

1. **Name of the department : CHEMISTRY**
2. **Year of Establishment :** Under Graduate Honours Course in **CHEMISTRY** on 2002
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph. D., etc.) :**
Undergraduate
4. **Names of Interdisciplinary courses and the departments/units involved:** Nil
5. **Annual/ semester/choice based credit system (programme wise):** Annual
6. **Participation of the department in the courses offered by other departments:**
Some classes of Biochemistry department are taken by our faculty members, when invited.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc:** Nil
8. **Details of courses / programmes discontinued (if any) with reasons:** None
9. **Number of teaching posts:**

	Sanctioned	Filled
Professors	Nil	Nil
Associate Professors	One	One
Assistant Professors	Two	Two

10. 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	No. of Ph.D. Students guided for the last 4 years
Dr. Suparna Pal	Ph.D.	Associate Professor	Organic Chemistry	18	Nil
Dr. Ashis Dey	Ph.D.	Assistant	Physical	8	Nil

		Professor	Chemistry		
Dr. Ujjwal Das	Ph.D	Assistant Professor	Inorganic Chemistry	8	Nil
Smt. Sipra Sen	M.Sc.	Part-timer(Govt. approved)	Organic Chemistry	18	Nil
Smt. Subholakshmi Ghosh	M.Sc.	Part-timer(Govt. approved)	Organic Chemistry	9	Nil
Dr. Niren Ch. Gayen	Ph.D	Guest Lecturer	Inorganic Chemistry	40	Nil
Dr. Sharmistha Dhatt	Ph.D	Guest Lecturer	Physical Chemistry	2	Nil

11. List of senior visiting faculty: 1 (Dr. Niren Ch. Gayen)

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Course	Lectures	Practical Classes
B.Sc. (Honours)	27.7%	12.5%
B.Sc. (General)	70%	60%

13. Student -Teacher Ratio (programme wise):

B.Sc. (Hons.): 11:1

B.Sc. (General): 50:1

14: Number of academic support staff (technical) and administrative staff sanctioned and filled:

- **Total no. of Laboratory Attendants : 3**
- **Sanctioned Post : 1**
- **Filled : 1**
- **No. of casual Laboratory Attendants : 2**

15. Qualifications of teaching faculty with D.Sc./ D.Litt/ Ph.D/ MPhil / PG.

Teachers with	Number
DSc	0
DLitt	0

PhD	5
MPhil	0
PG	2
Total number of Teachers	7

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received: One; Name of project : UGC Minor Research Project

Micro-structural and optical characterization of conducting polymer nanocomposites and exploration of their electrical transport and dielectric properties.

Amount: Rs. 1,95,000

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received :

UGC Two 03.43 lakhs

i. UGC Minor Research Project

Chemistry of the Platinum Metals incorporating Organosulfur azo and Schiff Base Ligands: Synthesis, Structure and Exploration of Reactivity.

Amount: Rs. 1,48,000

ii. UGC Minor Research Project

Micro-structural and optical characterization of conducting polymer nanocomposites and exploration of their electrical transport and dielectric properties.

Amount: Rs. 1,95,000

18. Research Centre /facility recognized by the University: Nil

19. Publications:

* **Publication per faculty:**

Dr. Suparna Pal : 8

Dr. Ashis Dey : 13

Dr. Ujjwal Das : 2

Dr. Sarmistha Dhatt : 10

*** Number of papers published in peer reviewed journals (national /international) by faculty and students**

Faculty: 33

Students: Nil

Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.):

Publications in National and International Journals:

Dr. Suparna Pal

- **Data base: Google Scholar**

SI No.	Publication	Cited By	Impact Factor
1.	"Dimeric Phenanthrenes from the orchid <i>Bulbophyllum reptans</i> " by Majumder.P.L.,Pal.S. & Majumder.S. <i>Phytochemistry</i> ,1999, 50 ,891-897	27	3.571
2.	"Rigidanthrin,a new dimeric phenanthrene derivative of the orchid <i>Bulbophyllum rigidum</i> " by Majumder.P.L.,Bandyopadhyay.S & Pal. S., <i>J.Indian Chem...Soc.</i> ,2008, 85 ,1116-1123	4	0.25
3.	"A Steroidal ester from <i>Coelogyne Uniflora</i> " by Majumder P.L.& Pal.S., <i>Phytochemistry</i> ,1990, 29(8) ,2717-2720.	22	3.571
4.	"Occurrence of lignans in the orchidaceae plants <i>Lusia volucris</i> and <i>Bulbophyllum triste</i> " by Majumder.P.L.,Lahiri.S.& Pal.S., <i>J.Indian Chem.Soc.</i> ,1994, 71 ,645-647.	13	0.25
5.	"Rotundatin,a new 9,10-dihydrophenanthrene derivative from <i>Dendrobium rotundatum</i> " by Majumder.P.L. & Pal.S., <i>Phytochemistry</i> ,1992, 31(9) ,3225-3228.	32	3.571

6.	"Cumulatin and tristin,two bibenzyl derivatives from the orchids <i>Dendrobium Cumulatum</i> and <i>Bulbophyllum triste</i> "by Majumder.P.L. & Pal.S., <i>Phytochemistry</i> , 1993, 32(6) ,1561-1565.	47	3.571
7.	"A novel method of carbon-carbon bond formation at the benzylic carbon of 9,10-dihydrophenanthropyrans with methyl ketones by the action of phosphomolybdic acid on silica gel support" by Majumder P.L. & Pal.S., <i>J.Indian Chem.Soc.</i> ,1993.	0	0.25
8.	Four new stilbenoids from the orchids <i>Coelogyne Orchacea</i> and <i>Coelogyne Cristata</i> by Majumder P.L., Pal.S. and Bandyopadhyay.S, <i>Cheminform</i> , 2012, 43(24)	2	0.0

h- index: 5

i10 index : 5

Paper presented/accepted in national/international Seminar/ conference etc.

1. " **Rotundatin, a Novel 9,10-Dihydrophenanthrene Derivative of Biogenetic importance from the orchid *Dendrobium rotundatum***" National Conference-28th Annual Convention of Chemists,December 17-21,1991,organised by Indian Chemical Society,Jadavpur University,Kolkata.

2. " **Novel Dimeric Phenanthrene Derivative from the orchid *Bulbophyllum reptans*** " XVII National Symposium of Organic Chemistry on Natural Product and Drug Development,September 23-25,1997, University of Calcutta,Kolkata.

3. " **Novel Regioselective Oxidative Coupling through Oxymethelene Carbon atom of Phenolic 9,10-Dihydro 5H-Phenanthro[4,5-bcd] Pyrans with PMA on Silica gel support**" XIV National symposium of Organic Chemistry on Advance Studies on Natural Product, February 27-28,1992,University of Calcutta,Kolkata.

4."Structures of Reptanthrin and Isoreptanthrin, two Novel Dimeric Phenanthrene Derivatives from the Orchids *Bulbophyllum reptans* and their Biomimetic Synthesis from the congener *Gymnopusin* by Oxidative Coupling with PMA on Silica Gel Surface and $\text{CuCl}(\text{OH})\cdot\text{TMEDA}$ in CH_2Cl_2 " International Conference On Chemistry and 36th Annual Convention of Chemists(held in commemoration of the Platinum Jubilee Celebration of the Indian Chemical Society),1999,Kolkata.

Dr. Ashis Dey:

- **Data base: Google Scholar**

Sl No.	Publication	Cited By	Impact Factor
1	“A novel technique for the fabrication of Near-Net-Shape CMCs” by A. Dey , M. Chatterjee, M. K. Naskar, S. K. Dalui and K. Basu, <i>Bull. Mater. Sci.</i> , Vol. 25, No. 6, 2002.	2	
2	“Near-net-shape fibre reinforced ceramic matrix composites by the sol infiltration technique”, A. Dey , M. Chatterjee, M. K. Naskar, K. Basu, <i>Materials Letters</i> , 57 (2003) 2919-2926.	5	
3	“Effects of processing parameters on the fabrication of near-net-shape fibre reinforced oxide ceramic matrix composites via sol-gel route” M. K. Naskar, M. Chatterjee, A. Dey and K. Basu, <i>Ceramic International</i> , 30 (2004), 257-265.	9	
4.	“Characterization and dielectric properties of polyaniline-TiO ₂ nanocomposites”; Ashis Dey , Sukanta De, Amitabha De and S. K. De; <i>Nanotechnology</i> , 15 (2004) 1277-1283.	169	
5.	“Charge transport mechanism of vanadium pentoxide xerogel - Polyaniline nanocomposite”; Sukanta De, Ashis Dey and S. K. De; <i>The European Physical Journal B.</i> , 46 (2005) 355-361.	15	
6.	“Electrical transport and dielectric relaxation in Fe ₃ O ₄ -polypyrrole hybrid nanocomposites, Ashis Dey , Amitabha De and S. K. De, <i>J. Phys: Condens. Matter</i> , 17 (2005) 5895-5910.	33	
7.	Proton and electron conduction in polymer intercalated vanadium pentoxide xerogel”, Sukanta De, Ashis Dey , and S. K. De, <i>Solid State Ionics</i> , 177 (2006) 245.	2	
8.	Characterization and transport properties of intercalated polypyrrole - vanadium pentoxide xerogel nanocomposite”; Sukanta De, Ashis Dey and S. K. De; <i>Solid State Communications</i> , 137 (2006) 662.	16	
9.	Giant dielectric constant in titania nanoparticles embedded in conducting polymer matrix”, Ashis Dey , Sukanta De, Amitabha De and S. K. De, <i>J. Nanosci. Nanotechnol</i> , 6 (2006) 1427-1436.	13	
10.	“Impedance and dielectric spectra in zirconia-polypyrrole hybrid nanocomposites, Ashis Dey and S. K. De, <i>J. Phys. D: Appl. Phys.</i> 39 (2006) 4077-4086.	4	
11.	Conductivity relaxation in zirconia nanoparticles dispersed in conducting polymer, Ashis Dey and S. K. De, <i>J. Appl. Poly. Sci.</i> 105 (2007) 2225-2235.	9	
12.	Large dielectric constant in zirconia polypyrrole hybrid nanocomposites, Ashis Dey and S. K. De, <i>J. Nanosci. Nanotechnol</i> , 7 (2007) 2010-2015.	6	

13.	Structure, morphology and ionic conductivity of solid polymer electrolyte Arup Dey, S. Karan, Ashis Dey and S.K. De, <i>Mater. Res. Bull.</i> 46 (2011) 2009-2015.	5	
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h- index : 6

i 10-index : 5

Paper presented/accepted in national/international Seminar/ conference etc.

1. "Nanocrystalline CdS particles by an emulsion technique" International Conference on Progress in Disperse Systems, January 16-18, 2002, Department of Chemistry, University of Calcutta, Kolkata and Indian Society for Surface Science and Technology, Jadavpur University Campus, Kolkata, India.
2. "A novel technique for the fabrication of Near-Net-Shape CMCs" The National Conference on Frontiers in Materials Science and Technology (FMST 02), February 22-23, 2002, Materials Science Centre, Indian Institute of Technology, Kharagpur.
3. "Transport and dielectric properties of polypyrrole-TiO₂ nanocomposites; International Conference on Nanoscience and Technology (ICONSAT 2003)," Hyatt Regency (17-20 December), Saha Institute of Nuclear Physics, Kolkata, India.
4. "Synthesis, Characterization and Transport Properties of Polypyrrole-Titania Nanocomposite;, International Seminar on Advances in Polymer Technology (APT'04)", Jan 16 – 17, 2004, CUSAT, Kochi, India.
5. "Preparation, characterisation, transport and dielectric properties of polypyrrole-Fe₃O₄ nanocomposites" 15th AGM-MRSI, February 8-11, 2004, Dept. of Metallurgical Engineering, Centre for Advanced Study Institute of Technology, Benaras Hindu University, Varanasi.
6. "Giant dielectric constant in zirconia polypyrrole hybrid nanocomposites, International Conference on Nanoscience and Technology (ICONSAT 2006)', India Habitat Centre (16-18 March), Indian Institute of Technology, New Delhi, India.
7. "Electrical transport and dielectric properties of zirconia polyaniline hybrid nanocomposites, National Conference on Frontiers in Polymer Science & Technology"(POLYMER 2006), Polymer Science Unit (10-12 February), Indian Association for the Cultivation of Science, Kolkata, India.

8. "Micro-structural and optical characterization of conducting polymer nanocomposites and exploration of their transport and dielectric properties"

NATIONAL CONFERENCE ON NANOMETATERIALS: APPLICATIONS AND PROPERTIES ORGANIZED BY: DEPT. OF PHYSICS, ARTS, COMMERCE AND SCIENCE COLLEGE, SONAI (M.S.), 22 - 23 FEB. 2013

9. "Colossal Dielectric Constant in Titania Nanodots Embedded in Conducting Polymer Matrix" 2nd International Conference of Nanotechnology (ICNT 2015) Date: February 19 - 22, 2015 Organized by Haldia Regional Centre (HRC) Indian Institute of Chemical Engineers Collaboration with: Department of Chemical Engineering Haldia Institute of Technology.

Dr. Ujjwal Das :

- Data base : Google Scholar

Sl. No.	Publication	Cited by	Impact Factor
1.	RhCl₃-Assisted C–H and C–S Bond Scissions: Isomeric Self-Association of Organorhodium(III) Thiolato Complex. Synthesis, Structure, and Electrochemistry Kausikisankar Pramanik, Ujjwal Das, Basab Adhikari, Deepak Chopra, and Helen Stoeckli-Evans <i>Inorg. Chem.</i> , 2008 , 47 (2), pp 429–438	0	4.794
2.	Iridium-Mediated C—S Bond Activation and Transformations: Organoiridium(III) Thioether, Thiolato, Sulfinato and Thiyl Radical Compounds. Synthesis, Mechanistic, Spectral, Electrochemical and Theoretical Aspects U. Das , T. Ghorui , B. Adhikari , S. Roy , S. Pramanik and K. Pramanik , <i>Dalton Trans.</i> , 2015, XX, XXXX-XXXX, [Accepted 25 Mar 2015]	0	4.097

h-index :0

i 10 index :0

Poster presented / accepted in National / International seminar, conference etc.

1. **“Self-association of Organorhodium(III) Thiolato Complex to syn and anti isomers: Synthesis, Structure and Noncovalant Interactions”**(Poster presented), 37th National Seminar on Crystallography, 6-8th February, 2008 Dept. of physics Jadavpur University.
2. **“IrCl₃-Assisted C–H and C–S Bond Scissions: Synthesis, Structure and Electrochemistry of Organosulfur Iridium(III) Compounds”**(Poster presented), National Seminar Friends of Inorganic Chemistry First Scientific Meeting, 21st December, 2008, Jadavpur University.
3. **“RuCl₂(PPh₃)₃-mediated C–S Bond Cleavage and Activation of molecular Oxygen by in situ Generated Ru(II) –thiolato Intermediate to Stable Ru(II)-Sulfinato Compound”** (Poster presented) CRSI (Kolkata Chapter) Symposium VIII on Advances in Chemical Research (National Level) , 6th August, 2010, Dept. of chemistry Bengal Engineering and Science university, Shibpur.
4. **“ Platinum Metals mediated C–S bond cleavage and Activation of molecular Oxygen”** (Poster presented), International Symposium on Frontiers in Inorganic chemistry (FIC-2010), 11-13th December, 2010, Dept. of Inorganic chemistry Indian Association for the Cultivation of Association (IACS).
5. **Indian Saffron Curcumin- The Magic Pigment, *Quest*- journal of the Faculty of Science, Sarsuna College, 2011, 1(1), 16-21, March, 2011, Sarsuna College.**
6. **“RhCl₃-mediated C–S bond cleavage of coordinated aryl and alkyl aryl thioethers Spontaneous self- association of thiolato complex to syn –dimers with Rh₂S₂ core, (Poster presented), National seminar on Inorganic Chemistry-2011 and the Celebration of 150th Birth Anniversary of A.P.C Roy, 8-9th July, 2011 Dept. of Chemistry, Jadavpur University.**
7. **“Exposure of toxic solvents & chemicals squander from Research Laboratories: Human Impact on the Environment & Creature Health in Kolkata & Surrounding”**(Paper presented) UGC Sponsored State Level seminar on Geographical Appraisal of the city of joy’s Environmental well being. 17-18th January, 2012, Dept of Geography Sarsuna College.
8. **“μ²-S Dimerization of Organoiridium(III) Thiolato Complex In Presence of Thiophilic Metals Through the Intermediacy of A Novel Hexanuclear Ir₂Ag₄} Species: Synthesis, Structure and Spectral Studies”**(Poster presented), International Conference on Structural Chemistry of molecules and materials. [SCOMM- 2014], RSC, 30th November, 1st-2nd December, 2014, Calcutta University.

Sarmistha Dhatt

- Data Base : Google scholar

Sl.No.	Publication	Cited by	Impact Factor
1.	A perturbation theory without energy corrections. S. Dhatt and K. Bhattacharyya, Int. J. Quantum .Chem. 111 (2011) 1950	0	1.17
2.	Concurrent multiple-state analytic perturbation theory via supersymmetry. S. Dhatt and K. Bhattacharyya, J. Math. Phys. 52 (2011) 042101	0	1.27
3.	Surprises in nonlinear perturbations: Case of a multiple well potential problem. S. Dhatt and K. Bhattacharyya, Int. J. Quantum. Chem. 112 (2012) 171	0	1.17
4.	Infinite square well with a sinusoidal bottom: a candidate for the Klauder phenomenon? S. Dhatt and K. Bhattacharyya, J. Math. Chem. 50 (2012) 9	0	1.27
5.	Embedding Scaling Relations in Pade Approximants: Detours to Tame Divergent Perturbation Series. S. Dhatt and K. Bhattacharyya, Int. J. Quantum. Chem 113 (2013) 916.	1	1.17
6.	Asymptotic response of observables from divergent weak-coupling expansions: A fractional- calculus-assisted Padé technique. S. Dhatt and K. Bhattacharyya, Physical Review E 86 (2012) 026711.	2	2.33
7.	Single-substrate Enzyme Kinetics: The Quasi-steady-state Approximation and Beyond. S. Dhatt and K. Bhattacharyya, J. Math. Chem. 51 (2013) 1467.	1	1.17
8.	Accurate estimates of asymptotic indices via fractional calculus S. Dhatt and K. Bhattacharyya, J. Math. Chem. DOI 10.1007/s10910-013-0258-	2	1.27
9.	Enzyme Kinetics: A critique of the Quasi-Steady State-Approximations. K. Bhattacharyya and S. Dhatt, MATCH Commun. Math. Comput. Chem. 70 (2013) 759-784	1	1.79
10.	Understanding malignancy and viral action: An extended Michaelis Menten type model for T-cell proliferation (Communicated) 2014. S. Dhatt		

h-index : 2

i-10 index : 0

20. Areas of consultancy and income generated : Nil

21. Faculty as members in

a) National committees b) International Committees c) Editorial Boards: Student projects:

Dr. SUPARNA PAL: One National Committee (**JOURNAL OF INDIAN CHEMICAL SOCIETY**)

Dr. ASHIS DEY: One National Committee (**Indian Association for the Cultivation of Science**)

22. Students Projects: Nil

a. Percentage of students who have done in-house projects including inter departmental programme: N.A.

b. Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies: About 10%

23. Awards / Recognitions received by faculty and students: Nil

24. List of eminent academicians and scientists / visitors to the department: Nil

25. Seminars/ Conferences/Workshops organized & the source of funding: Nil

a. National

b. International

26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
B.Sc. (Honours)	112	22	12	10	92%
B.Sc.(General)		96			71.87%

*M = Male *F = Female

27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
B.Sc. (Honours)	100%	0%	0%
B.Sc. (General)	100%	0%	0%

27. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Competitive Examination	No. of successful students (2008 –2014)
NET (UGC / CSIR)	03
SET	Not known
Civil Services	Not known
SSC/TET	01
Airlines, Navy, Police, Technical	02

29. Student progression

Student progression	Against % enrolled	
UG to PG	Pass out year	Percent
	2014	80%
	2013	33.3%
	2012	50%
	2011	82%
	2010	33.3%
PG to M.Phil.	0	

PG to Ph.D.	4
Ph.D. to Post-Doctoral	0
Employed <ul style="list-style-type: none"> • Campus selection • Other than campus recruitment 	3 Not known
Entrepreneurship/Self-employment	Not known

30. Details of Infrastructural facilities:

a. **Central Library and Seminar Library:** Both Reading and Lending facility of Books.

i) **No. Of Books in Central Library: 840**

ii) **No. Of Books in Seminar Library: 212**

b. **Internet facilities for Staff & Students:** Desktop and Laptop Computers with wireless Broadband

c. **Class rooms with ICT facility:** i) Overhead projector ii) LCD projector

d. **Laboratories:** The Chemistry laboratory is equipped with centrifuge, distillation plant, digital microbalance, digital balance, magnetic stirrer, pH meter, digital colorimeter, **FT-IR & VIS UV spectrophotometer**, potentiometer, conductivity meter, vacuum pump & oven, & various glasswares and organic & inorganic chemicals that can be used in UG & PG courses.

31. Number of students receiving financial assistance from college, university, government or other agencies:

- Government's Backward Caste Scholarship : 5 CHEMISTRY HONOURS students (2013-14 session)
- Minority Scholarship : 3 CHEMISTRY HONOURS students (2013-14 session)

32. Details on student enrichment programmes (special lectures workshop / seminar) with external experts:

a. Seminar:

Departmental Students' Seminars for enrich their knowledge in this field:

Sl No.	Topic	Year
1.	Chemistry for Mankind	2008
2.	Modern Aspects of Chemistry	2009
3.	Chemistry Forever	2010
4.	Chemistry Today	2012
5.	Chemistry Ubiquitously	2014

b. Exhibition:

Sl No.	Topic	Year
1.	"Chemistry: Development or Destroy"	2009
2.	"Crystal-The Shiny Universe" [Celebrating the International year of Crystallography-2014]	2014

These exhibitions are not only for the chemistry departmental students but also it is open for all, mainly for the students of different schools and colleges, who enjoyed, acquired the basic knowledge.

c. Wall Magazine/ Wall Poster Presentation:

Sl No.	Topic	Year
1.	Chemistry Forever	2010
2.	A Tribute to the Pioneer of Indian Chemist, P. C. Ray	2011
3.	Sarin- The Violent Chemical Killer in Syria	2013
4.	Crystals: Molecular Structures: Shiny Civilisation [In the International year of Crystallography-2014]	2014

d. Quiz Contest/ Debate:

A quiz contest programme was organized in the Department of Chemistry on December, 2014, on the topic of "**Popular Chemistry**".

33. Teaching methods adopted to improve student learning:

- i) Use of overhead projectors for 90% lectures, especially to show diagrams.
- ii) Use of Powerpoint presentations and LCD projector for selected lectures.
- iii) Use of computer animations and multimedia for selected lecture.

34. Participation in Institutional Social Responsibility (ISR) and Extension Activity : Nil

35. SWOC analysis of the department and Future plans:

Strengths: Inspiring team of students and teachers- to work together.

Senior faculty members

Well equipped laboratory facility

Modern instrumental facility.

Weaknesses: Lack of teachers

Lack of space

Syllabus bound work no apprenticeship

Opportunities: Projects to meet reality with targets

Involve students for training and apprenticeship

Collaboration efforts

Challenges: To make classes more technology intensive

Extra class and student communication

Future Plans: Introduction of Faculty Exchange programmes with other institutions
Organizing National/International seminars.