasturiPrakaxaan Ghy-21	2016	978-93-5105-233-3

2.Recent Trends In Environment and Society ( <b>Editor</b> )	Kaustav prakaxan	2018	978-93-82283-14-0
3.Emerging Trends in Multidisciplinary Research	Kasturi	2018	978-93-5105-359-0

## Dr.ShreemoyeeBordoloi

### PAPER PUBLICATIONS:

1. P.K. Gogoi, **S.Bordoloi**Supramolecular chemistry of anion receptors – a review, *Proceedings of the National Academy of Sciences*, India, 78 A, Part III, (2008)
2. **S.Bordoloi**, S.K Nath, R.K. Dutta, Iron ion removal from groundwater using banana ash, carbonates and bicarbonates of Na and K, and their mixtures, *Desalination* **281**, 190–198 (2011).
3. S.K.Nath, **S.Bordoloi**, R.K.Dutta, Effect of acid on morphology of calcite during acid enhanced defluoridation, *Journal of Fluorine Chemistry* **132**, 19–26 (2011).
4. **S.Bordoloi**, M. Nath, R.K. Dutta, pH-conditioning for Simultaneous Removal of Arsenic and Iron Ions from Groundwater, *Process Safety and Environmental Protection* **91**, 405–414, (2012).
5. **S. Bordoloi**,S.K. Nath, S. Gogoi,R.K. Dutta, Arsenic and iron removal from groundwater by oxidation-coagulation at optimized pH: laboratory and field studies, *Journal of Hazardous Materials***260**, 618-626 (2013).
6. **S. Bordoloi**, R.K. Dutta, Chemical tricks in ‘ArsironNilogon’, *The Chemical Axis* ISSN 2249-8842, **13**, 1-5, (2014).
7. S. Gogoi, S.K. Nath, **S. Bordoloi**, R.K. Dutta, Fluoride removal from groundwater by limestone treatment in presence of phosphoric acid,*Journal of Environmental Management***152**, 132-139, 2015
8. S. Konwer, A. Begum, **S. Bordoloi**, R. Borua, Expanded graphene-oxide encapsulated polyaniline composites as sensing material for volatile organic compounds, *Journal of Polymer Research* **24** (3), 37, 2017
9. R. K. Dutta, R. Mohan, S. Gogoi, A. J. Borah, **S. Bordoloi**, A. A. Ali, H. R. Sarma, "Field Experience of Fluoride Nilogon: A Magical Method of Fluoride Removal from Groundwater", *Current Science* (Accepted), 2019.

### LIST OF CONFERENCE/ SEMINAR ATTENDED

#### National:

1. **National Seminar onCrisis of Fresh Water, A Challenge to Humanity and Life Processes, What is the Solution?** August 17-18, 2010. Dept. of Chemistry, D.R. College, Golaghat, Assam, India (**Oral Presentation**)

2. **National Seminar on Green Chemistry for Sustainable World** on 4-5 February, 2011 at Gargaon College, Assam (**Oral presentation**)
3. **UGC sponsored National Seminar on Sustainable soil & water resources management and environmental challenges** of the 21<sup>st</sup> Century, on 19<sup>th</sup> & 20<sup>th</sup> November, 2011, Chaiduar College, Gohpur, Sonitpur, Assam (**Oral presentation**)
4. **National conference on Chemistry, Chemical technology and Society** on 11<sup>th</sup>-12<sup>th</sup> November, 2011 at Department of Chemical Sciences, Tezpur University (**Poster presentation**)
5. **National Conference on Hydrology and water quality management** on 20-22 September, 2012 at Morigaon College, Morigaon, Assam (**Oral presentation**)
6. **77<sup>th</sup> Annual Session and Symposium on Novel Approaches for Food and Nutritional Security**, December 06-08, 2007, Central Food Technological Research Institute, Mysore, India (**best research paper awarded**)
7. **National Conference on “Recent Developments in Synthesis and Catalysis**, on 10-11 March, 2017, organized by Department of Chemistry, Dibrugarh University, Dibrugarh, Assam.

#### **International:**

1. **2<sup>nd</sup> International Science Congress** on 8<sup>th</sup>-9<sup>th</sup> December, 2012 held at Bon Maharaj Engineering College, Vrindavan, Mathura, UP, India (**Oral presentation**)
2. **International Seminar and workshop on Energy, sustainability and development** on 12-14 October, 2012 at Sibsagar College, Joysagar, Assam, India (**Best poster awarded**)
3. **International Conference on Emerging Trends in Chemical Science on 26-28 February, 2018** organized by Department of Chemistry, Dibrugarh University, Dibrugarh, Assam. (Poster presentation)
4. **2<sup>nd</sup> World Clean Environment Summit** on 16-18 July, 2018 organized at Science City, Kolkata, organized by IBRF, NICER, India (Oral presentation)
5. **International Symposium on Sustainable Polymers** on 23-25 August, 2019, organized by IIT, Guwahati, Assam (Poster)

#### **SCHOOL/WORKSHOPS PARTICIPATED**

1. **Summer School on Green Chemistry**, 2-22<sup>nd</sup> June 2009, Sponsored by Department of Science and Technology (DST), New Delhi, India and organized by Dept. of Chemical Sciences, Tezpur University, Tezpur, Assam, India.
2. **Frontier Lecture Series**, 20-22 Nov 2009, Organized by Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) Bangalore, India in collaboration with Dept. of Chemical Sciences, Tezpur University, Tezpur, Assam, India.
3. **Workshop on Integrated Arsenic and Iron removal from Ground Water, “ArsironNilogon”**, 25<sup>th</sup> June, 2011, Sponsored by Department of Science and Technology (DST), New Delhi, India and organized by Dept. of Chemical Sciences, Tezpur University, Tezpur, Assam, India.

4. **Workshop on Arsenic and iron removal from groundwater** on 18<sup>th</sup> July, 2011 at Sonari College, Sonari, Sivsagar, Assam, India.
5. **Workshop on Groundwater Arsenic: Its Effects and Removal** on 22<sup>nd</sup> March, 2013 at Majuli College, Jorhat, Assam.
6. **Workshop on Groundwater Arsenic: Its Effects and Removal**, on 23<sup>rd</sup> March, 2013 at Uttar Majuli College, Jorhat, Assam.
7. **Workshop on Spectroscopic tools and their applications** on 6<sup>th</sup> April, 2013 at Department of Chemical Sciences, Tezpur University
8. **Workshop on Intellectual Property rights Sensitization: IPRSW-2010** on 23<sup>rd</sup> December, 2010 at Tezpur University, Tezpur, Assam.
9. **International Congress on renewable energy** on 2-4<sup>th</sup> November, 2011 at Tezpur University, Tezpur, Assam.
10. **DST Workshop on Water Purification Possibility and Prospects**, 2011, Dept. of Chemistry, J.N.V. University, Jodhpur, India.
11. Workshop on ‘**Arsiron Nilogon**’ 17<sup>th</sup> July 2016, Department of Chemistry, Tezpur University, Tezpur, India.
12. 3<sup>rd</sup> Information and Networking Event: EU-India Water Call 2017-18, 5<sup>th</sup> January, 2018 Hotel Vivanta by Taj, Guwahati
13. Workshop on “**Arsiron Nilogon and Fluoride Nilogon**” on 24-25 February, 2018 at Tezpur University, Tezpur, Assam, India.
14. **DST-sponsored Workshop on Arsiron Nilogon and Fluoride Nilogon** on 9 March 2019, Department of Chemical Sciences, Tezpur University. (Attended as *Panel member*)
15. Two Day Capacity Building Programme on “**Drug Demand Reduction**” organized by IQAC, Dibrugarh University on 23-23 March, 2019.
16. One Week short term training programme on “**Advanced Experimental Training**”, 28<sup>th</sup> May – 1<sup>st</sup> June, 2019 organized by TEQIP-III, DUIET, Dibrugarh University
17. **DST-sponsored Workshop on Arsiron Nilogon and Fluoride Nilogon** on 27<sup>th</sup> July 2019, Department of Chemical Sciences, Tezpur University.
18. Workshop on “**Lecture Workshop on Computational Chemistry**”, 19-21, November 2019, Dept of Chemistry, Dibrugarh University

#### **PATENTS FILED/ACCEPTED:**

1. R.K. Dutta, **S. Bordoloi**, S.K. Nath, Patent No. 280737, “*Arsenic Removal from Groundwater by Oxidation-Coagulation at Controlled pH for Domestic and Community Applications*” (Application No. 704/KOL/2010; Date of grant: 27/02/2017).
2. R.K. Dutta, S.K. Nath, **S. Bordoloi**, *Iron Removal From Water using HCO<sub>3</sub><sup>-</sup> or CO<sub>3</sub><sup>2-</sup> salts of K<sup>+</sup> or Na<sup>+</sup> Retaining the pH within the Acceptable Limit For drinking* (Application No.2132/KOL/2008; Publication Date : 25/12/2009).
3. R.K. Dutta, S.K. Nath, **S. Bordoloi**, *Arsenic removal from water using NaHCO<sub>3</sub> or KHCO<sub>3</sub> or plant ash or their mixtures* (Application No. 508/KOL/2009 dated 23/03/2009 12:54:55).

#### **BOOK CHAPTER:**

1. **S. Bordoloi**, S Gogoi, R K Dutta, “*A low-cost arsenic removal method for application in the*



*Brahmaputra-Ganga plains: Arsenic Distribution*”.

Book title: 'Arsenic distribution in Central Gangetic Plain';

Editors- AL Ramanathan, H Prommer, A Mukherjee, B Nath,

ISBN: 978-93-81891-08-7

**2.S. Bordoloi**, “Adsorption of Arsenic by Chitosan and its Derivatives: A short Review”

Book title: ‘Material Science and Nanomaterials: Recent Advance and Application’;

Editors- Dr.SurajitKonwer, Dr.AnkurGogoi

ISBN: 978-93-81563-65-6

**3. S. Konwer, S. Bordoloi**, “Graphene – the wonder material of the 21<sup>st</sup> Century”

Book Title: Open Science-A compilation of Science Articles,

Editors: Dr.RanjanaGogoi, Dr. D K Deka, Dr. A Narzary, Dr. R Handique;

ISBN: 978-81937874-6-5; 2019;

### **23.Awards/Recognitionsreceivedbyfacultyandstudents:**

#### **Dr.ShreemoyeeBordoloi:**

- ❖ 1<sup>st</sup> Prize in German Water Partnership (GWP) Award, India, 2014, Sponsored by Merck, Hotel Gateway, Kerala
- ❖ Senior Research Fellowship (SRF) awarded by Council of Scientific and Industrial Research (CSIR), Govt. of India.
- ❖ Best Poster Award in International Seminar and workshop on Energy, sustainability and development on 12-14 October, 2012, Sibsagar College, Joysagar, Assam, India.
- ❖ ‘SwarnaJayantiPuraskar’ for best research paper in 77<sup>th</sup> Annual Session and Symposium on Novel Approaches for Food and Nutritional Security’07, Mysore.
- ❖ Evaluator, 27<sup>th</sup> National Children Science Congress, 2019, Organized by District Organizing Committee, Dibrugarh on 9<sup>th</sup> September 2019

#### **Ms.ParmitaPhukan**

- ❖ **INSPIRE** Scholarship by Dept. of Science & Technology, Govt. of India, New Delhi.

### **10. List of eminent academicians and scientists/visitors to the department:**

(a) Dr.SurajitKonwar, Assistant Professor, Department of Chemistry, Dibrugarh University

(b) Dr.DigantaSarma, Associate Professor, HoD, Department of Chemistry, Dibrugarh University

**11. Student profile programme/coursewise:**

<b>Name of the Course/programme</b>	<b>Year</b>	<b>Enrolled</b>
B. Sc. Major/Core	2016	14
	2017	22
	2018	22
	2019	30
B.Sc. General/Generic elective	2016	66
	2017	69
	2018	68
	2019	07

**12. Diversity of Students**

<b>Name of the Course</b>	<b>% of students from the same state</b>	<b>% of students from other States</b>
B.Sc. Major (2016 batch)	90.9%	9.1 %
B.Sc. Major (2017 batch)	100 %	Nil
B.Sc Major (2018 batch)	100 %	Nil
B.Sc Major (2019 batch)	96.7%	3.3%

### 13. Detailsof Infrastructuralfacilities

- a) Library : Yes
- b) InternetfacilitiesforStaff&Students: Yes
- c) Class rooms with ICT Facility: Yes
- d)Laboratories: Yes

### 14. Detailsonstudentenrichmentprogrammes(speciallectures/workshops/Seminar)withexternalexperts:

1. Interaction of students in the International Conference on *Emerging Trends in Chemical Sciences (ETCS)*, 2018, organized by Department of Chemistry, Dibrugarh University.
2. Invited Talk on “*Scope and Application of Electrochemistry and Orientation Program on Competitive Examinations*” by Dr. SurajitKonwar, Assistant Professor, Department of Chemistry, Dibrugarh University
3. Invited Talk on “*Hazards of Plastics and Green Chemistry* ” on account of World Environment Day, by Dr. DigantaSarma, Associate Professor, Department of Chemistry, Dibrugarh University

### 15. Teachingmethodsadoptedtoimprovestudentlearning

- Black boards, Powerpoint Presentations
- Notes and Reference Books
- Online Learning Management Tool –MOODLE
- Designing of Chemistry Models, Practical examples etc.

### 16. ParticipationinInstitutionalSocialResponsibility(ISR)andExtensionactivities

- Observation of World Environment Day, 5<sup>th</sup> June, 2018  
Department of Chemistry organised an invited Talk on *Hazards of Plastics and Green Chemistry*” on account of World Environment Day
- Students from department of chemistry participated on Baseline Survey for Unnat Bharat Abhigyan.
- Students from department of chemistry participated as “Motivator” in the program on

'Mathematics : Why and How' organized by Department of Mathematics, MDKG College, Dibrugarh.

### **17. SWOC analysis of the department and future plans**

#### **Strength:**

- ICT based class rooms
- Well Equipped Laboratory
- Healthy and Hygienic atmosphere for the students
- Quality of Faculty and Team work of faculty and students

#### **Weakness:**

- Insufficient reference books in department library

#### **Opportunities:**

- First educational institution under Dibrugarh University to use LMS tool MOODLE
- To enhance girls education in the field of science

#### **Challenges:**

- To upgrade laboratory facilities with sophisticated instruments.
- Encourage students to develop a healthy and clean environment.

### **18. Future Plan of the Department:**

- To update the department library with reference books reputed journals and magazines.
- To introduce a departmental e-bulletin containing all information and activities of the faculty members and students besides writings from reputed scientists and chemists.
- To organize National Seminar and Workshops.
- To develop and encourage research proficiency among students in the field of Industrial Chemistry.

## Photographs of Faculty Members

1. Miss Parmita Phukan



2. Mr. Rajjyoti Gogoi



3. Dr. Shreemoyee Bordoloi



4. Miss Acharjee Konwar

