INTRODUCTORY PAGE

Teaching /Administrative/ Industrial Exposures

Teaching:

- *35 yrs, including 13 yrs as Professor in Chemistry*
- *Taught at:*
- *University of North Bengal*
- *Raiganj (University) College*
- *St. Joseph's College, Darjeeling*
- *Institute of Science, University of Mumbai, Mumbai.*

Administrative:

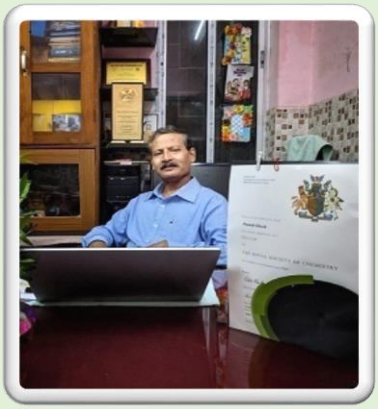
- *Registrar: University of North Bengal*
- *Director RDC: NBU*
- *President IIC: NBU*
- *Campus - In Charge, NBU: About 900 days*
- *Member of the Executive Council, NBU.*

Head of the Departments of NBU

- *Chemistry*
- *Tea Science*
- *Pharmaceutical Technology*
- *Microbiology*
- *Food Technology.*

Industrial:

Assistant Manager (R & D): 7 yrs in LIL, Navi Mumbai



Pranab Ghosh, FRSC
M. Sc, NET, Ph.D (Chemistry).
Vice Chancellor
Dakshin Dinajpur University

- *Fellow, Royal Society of Chemistry, UK.*
- *Academic Visitor: University of Sannio, Benevento, Italy.*
- *Research Fellow, INTI International University, Malaysia.*
- *Life member, Chemical Research Society of India (CRSI), Department of Organic Chemistry, IISc, Bangalore.*
- *Life member, Tribology Society of India, Hyderabad.*
- *Fellow member, International Congress of Chemistry and Environment,*
- *Life member, Indian Chemical Society, 92, APC Road, Kolkata-9.*
- *Convenor, CRSI North Bengal Local Chapter.*
- *Fellow member Turkish Chemical Society*

- *Research Experience: 38 yrs.*
- *Research Publication: 320*
- *Guided Ph.D students for their degree: 40*
- *Number of ongoing Research Projects: 04*
- *Number of Research Projects Completed: 18*

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- *Foreign Trips:*

1. *Rome, Italy, as a Key Note Speaker in the 6th International, Conference on Chemistry, Organised by Coalesce Research Group, USA.*

2. *University of Sannio, Benevento, Italy, Invited to deliver Spl. Lectures.*

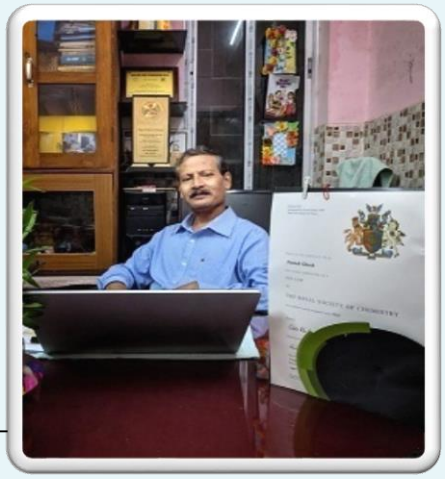
3. *Tribhuban University, Kathmandu, Nepal, as an external Expert for Ph.d viva voce.*

4. *Rome, Italy, as a Key Note Speaker in the 7th International, Conference on Chemistry, Organised by Coalesce Research Group, USA.*

Curriculum Vitae

1. General Information:

➢ **Name:**	**PRANAB GHOSH**
➢ **Designation:**	**Vice Chancellor, Dakshin Dinajpur University**
➢ **Mailing Address:**	**Office of the Vice Chancellor, Dakshin Dinajpur University Dt. Balurghat, West Bengal, India-733 101.**
➢ **E-mail:**	**vc@dduniv.ac.in pranabchem@nbu.ac.in; pizy12@yahoo.com**
➢ **Contact No.:**	**+91 7047892539 +91 03522-796202**



2. a. Details of Teaching Experience

S. No	Post held	Pay Scale	Organisation	Nature of duties	Experience in years and Months
1	Professor	Rs 144200 - 218200/- with Grade Pay Rs 10000/-pm	University of North Bengal, West Bengal, India -734013	As per the UGC norms of University Professor	13 years
2	Associate Professor	Rs. 37,400 — 67,000/- with Grade Pay Rs 9000/-pm	University of North Bengal, West Bengal, India -734013	As per the UGC norms of University Assoc. Professor	03 Yrs
3	Reader	Rs 12000 – 18300/-pm	University of North Bengal, West Bengal, India -734013	As per the UGC norms of University Reader Post	03 Yrs
4	Sr. Lecturer	Rs 10000 – 15200/-pm	Raiganj College [University college], Raiganj, North Dinajpur, WB.	As per the UGC norms of University Sr. Lecturer Post	02 Yrs 05 Months
5	Lecturer	Rs 8000 – 13500/-pm	Raiganj College [University college], Raiganj, North Dinajpur, WB.	As per the UGC norms of University Lecturer Post	04 Yrs

6	Lecturer	Rs 2200 – 4000/-pm	St. Joseph's College, Darjeeling	As per the UGC norms of University Lecturer Post	02yrs
7	Teaching Post Graduate students	Honorary	Institute of Science, University of Bombay, Madam Cama Road, Fort, Mumbai.	Visiting Lecturer (Honorary)	Jan 1998 to May 2000

2.b. Industrial Experience:

Level	Duration	Designation	NAME OF THE ORGANIZATION
Assistant Manager (R & D)	Sept. 1998-May 2000	Assistant Manager	LUBRIZOL INDIA LTD. [A Govt. of India MNC with Lubrizol Corporation, USA,] 9/3 THANE BELAPUR ROAD, TURBHE, NEW BOMBAY- 400705
Sr Officer (R & D)	Sept 1993	Aug 1998	-Do-

3. Educational Qualification

S. No	Qualification	University	Subject(s)/Topics
A	Ph. D	University of North Bengal, West Bengal, India -734013	Chemistry/ Organic Chemistry
B	NET (CSIR-UGC)	CSIR-UGC	Chemical Sciences
C	M. Sc in Chemistry	University of North Bengal, West Bengal, India -734013	Chemistry/ Organic Chemistry (as spl paper)

4. Administrative Experience/Post(s) held

Sr. no	Post	Organisation/ University	Duration		Experience (In years and Months)
			From	To	
1	**Registrar** (officiating)	University of North Bengal, Darjeeling, WB – 734013	1st February, 2021	30th Nov., 2022	**01 yr 10 Months**
2	**Member of the Executive Council of the University**	**Member of the Executive Council, University of North** Bengal, Darjeeling, WB - 734013	July 2017	June 2018	**01 yr (as per Govt directive)**

3	**Campus-In Charge**	**University of North** Bengal, Darjeeling, WB - 734013	**Since 2014, and as per the directive of Hon'ble Vice Chancellors during their absence in the Campus.**	Continuing	**900 days (approx.)**
4	**Director Research & Development Cell, NBU (Addl. Charge)**	**University of North** Bengal, Darjeeling, WB - 734013	August 2019	**Jan 20, 2025**	**05 yrs**
5	**President of the Institution`s Innovation Council (IIC),**	University of north Bengal, which is centrally coordinated by MHRD`s Innovation Cell,	Nov. 2019	**March 2024**	**04 yrs 04 months**
6	**Member IQAC, NBU**	**University of North** Bengal, Darjeeling, WB - 734013	July 2013	October 2022	**09 yrs**
7	**Head of the Department**	**Department of Chemistry,** University of North Bengal, Darjeeling-734013 **Two terms.**	1st term: 01 Aug 2008 & 2nd term: 14th Feb.2018	31st July.2010 13th Feb2020	**02 yrs** **02 yrs**
8	**Head of the Department**	**Department of Pharmaceutical Technology**, University of North Bengal, Darjeeling-734013	July 2017	Feb 2020	**02 years 07 months**
9	**Head of the Department**	**Department of Tea Science**. University of North Bengal, Darjeeling-734013	July 2017	Feb 2020	**02 yrs 07 Months**

10	Head of the Department	**Department of Microbiology**, University of North Bengal, Darjeeling-734013	March 2012	April 2012	**01 Month**
11	**Election Commissioner**	For the Election of the NBU Students' Association	2017	-	**-**

5. Chairman/Member of Professional/Academic Bodies

Sr. no	Post	Organisation/ University	Duration		Experience (In years and Months)
			From	To	
1	**Chairman, Board of Research studies**	• **Department of Chemistry,** University of North Bengal.	Aug 01 2008 & Feb 14, 2018	July 31, 2010 Feb 13, 2020	02 yrs 02 yrs
		• **Department of Pharmaceutical Technology,** University of North Bengal.	July 2017	Feb 2020	02 yrs 07 months
		• **Department of Tea Science,** University of North Bengal.	July 2017	Feb, 2020	02 yrs 07 m0nths
		• **Department of Microbiology,** University of North Bengal.	March 2012	April, 2012	01 month
2	**Chairman PG Board of studies**	• **Department of Chemistry,** University of North Bengal.	Aug 01 2008 & Feb 14, 2018	July 31, 2010 Feb 13, 2020	04 yrs
		• **Department of Pharmaceutical Technology,** University of North Bengal	July 2017	Feb 2020	02 yrs 07 months
		• **Department of Tea Science,** University of North Bengal.	July 2017	Feb, 2020	02 yrs 07 months
		Department of Microbiology, University of North Bengal	March 2012	April, 2012	01 month

3	**Chairman, Under Graduate Board of Studies**	**Chairman, Under Graduate Board of Studies in Chemistry** for the UG courses under the affiliation of University of North Bengal	July, 2012	Aug, 2022	10 yrs
		• **Chairman, Under Graduate Board of Studies in EVS** for the UG courses under the affiliation of University of North Bengal	Jan. 2017	Feb 2019	02 yrs
		• **Chairman, Under Graduate Board of Studies in EVS** for the UG courses under the **ODL** mode of University of North Bengal	June, 2020	Continuing	03 yrs 06 Months, till date
4	**Member, PG Board of studies**	• Department of Chemistry, University of North Bengal.	01, Dec. 2006	Continuing	17 yrs
		• Department of Pharmaceutical Technology , University of North Bengal	July 2017 -	Feb 2020 -	2 yrs 07months
		• Department of Tea Science, University of North Bengal.	July 2017	Feb 2020	2 yrs 07 months
		• Department of Food Technology, University of North Bengal	July 2017	Continuing	07 yrs

5	**Member of the advisory Committee**	• Department of Pharmaceutical Technology, University of North Bengal • Department of Food Technology, University of North Bengal • Department of Tea Science, University of North Bengal. • Department of Bio Informatics, University of North Bengal	Feb. 2020 Feb 2020 Feb 2020 Feb 2020	June 2023 June 2023 June 2023 June 2023	03yrs 04months
6	**Member, Board of Research studies**	• Department of Chemistry, University of North Bengal. • Department of Pharmaceutical Technology, University of North Bengal • Department of Tea Science, University of North Bengal • Department of Food Technology, University of North Bengal. • Department of Chemistry, Coochbehar Panchanan Barma University, WB • Department of Chemistry, Raiganj University, Raiganj, UD, WB	Dec. 2006 July 2017 July 2017 July 2017 Jan. 2018 March 2018	Continuing June 2023 June 2023 June 2023 Continuing Continuing	17 yrs 06 yrs 06 yrs 06 yrs 06 yrs 06 yrs

		• Subject Expert for Applied Chemistry for RDC (Research Degree Committee) 2023 for PhD Program of the Chhattisgarh Swami Vivekanand Technical University, Bhilai, Chhattisgarh	Dec. 2023	Continuing	1yr 2 months
7	• **Member of Research Advisory committee (RAC), Research Degree Committee (RDC)**	• Department of Chemistry Coochbehar Panchanan Barma University, WB	Jan. 2019	Continuing	05 yrs
		• Department of Chemistry, Raiganj University, Raiganj, UD, WB	March 2019	Continuing	05 yrs
8.	• **Member of the selection committee for the recruitment of Assistant Professor, Assoc. Professor and Professor.** • **Member of the selection committee for the as nominee of Hon'ble Vice Chancellor for the career advancement of college teachers of affiliated colleges.**	**From the Year 2017**		CONTINUING	

	• **Member of the selection committee for the as nominee of Hon'ble Vice Chancellor for the recruitment of college Teachers (Contractual and Guest Faculty) for the affiliated colleges. Etc.**				

6. Participation and contribution in relevant areas in higher education

Area of Contribution	Organisation	Area of specialisation
Visiting Professor	• University of Gour Banga, Malda, WB • Raiganj University, Raiganj, North Dinajpur, WB. • Coochbehar Panchanan Barma University, Coochbehar, WB.	Organic Chemistry
Resource Person	i. **Refreshers course in Chemistry: Conducted by UGC HRDC (presently named as UGC MMTTC) at Savitribai Phule Pune University, Ganeshkhind Road, Pune, Mahashtra-411007.**	Natural Product Chemistry and Functional Materials
	ii. **Refreshers course in Chemistry: Conducted by UGC HRDC (presently named as UGC MMTTC) at North Eastern Hill University (NEHU), Shillong, Meghalaya.**	Performance Additives for Lube Oil

	iii. **Refreshers course in Chemistry: Conducted by UGC HRDC at North Bengal University (presently named as UGC MMTTC), Darjeeling, WB.**	Natural Resource and its Utilization
	iv. **Orientation Program: Conducted by UGC HRDC at North Bengal University, Darjeeling, WB.**	Isolation and Extraction of Phytochemicals
	v. **Seminar cum workshop on Vistas In Biological Sciences, Organized By Biswa Bangla Genome Centre & Bioinformatics Facility Centre, North Bengal University, Darjeeling, WB.**	Natural Product Chemistry
	vi. **Orientation Program of Indian Academy of Sciences (IAS, Bengaluru), organised by Surendranath College, Kolkata, WB.**	Natural Resource and its Utilizations.
Others: Seminar / Conference / Workshop Lecture	**i.** **Delivered Keynote Lecture in 6th ICCE-Rome, Italy, March 21, 2024.**	**Vegetable oil based functional materials as sustainable additives for lubricants**
	ii. **Delivered Special Lectures in the Department of Chemistry,**	Natural Product chemistry and Material Science

	Università degli Studi del Sannio di Benevento, Benevento, Italy, on 25th March 2024.	Material Science
	iii. Delivered Invited Lectures in the International Seminar, KaSAM-2012, May 9-12, 2012 Organized by Nepal Chemical Society and Central Department of Chemistry, Tribhuvan University, Kathmandu, Nepal.	Lube oil Additives
	iv. Delivered Invited Lectures in the International Conference, ICAMN-2011, Oct-2011, Organized by Nepal Chemical Society and Central Department of Chemistry, Tribhuvan University, Kathmandu, Nepal.	Natural Product Chemistry
	v. Delivered Invited Lectures in the Regional Chemistry Seminar in the Dept of Chemistry, MMAM Campus, Tribhuvan University Biratnagar campus, May 7-8, 2011, Organized by Nepal Chemical Society, Nepal.	

	vi. Department of Chemistry, Università degli Studi del Sannio di Benevento, Benevento, Italy, on 25th March 2024. **vii. In addition to the above, Delivered Key Note / Plenary / Invited Lectures in Various International and National Conferences / Seminars / Workshops, held in different places.**	a. Performance additives for Lube oil. b. Natural product Chemistry

7. Involvement with formulation of academic Programs:

Sr No.	Nomenclature of Innovative Academic Programs formulated	Date of Approval by Academic Council	Year of Introduction
1	Curriculum for PG course in Chemistry	September 2008	Session 2008-2009
2	Revise Curriculum for PG course in Chemistry (Under CBCS system}	August 2018	Session 2018-2019
3	Curriculum for PG course in Pharmaceutical Science	August 2018	Session 2018-2019
4	Curriculum for PG course in Food Technology	August 2018	Session 2018-2019
5	Curriculum for PG course in Tea Science	August 2018	Session 2018-2019
6	Curriculum for UG course in Chemistry (under CBCS system)	September 2018	Session 2018-2019
7	Revised syllabus for UG course (Sem 1,3 & 5) in chemistry	August 2020	Session 2020-2021
8	Revised syllabus for UG course (Sem 2,4 & 6) in chemistry	October 2020	Session 2020-2021

9	Revised syllabus for UG course (Sem 2,4 & 6) in chemistry	March 2021	Session 2021

8. Important MOUs formulated for academic collaborations

Sr no.	MoUs formulated	Name of agencies/ Department Involved	Year of MoU
1	MoU with IIP, Dehradun.	University of North Bengal and Indian Institute of Petroleum, Dehradun.	2010
2	MoU with TCG Life Sciences, Kolkata	Department of Chemistry, NBU and R & D unit of TCG life Sciences, KOLKATA	2018
3	MoU with MMAM Campus, Biratnagar,Tribhuban University, Nepal	University of North Bengal and with MMAM Campus, Tribhuban University, Nepal	2021
4	MoU with Department of Applied Chemistry, Bhilai Institute of Technology	Department of Chemistry and Department of Applied Chemistry, Bhilai Institute of Technology, Durg, Chhattisgarh.	2022
5	MoU with Department of CSE, Jalpaiguri Govt. Engineering College, Jalpaiguri, WB.	Department of Computer Science, NBU and Department of CSE, Jalpaiguri Govt. Engineering College, Jalpaiguri, WB	2022

9. International Academic Exposure

Sr no	Post Assignment	Organisation/ University	Area of Assignment	Duration		
				From	To	In Years and Months
1	Assigned External Examiner for evaluation of the Ph.D thesis of Ms Sofia Principe, Department of Engineering, Università degli	Department of Engineering, Università degli Studi del Sannio di Benevento, ITALY.	External Examiner for evaluation of the Ph.D thesis of Ms Sofia Principe, Department of Engineering.	May 2024	–	–

	Studi del Sannio di Benevento, ITALY.					
2	Member of the organizing committee of 7th International conference on Chemistry, to be held on Nov 11-12, 2024 in Barcelona, Spain.	7th International Conference on Chemistry, Organized by Coalesce Research Group, USA	Invited to deliver the i. Welcome address followed by ii. Keynote address	Nov. 11, 2024	Nov. 12, 2024	_
3	External Examiner for Conducting Ph.D Viva-voce of Sri Rohit Dev, Tribhuvan University, Kathmandu , Nepal	Tribhuvan University, Kathmandu, Nepal	External Examiner for Conducting Ph.D Viva-voce of Sri Rohit Dev, Research Scholar, Tribhuvan University, Kathmandu , Nepal	Feb 11, 2024	_	_
4	Research Fellow	INTI International University, Malaysia.	Academic: Visiting Professor, Collaborative Research etc.	15 Dec. 2023	31st Dec. 2025	Two Years
5	Delivered Keynote address	6Th International Conference on Chemistry and Chemical Engineering, Organized by Coalesce Research Group, USA.	Invited to deliver Keynote address	March 21, 2024	March 22, 2024	-
6	Member of the organizing committee of 7th International conference on Chemistry, **to be held on Nov 11-12, 2024**	7th International Conference on Chemistry, Organized by Coalesce Research Group, USA	Invited to deliver the i. Welcome address followed by ii. Keynote address	Nov 11-2024	Nov 12-, 2024	
7	External Examiner for Conducting Ph.D Viva-voce of Sri Narendra Kr. Chaudhary, Tribhuvan University,	Tribhuvan University, Kathmandu, Nepal	External Examiner for Conducting Ph. D Viva-voce of Sri Narendra Kr. Chaudhary, Research Scholar, Tribhuvan University, Kathmandu, Nepal	July 22, 2018	_	_

	Kathmandu, Nepal					

10. A. Scholarly Achievements:

A. Contribution to Journal and Books

Nature of contribution	Details
Books / Book Chapter Authored	15 (so far)
Journal Publication	320
Peer reviewer	Journal of National Level: 08 (So far) Journal of International Level: 10(So far), including, RSC, ACS, Wiley, Elsevier, Springer, Taylor and Francis publications etc.
Others: Member of learned societies:	• **Fellow, Royal Society of Chemistry, UK** • Research Fellow, INTI International University, Malaysia • **Life member,** Chemical Research • Society of India (CRSI), Department of Organic Chemistry, IISc, Bangalore. • **Life member**, Tribology Society of India, Hyderabad. • **Fellow member,** International Congress of Chemistry and Environment, Indore. M.P. • **Life member,** Indian Chemical Society, 92, APC Road, Kolkata-9. • **Convenor, CRSI North Bengal Local Chapter.** • **Fellow member Turkish Chemical Society**
Author of Hot Article: *"β-Cyclodextrin: A supramolecular catalyst for metal-free approach towards the synthesis of 2-amino-4,6-diphenyl -nicotinonitriles and 2,3-dihydroquinazolin -4(1H) -one".*	**ACCEPTED AS 'HOT ARTICLE' FOR THE YEAR 2021, in Royal Society of Chemistry Journal**." RSC Adv., 2021, 11, 1271–1281.

10. B. Publication

: Please see Annexure I, enclosed

Total Publication: 320.

10 C. Participation and Scholarly presentation in conferences

C.1 National: 40(Only very recent are Listed below)

Sr No	Date	Title of Conference or Institution	Title/subject of Presentation
1.	24-25 Jan. 2025	7th Regional Science and Technology Congress (Zone I), held in Siliguri College, Siliguri.	Invited Lecture on Functional molecules: Prospect of Industrial Growth in North Bengal
2.	11-12 Nov.2024	International Conference on Chemistry , Organized by Coalesce Research Group, USA	Natural Product Chemistry
3.	13-14 August 2024	National Conference on "Chemistry for Sustainability", Dept of Chemistry, University of North Bengal	Greener additives for Lube oil
4.	Aug. 9-11, 2024	Research & Industrial Conclave (RIC)-2024. IIT Guwahati.	Chemistry and Technology: Synthesis, Characterization and Evaluation of Performance additives for Lubricating Oil.
5.	7.12.2023	Seminar cum workshop on Vistas In Biological Sciences, Organized By Biswa Bangla Genome Centre & Bioinformatics Facility Centre, North Bengal University,	Isolation and Characterization of Phytochemicals from Medicinal Plants.
6.	8.12.2023	Seminar on, "Empowering University Officers - Strategies for Leadership and Innovation in Higher Education", **University of North Bengal**	My concept of Management Philosophy
7.	4th April 2023	Recent advancement in Chemical Science towards sustainable development, Kaliyaganj College, UD, WB.	Sustainable Mobility and Protection of Environment
8.	3rd May 2023	Environmental Issues: Protection, Conservation and Role of Youth, Shree Agrasen Mahavidyalaya, Dalkhola, UD, WB.	Key Note Address
9.	15-16 January 2024	6th Regional Science and Technology Congress (Zone I), held in Ananda College, Jalpaiguri.	Invited Lecture on Natural Resource to Functional molecules: Prospect of Industrial Growth in North Bengal
10.	17-18 January 2023	5th Regional Science and Technology Congress (Zone I), held in Coochbehar Panchanan Barma University, Coochbehar.	Invited Lecture on Green Chemistry.
11.	12th May 2023	ABN Seal College, Coochbehar, WB	Ashima Chatterjee Memorial Lecture on Natural Product Chemistry

C II: International: 25 (Some RECENT of them are listed below)

Sr No	Date	Title of Conference or Institution	Title/subject of Presentation
1	March 21-22, 2024	6Th International Conference on Chemistry and Chemical Engineering, Organized by Coalesce Research Group, USA	**Keynote address: Vegetable oil based functional materials as sustainable additives for lubricants**
2	January 12-14. 2024	International Conference on "Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (ICM-2024)"at Mahatma Gandhi University, Kottayam, Kerala, India	**Invited Talk: Synthesis and Evaluation of Performance Additives for Lube Oil: A Greener Approach**
2	4th April 2023	Recent advancement in Chemical Science towards sustainable development, Kaliyaganj College, UD, WB.	Sustainable Mobility and Protection of Environment
3	13-15 March 2020	NIT Durgapur, WB	Environmental Chemistry
4	22-23 Nov 2019	IYPT 2019	Natural Product Chemistry
5	3rd January 2019	Recent Trends In Chemistry, organised by Coochbehar Panchanan Barma University, Coochbehar, WB.	Invited Lecture
6	Feb 22, 2019	Frontiers in Chemistry-2019	Material Science
7	January 9-11, 2020	ICCHD [Int. Conference on Chemistry for Human Development]-2020	Green Chemistry
8	January 8-10,2018	ICCHD [Int. Conference on Chemistry for Human Development]-2018	Natural Product Chemistry
9	August 27, 2018	Frontiers in Chemistry-2018	Participated as Chairman of Organizing Committee
10	Sept 14. 2017	Frontiers in Chemistry-2017-2018	Lube oil additive
11	Feb.20, 2017	Frontiers in Chemistry-2017	Participated

D. Participation and contribution in National and International forum in the area of academic and Professional expertise.

Event	National / International	Numbers
Plenary lectures/Invited Talks	International National	16 48
Congress attended	National	11
Examinership etc	International National	05 43
Others(specify) : Research Projects Evaluation etc	International National	05 11
As a convenor CRSI North Bengal Local Chapter, organised National and International SEMINAR.	International National	02 05

11. No of Research Scholars successfully guided:

Name of the Program	Awarded (No)
Research Projects Leading to Ph. D	**40 (Forty) so far**.
M Phil	**02**

13. A Brief about Research Activities:

A. POST DOCTORAL RESEARCH WORK-

1. **Explorative Studies using Birch Reduction in the Synthesis of Terpenoids:**

   Place of work: Department of Organic Chemistry, IISc, Bangalore, under the supervision of (Late) **Prof. A. Srikrishna**.

   Research work carried out: Generalized an efficient method for the preparation of a series of suitably substituted bicyclic compound used as a synthon for synthesis of many sesquiterpenes.

2. **Synthesis and Evaluation of Chemical additives used in lubricating oils:**

   Place of work: R & D Division of Lubrizol Corporation, USA and at Lubrizol India Ltd, New Bombay, A joint Venture Organization of Govt of India (Ministry of Petroleum & Natural gas) with Lubrizol Corporation, USA.

   Research work carried out: Developed Viscosity modifier (this product is marketed by Lubrizol), Pour point depressant (this product is marketed by Lubrizol), detergents and dispersants as performance additives for lubricating oils.

3. **Natural Product Chemistry:**

   Research work carried out: Partial Synthesis of naturally occurring triterpenoids and transformative reactions on some Isolated Natural products, especially the fusion of heterocyclic ring on ring A of pentacyclic triterpenoids.

   Place of work:

Department of Chemistry, Raiganj College (University College), Raiganj, Uttar Dinajpur, West Bengal.

B. PRESENT AREA OF RESEARCH ACTIVITY:

1. Extensively involved in the development of new Synthetic Methodology for the synthesis of bioactive heterocyclic compounds.
2. Synthesis, Characterization and Performance Evaluation of Chemical additives used in lubricating oils for their commercialization.
3. Isolation, characterization and biological Evaluation of Natural products from the Medicinal plants available in Darjeeling hill and Terai region of West Bengal.
4. Transformative reactions on steroids and triterpenoids following Green Chemistry Protocol to synthesize a library of biologically active compounds.

COLLABORATIVE INSTITUTIONS/ORGANIZATIONS:

a) Institutions

1. Indian Institute of Petroleum (CSIR), Dehradun, India.
2. Jadavpur University, Jadavpur, Kolkata.
3. King Abdulla University, Jeddah, Saudi Arabia.
4. West Bengal State University, Barasat, W.B. India.
5. Indian Institute of Technology, Gauhati, India.

b) Organizations

1. Indian Oil Corporation Ltd. Faridabad.
2. Lubrizol India Ltd. New Bombay.
3. TCG Life sciences, Kolkata.

C. PAST RESEARCH ACTIVITIES

Mixture Properties of Polar and Associated Organic Mixtures:

Research work carried out: Mixture properties with respect to the pure components of Polar and associated mixtures of organic liquids were evaluated by the measurements of Viscosity and density of the mixtures and with the help of standard equations.

Place of work: Department of Chemistry, Raiganj College (University College), Raiganj, Uttar Dinajpur, WEST BENGAL, INDIA.

D. PER DOCTORAL

Natural Product Chemistry:

Research work carried out: Isolation and Characterization of naturally occurring triterpenoids. Partial Synthesis and transformative reactions on them using selective inorganic reagents like, NBS, SeO_2 , $LiAlH_4$, Ethylenediamine, Lead tetraacetate etc.

Place of work: Department of Chemistry, University of North Bengal, Dist. Darjeeling (WB) as a UGC Research Fellow.

Mixture Properties of Polar and Associated Organic Mixtures:
Research work carried out: Mixture properties w.r.t the pure components of Polar and associated mixtures of organic liquids were evaluated by the measurements of Viscosity and density of the mixtures and with the help of standard equations.

Place of work: Department of Chemistry, Govt Engineering College, Jalpaiguri.(WB), INDIA.

14. Honours/ Awards & Fellowships for Outstanding work

Sr no	Nature of Awards /Fellowships etc.	Elected Honorary Fellow	Awarded by	Year Of Award
1	Fellow Member	Royal Society of CHEMISTRY, London, UK.	Royal Society of CHEMISTRY, London, UK	2023
2	Research Fellow		INTI International University, Malayasia	2023
3	UGC Mid-Career Award		UGC, New Delhi, India	2019
4		Fellow member Turkish Chemical Society	Turkish Chemical Society	2004

15. Some Special Achievements Received During my Academic / Professional Career So far:

- **Two of my laboratory developed products are still now marketed by** Lubrizol India Ltd, Navi Mumbai, [A Govt. of India MNC with Lubrizol Corporation, USA,] my previous employer. We received patent out of it.

- **The New Department, "Department of Pharmaceutical Technology"** has been made to start functioning during my Headship, from the academic year 2019-2020, in our campus, and also with the necessary approvals both from **AICTE** and **PCI**, obviously with the constant support and encouragement from the office of the Hon'ble Vice - Chancellor and Registrar, NBU.
  I really feel proud to be a part of that great achievement of NBU.

- **Bharatratna, Prof C N R Rao** once, has praised our student, Manjeet Chhetri, who was working under his guidance in JNCASR, Bangaluru as, **"your student Manjeet is one of my best student I have guided so far",** when he last visited our Department. As a teacher, I consider this appreciation from Prof C N R Rao as one of the best achievements of my teaching profession.

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As a Convenor CRSI North Bengal Local Chapter could able to arrange an ***INTERNATIONAL CONFERENCE on Confluence of Chemistry & Biology: Exploring New Frontiers (online mode) and the Speaker was Professor Ada E. Yonat, from Weizmann Institute of Science , Israel (Nobel Laureate in 2009)*** on Oct 12, 2020, during the COVID-19 Period. **Title of the Lecture: Next Generation Antibiotics** *Jointly Organized by:* Department of Chemistry, University of North Bengal, Darjeeling, India JIS Institute of Advanced Studies and Research, Kolkata, JIS University. CRSI North Bengal Local Chapter *In Association with:* Department of Chemistry, CMS College, Kottayam, Kerala Department of Chemistry and Centre for Research, St. Teresa's College, Ernakulam, Kerala.	

Etc…….

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ANNEXURE- I

➢ LIST OF SOME OF THE IMPORTANT RESEARCH PULICATIONS:

Sr. No.	Title of the paper	Names of all Authors	Name of the Journal	Year, volume, page of the Published Paper
1.	Greener Synthesis of Pyrroloacridine-1(2H)-one and 1,8-Dioxodecahydroacridine Derivatives: Ascorbic Acid Mediated Organocatalytic Approach	Saptadwipa Bhattacharjee, Puja Basak and Pranab Ghosh	Tetrahedron Letters	Date of Acceptance: 25.02.2025 Ms. Ref. No.: TETL-D-25-00026R1.
2.	"Hierarchical Self-Assembly of J-Aggregated 1,2-bis (2-(benzyloxy) benzylidene) hydrazine@2β—Cyclodextrin into Left-Handed Superhelix and Its External Stimuli Responsive Unwinding"	Das, Sayannita, Karmakar, Ankana; Mandal, Suraj; Khatun, Sahiba; Chakraborty, Susama; Dutta, Lakshmi; Goswami, Tamal; Biswas, Kinkar; Biswas, Goutam; Ghosh, Pranab; Mandal, Amitava	Langmuir	Accepted for publication: Date 14.02.2025 Manuscript ID: la-2025-00445f
3.	"Organocatalysis in tetrasubstituted imidazole synthesis: A critical review of recent progress"	Saptadwipa Bhattacharjee, Dr. Puja Basak, Prof. Pranab Ghosh	Synthetic Communications	January 2025; DOI: 10.1080/00397911.2025.2451416
4.	"Ascorbic acid mediated one – pot solvent free synthesis of 2-Amino-1,3,4-oxadiazoles and 2-Amino-1,3,4-thiadiazoles via C−X (X =O, S) Bond Formation"	Saptadwipa Bhattacharjee, Dr. Puja Basak, Prof. Pranab Ghosh	ChemistrySelect	October 2024; 9(40) DOI: 10.1002/slct.202403436
5.	Influence of CuO Nanoparticles on the Tribological Performance of Karanja Oil (*Pongamia pinnata*)	Passang Tshering Lepcha, Pranab Ghosh	ChamistrySelect	First published: 27 September 2024 DOI: **https://doi.org/10.1002/slct.202403581**
6.	A Brief Overview on One Pot Multicomponent Synthesis and Biological Properties of a Class of Nitrogenous Complex Heterocyclic Compounds	Sourav Dey and Pranab Ghosh	Asian Journal of Chemical Sciences	14(5):37-67, 2024 DOI: 10.9734/ajocs/2024/v14i5323
7.	A Review on Recent One Pot Multi-Component Synthesis and Biological Properties of a Class of New Class of Chromenes, Coumarines,	Sourav Dey a, Koushik Chakraborty a and Pranab Ghosh	Asian Journal of Applied Chemistry	Volume 15, Issue 4, Page 216-249, 2024; DOI: https://doi.org/10.9734/ajacr/2024/v15i4307

	Chromeno-Pyrimidines, Pyrido-Pyrimidine and Quinazoline Heterocycles			
8.	Synthesis and BSA Binding study of the Cu(II) Complex and Applications of it to Enhance Catalytic Activity for C(Sp^2)-H Bond Functionalization and for the Synthesis of Polyhydroquinoline	Aminul Islam[a] Kakoli Malakar[b], Marappan Velusamy[b] and Pranab Ghosh[a]*	Tetrahedron	Tetrahedron, 167, 7, 134278, 2024
9.	p-Toluene Sulphonic Acid (PTSA): An Efficient Catalyst for One-Pot Three-Component Synthesis of Novel 3-Pyrazolyl-Thiazolidin-4-One Derivatives (2024-08-06)	Sharmistha Das Subhankar Paul Bijeta Mitra Gyan Pariyar, Pranab Ghosh	ChemistrySelect	Volume 9, Issue 30 August 12, 2024; e202401822 doi: https://doi.org/10.1002/slct.202401822
10.	KI mediated one-pot cascade reaction for synthesis of 1,3,4-selenadiazoles	Kumaresh Datta, Bijeta Mitra, Gyan Chandra Pariyar and Pranab Ghosh	RSC Advances	RSC Adv., 2024, 14, 15449
11.	N-9 Methylated Caffeine: An Alternate Potentially Active Pharmaceutical Ingredient to Caffeine and Its Complexation with β-CD	Suraj Mandal, Ankana Karmakar, Susama Chakraborty, Sayannita Das, Sahiba Khatun, Priyabrata Mitra, **Pranab Ghosh**, Soumen Saha, Amitava Mandal	Journal of Molecular Structure	1311(11):138355, April 2024; DOI: 10.1016/j.molstruc.2024.138355
12.	White LED light mediated green photoreduction of nitroarenes to anilines on bimetallic Ni/Ag@resin: In situ SERS monitoring and evaluation of plasmonic effect	Ankana Karmakar, Washim Hossain Suraj Mandal Sayannita Das, Sahiba Khatun, Tamal Goswami, Banita Sinha, Manas Ghosh, **Pranab Ghosh**, Amitava Mandal	Applied Catalysis A: General	Volume 675, 5 April 2024, 11962 DOI: 10.1016/j.apcata.2024.119620
13.	Humic acid: a rarely explored, robust, green catalyst for solvent-free synthesis of 4H-benzo[4,5]thiazolo[3,2-a]pyrimidine-3-carboxylate and benzo[d]thiazole.	Manishita Nandi, Bijeta Mitra, Pranab Ghosh	**Research on Chemical Intermediates** (Springer)	March 2024 50:1757–1775; https://doi.org/10.1007/s11164-024-05237-1
14.	Vitamin C as an Effective Organo-catalyst for Three and Four-Component Synthesis of 1,2,4,5-tetrasubstituted Imidazoles	Saptadwipa Bhattacharjee, Dr. Puja Basak, Sayani Roy, Kousik Saha, Ananya Basu, Prof. Pranab Ghosh	ChemistrySelect	Volume 8, Issue 37 October 6, 2023; e202383701. DOI: https://doi.org/10.1002/slct.202302477

15.	Molecular iodine catalyzed C(sp2)-H sulfenylation of biologically active enaminone compounds under mechanochemical conditions and studies on their biocidal activity including molecular docking and DFT	Aminul Islam, Prasun Choudhury, Kaushik Sarkar, Rajesh Das, Malay Bhattacharya, **Pranab Ghosh**	Molecular Diversity	2023 July 7. doi: 10.1007/s11030-023-10677-9.
16.	CoFeLDH for enhancement of catalytic activity for the formation of biologically active diaryl sulfide and propargylamine derivatives and studies on their biocidal activity including molecular docking and DFT studies for anti-diabetic activity	Aminul Islam, Rabindranath Singha, Susanta Kumar Saha, Kaushik Sarkar, Sudeshna Nandi, Tania Baishya, Ranabir Sahu, Malay Bhattacharya, Mayukh Deb and **Pranab Ghosh***	Molecular Diversity	28(3): 2024, 1597-1607. doi: 10.1007/s11030-023-10677-9
17.	Eucalyptol: An efficient, unexplored, green media for transition metal free synthesis of 2,3-dihydroquinazolin-4(1H)-one derivatives and isoxazolone derivatives	Tandra Kundu, Bijeta Mitra **& Pranab Ghosh***	Synthetic Communication	Pages 779-794 | Published online: 07 Apr 2023 To Cite this article https://doi.org/10.1080/00397911.2023.2197118
18.	Humic acid catalyzed solvent-free green protocol for synthesis of thioamide	Suvodip Mukherjee, Bijeta Mitra, Gyan Chandra Pariyar, Sandipan Pal, Mayukh Deb & Pranab Ghosh	ChemistrySelect	March 2023 DOI: 10.21203/rs.3.rs-2708761/v1
19.	β-Cyclodextrin: a green supramolecular catalyst assisted eco-friendly one-pot three-component synthesis of biologically active substituted pyrrolidine-2-one.	Subhankar Paul Sharmistha Das Bijeta Mitra Gyan Pariyar, Pranab Ghosh	RSC Advances	***RSC Adv.***, 2023,**13**, 5457-5466 DOI: 10.1039/ D2RA08054K
20.	PEG-200: A versatile green solvent assisted catalyst-free one-pot three-component synthesis of functionalised N-amino-3-cyano-2-pyridone	Sharmistha Das Subhankar Paul Bijeta Mitra Gyan Pariyar, Pranab Ghosh	Results in chemistry (Elsevier)	February 2023, 5:100871 DOI: 10.1016/j.rechem.2023.100871
21.	Polyethylene Glycol (PEG-200): An Efficient, Green and Biocompatible Reaction Medium for the Metal-Free Synthesis of Functionalized 1,4-Benzothiazines.	Aminul Islam Rabindranath Singha Pranab Ghosh	ChemistrySelect	January 2023, 8(2) DOI: 10.1002/slct.202203780

22.	Whole-Genome Shotgun (WGS) Sequence of cis-Isoprene Polymer-Degrading Nocardia sp. strain BSTN01	Biraj Sarkar, Amit Kumar Mandal, Amit Ghati, Pranab Ghosh, Sukhendu Mandal, Ahmet Kati	ASM Journals/ Microbiology Resource Announcements	14 March, 2022, Vol. 11, No. 4 DOI: https://doi.org/10.1128/mra.01175-21
23.	One-pot Three-component Solvent-free Tandem Annulations for Synthesis of Tetrazolo[1,2-*a*] pyrimidine and [1,2,4] triazolo [1,5-*a*] pyrimidine,	K. Dutta, B. Mitra, B. S. Sharma and **P. Ghosh***,	ChemistrySelect	2022, 7, e**2021**03602.
24.	Catalytic applications of graphene oxide towards the synthesis of bioactive scaffolds through the formation of carbon–carbon and carbon–heteroatom bonds	R. Singha, P. Basak and **P. Ghosh***,	Physical Sciences Reviews	2022, https://doi.org/10.1515/psr-**2021**-0096
25.	Metal-composite-catalyzed C-C coupling reactions in water,	P. Basak and **P. Ghosh***,	Physical Sciences Reviews	2022, 123-143
26.	Potential Eco-Friendly Multifunctional Lube Oil Additives: Synthesis, Characterization and Performance Evaluation,	K. Dey, **P. Ghosh***,	ChemistrySelect	2022, 6, 7604-7612.
27.	One-pot synthesis of bimetallic Ni/Ag nanosphere inside colloidal silica cavities for in situ SERS monitoring of the elementary steps of chemoselective nitroarene reduction evidenced by DFTB calculation	Ankana Karmakar, Suraj Mandal, Washim Hossain, Manas Ghosh, Susma Chakraborty, Tamal Goswami, **Pranab Ghosh** and Amitava Mandal	Journal of Molecular Structure	2022, 1274:134383 DOI: 10.1016/j.molstruc.2022.134383
28.	Thermoresponsive Reversible Host-Guest Supramolecular Nanotubular Self-Assembly of Octyl-2-acetoxybenzoate@β-CD	Susama Chakraborty Ankana Karmakar Suraj Mandal,Tamal Goswami, **Pranab Ghosh** and Amitava Mandal	Journal of Molecular Liquids	December 2022 370(8):120947 DOI: 10.1016/j.molliq.2022.120947
29.	One-pot three-component tandem annulation of 4-hydroxycoumarine with aldehyde and aromatic amines using graphene oxide as an efficient catalyst.	Singha, R., Islam, A. &**Ghosh, P.**	Scientific Reports (Nature group)	**11,** 19891 (**2021**). https://doi.org/10.1038/s41598-021-99360-3
30.	**β-Cyclodextrin: A supramolecular catalyst for metal-free approach towards the synthesis of 2-amino-4,6-diphenyl -nicotinonitriles and 2,3-**	**Bijeta Mitra, Gyan C. Pariyar, Pranab Ghosh**	**RSC Advances**	**RSC Adv., 2021, 11, 1271–1281.** ***ACCEPTED AS HOT ARTICLE FOR THE YEAR 2021-2022***

	dihydroquinazolin -4(1H) -one.			
31.	A greener and sustainable approach towards the synthesis of propargylamine using multicomponent A^3-coupling reaction:	Rabindranath Singha, D. Brahman, B. Sinha, **Pranab Ghosh**,	Asian Journal of Green Chemistry,	2021, 5, 91-110.
32.	$TiCl_3$-silica: A recyclable solid support for efficient synthesis of substituted imidazoles	R. Subba, H. R. Dasgupta, B. Saha, G. C. Pariyar, A. Tamang, **P. Ghosh**.	Asian Journal of Nanoscience and Materials	2021, 04, 31-45
33.	Convenient one-pot synthesis of 1,2,4-oxadiazoles and 2,4,6-triarylpyridines using graphene oxide (GO) as a metal-free catalyst: importance of dual catalytic activity,	P. Basak, S. Dey and **P. Ghosh.**	RSC Advances	2021,**11**, 32106-32118
34.	Green organic transformations: novelty of graphene oxide (GO) and sulfonated graphene oxide (SGO). Review Article (Mini-Review)	Puja Basak, **Pranab Ghosh**,	Current Green Chemistry,	**Volume 8 , Issue 1, 2020, 28-45** **DOI** : 10.2174/2213346107999201231125827
35.	Polyacrylate‑magnetite nanocomposite as a potential multifunctional additive for lube oil:	K. Dey, G. Karmakar, M. Upadhyay, **P. Ghosh**,	Scientific Reports (Nature group)	2020, 10, 19151
36.	A green synthetic approach towards one pot multi component synthesis of hexahydro quinoline and 9-Aryl hexahydro acridine -1,8-dione derivatives catalyzed by sulphonated rice husk	S. Dey, P. Basak, **Pranab Ghosh**,	ChemistrySelect	Volume 5, Issue 48 December 30, 2020 Pages 15209-15217
37.	One Pot Reductive Synthesis of Benzimidazole Derivatives from 2-Nitro Aniline and Aromatic Aldehydes Using $Zn/NaHSO_3$ in Water Medium:	H. R. Dasgupta, S. Mukherjee, **Pranab Ghosh**,	Progress in Chemical and Biochemical Research	2021, 4, 57-67
38.	A green synthetic approach towards one pot multi component synthesis of hexahydroquinoline and 9-Arylhexahydroacridine-1,8-dione derivatives catalyzed by sulphonated rice husk:	Sourav Dey, Puja Basak, **Pranab Ghosh**.	ChemistrySelect	2020, 5, 48, 15209-15217
39.	Sulfonated Graphene-Oxide as Metal-Free Efficient Carbocatalyst for the Synthesis of 3-	P. Basak, S. Dey, **P. Ghosh**,	ChemistrySelect	2020, 5, 626-636

	Methyl-4-(hetero) arylmethylene isoxazole-5(4*H*) -ones and Substituted Pyrazole.			
40.	Graphene Oxide Catalyzed One-pot Synthesis of Pyrimido [4,5-*b*] quinolinone-2,4-diones and their Biological Evaluation	R. Singha, P. Basak, M. Bhattacharya, P. **Ghosh**,	ChemistrySelect	2020, 5, 6514-6525
41.	Ethyl lactate: An Efficient Green Mediator for Transition Metal Free Synthesis of Symmetric and Unsymmetric Azobenzenes:	G. C. Pariyar, T. Kundu, B. Mitra, S. Mukherjee, **P. Ghosh**,	ChemistrySelect	2020, 5, 9781-9786
42.	$TiCl_3$-silica: A recyclable solid support for efficient synthesis of substituted imidazoles:	R. Subba, H. R. Dasgupta, B. Saha, G. C. Pariyar, A. Tamang, **P. Ghosh**	Asian Journal of Nanoscience and Materials	**2021, 04, 31-45**
43.	Transformative reaction on triterpenoids: action of hydrogen peroxide in presence of selenium dioxide on oxime derivative of taraxerone and antimicrobial activity of isolated compounds:	R. Singha, **P. Ghosh**,	Journal of Medicinal and Chemical Sciences.	2020, 95-102
44.	Isolation of olean-12(13), 15 (16)-diene, olean-12(13), 15(16)-dien-3β-ol and olean-15(16)-en-11α-ol from the pet-benzene extract of Psidiumguajava and their biocidal activity	R. Singha, M. G. Rasul, **P. Ghosh**.	Journal of Medicinal and Chemical Sciences	3,(2020), 118-137
45.	Synthesis of linseed oil based biodegradable homo and copolymers: role as multifunctional greener additives in lube oil:	D. Roy, S. Paul, S. Yeasmin, **P. Ghosh**,	Journal of Macromolecular Science, Part A: Pure and Applied Chemistry	September 2020; https://doi.org/10.1080/10601325.2020.1812400
46.	Organo-Cu (II) catalyst: an efficient synthesis of substituted *N*-heterocycles via double condensation / tandem oxidationcyclisation / elimination-cyclisation reactions from easily accessible precursors:	B. Saha, B. Mitra, S. Mukherjee, R. Subba, D. Brahmin, B. Sinha, **P. Ghosh**,	Rasayan Journal of Chemistry	Vol. 14 | No. 4 |2406-2412| October- December | 2021
47.	Effect of percentage of initiator used in the polymerization process on the performance of lube oil additives: A comparative study,	Sultana Yeasmin and **Pranab Ghosh,**	Journal of Macromolecular Science, Part A: Pure and Applied Chemistry	Accepted for publication, 2nd Nov.4, 2020 - Manuscript ID LMSA-2020-0224.R1,.
48.	Castor oil based eco-friendly lubricating oil additives,	Sujan Paul, Mainul Hoque and **Pranab Ghosh,**	Journal of Macromolecular Science, Part A:	Accepted for publication, 2nd Nov.4, 2020 Manuscript ID LMSA-2020-0147.R4,

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49.	Synthesis of behenyl - and isodecyl acrylate based polymers: A comparative study on their performances as multifunctional lube oil additives	Sujan Paul, Sultana Yeasmin and **Pranab Ghosh,**	Journal of Macromolecular Science, Part A: Pure and Applied Chemistry	Accepted for publication, 30th Oct, 2020. Manuscript ID LMSA-2020-0186.R1,
50.	Formulation of Extended-Release Beads of Lamotrigine Based on Alginate and Cassia fistula Seed Gum by QbD Approach,	D. Jain, A. Sodani, S. Ray, **P. Ghosh**, G. Nandi,	Current Drug Delivery	2020, 17, 422-437
51.	Polymer blend: a new approach towards flow improvement of crude oil:	**P. Ghosh**, S. Yeasmin,	Petroleum Science and Technology.	2020, 38, 177-184
52.	Amine-functionalized graphene oxide nanosheets (AFGONs): an efficient bifunctional catalyst for selective formation of 1,4-dihydropyridines, acridinediones and polyhydroquinolines:	P. Choudhury, **P. Ghosh**, B. Basu,	Molecular Diversity .	2020, 24, 283–294
53.	Castor Oil and Acrylate based Copolymer as Green Additive for Lubricating Oil:	M. Hoque, D. Roy, **P. Ghosh**,	Journal of Scientific & Industrial Research	2020, 79, 537-540
54.	A combined spectroscopic and molecular dynamic analysis of the inclusion behaviour of l-serine and β-cyclodextrin	S. Chakraborty, A. Karmakar, T. Goswami, **P. Ghosh**, A. Mandal,	Journal of Molecular Liquids	Vol. 321, January, 2021, 114447.
55.	Inclusion complex of β-cyclodextrin with tetrabutylammonium bromide: Synthesis, characterization and interaction with calf thymus DNA.	S. Chakraborty, **P. Ghosh**, B. Basu, A. Mandal,	Journal of Molecular Liquids	2019, 293, 111525
56.	Ascorbic Acid as an Efficient Organ catalyst for the Synthesis of 2-Substituted-2,3-dihydroquinazolin-4(1*H*)-one and 2-Substituted Quinazolin-4(3*H*)-one in Water	Gyan Chandra Pariyar, Bijeta Mitra, Suvodip Mukherjee, Pranab Ghosh	ChemistrySelect	2020, 5(1), 104- 108 **https://doi.org/10.1002/slct.201903937**
57.	Biodegradable vegetable oil polymer as a multifunctional lubricating oil additive	Sujit Talukdar & Pranab Ghosh	Journal of Macromolecular Science, Part A, Pure and Applied Chemistry	Nov. 2019. DOI: 10.1080/10601325.2019.1691449

58. **59.**	Polymer blend: A new approach towards flow improvement of crude oil	Sultana Yeasmin &**Pranab Ghosh**	Petroleum Science and Technology (Pet. Sci. Tech.)	Vol.38, no. 3 (2020): 177-184.
60.	A novel approachtowards chemoselective reduction of nitro to amine	Hridoydip Ranjan Dasgupta, Suvodip Mukherjee, **Pranab Ghosh**	Tetrahedron Letters	2019, 60, 151028.
61.	Glycerol: A Benign Solvent-Assisted Metal-Free One-Pot Multi-Component Synthesis of 4 H -Thiopyran and Thioamides from Easily Accessible Precursors	Bijeta Mitra, Gyan Chandra Pariyar, **Pranab Ghosh**	ChemistrySelect	2019, 4(19), 5476-5483 DOI: 10.1002/slct.201900982
62.	Synergistic effect of liquid crystals on the additive performance of poly acrylate in lubricating oil	Mahua Upadhyay, Malay Kumar Das, R. Dabrowski, **Pranab Ghosh**	Asian Jr. Nano Sc & Material,	2019, *2*, 257
63.	Amine-functionalized graphene oxide nanosheets (AFGONs): an efficient bifunctional catalyst for selective formation of 1,4-dihydropyridines, acridinediones and polyhydroquinolines	Prasun Choudhury, Pranab Ghosh, Basudeb Basu	Molecular Diversity	2020, 24, 283-294 DOI: 10.1007/s11030-019-09949-0
64.	New 1,2-dithioether based 2Dcopper(I) coordination polymer: from synthesis to catalytic application in A 3-coupling reaction,	Sankar Saha, Kinkar Biswas, **Pranab Ghosh** and Basudeb Basu.	Journal of Coordination Chemistry	2019, VOL. 72, NO. 11, 1810–1819 https://doi.org/10.1080/00958972.2019.1627339,
65.	2-Iodo benzoic acid: an unconventional precursor for the one pot multi-component synthesis of Quinoxaline using organo Cu (II) catalyst	Bittu Saha, Bijeta Mitra, Dhiraj Brahmin, Biswajit Sinha, **Pranab Ghosh.**	Tetrahedron Letter (Tett. Lett.)	2018, 59, 3657-3663.
66.	Performance evaluation of polymeric blend of vinyl acetate and acrylate-based copolymers in lubricating oil	Sultana Yeasmin and **Pranab Ghosh**	Pet. Sc. Tech.	Accepted for Publication, Jan, 2018 Manuscript ID LPET-2018-1761 Article DOI10.1080/10916466.2019.1566260
67.	Synthesis and performance evaluation of vegetable oil polymer as a multifunctional lube oil additive.	Sujit Talukdar, Mahua Upadhyay and **Pranab Ghosh**	Petroleum Science and Technology (Pet. Sci. Tech.)	Accepted Sept. 14, 2018 MS ID LPET-2018-1208(R1).
68.	$TiCl_3$ catalyzed one-pot protocol for the conversion of aldehydes into 5-substituted 1H-tetrazole	Rakesh Ranjan Chakraborty, **Pranab Ghosh**	Tet. Lett.	2018, 59(40), 3616-3619
69.	Poly (methyl methacrylate)-graphene	Puja Basak, **Pranab Ghosh**	Synth. Commn.	2018, 48(19), 2584-2599.

	oxide supported palladium catalyst: A ligand free protocol for Suzuki and Heck coupling reaction in water medium			
70.	Silica gel an efficient catalyst for one –pot synthesis of pyrazine from ethylenediamine and 1,2 –diketones and their analogs	Rakesh Ranjan Chakraborty, Rabindranath Singha and **Pranab Ghosh**	Ind. Jr. Het. Chem.	2018, 28(3), 1-7
71.	An ionic liquid as a potential multifunctional lubricating oil additive	Sujit Talukdar, Pranab Ghosh	Pet. Sc. Tech.	2018, 36(22),1920-27.
72.	Isolation of olean-12(13), 15(16)-dien-3β-ol and olean-15(16)-en-11α-ol from the pet-benzene extract of Psidium guajava and their biocidal activity	Rabindranath Singha, Golam Rosul, Pranab Ghosh	J. Med. Chem. Sci.	Vol. 3(2020) 118-137
73.	Naturally derived green bio-additives	Debasish Kumar Saha &**Pranab Ghosh**	Journal of Macromolecular Science, Part A Pure and Applied Chemistry ,2018	2018, 55(4), 384-392. DOI:10.1080/10601325.2018.1444419
74.	One pot route to nitriles from aldehyde and hydroxylamine hydrochloride on silica-gel.	Rakesh Ranjan Chakraborty and **Pranab Ghosh**	Asian Journal of Green Chemistry	2018, 2, 330-337.
75.	Friedelane triterpenoids: transformations toward A-ring modifications including 2-*homo*derivatives	Antara Sarkar, Jayanta Das and **Pranab Ghosh**	New Journal of Chemistry (RSC Publications)	2018, 42, 6673-88. DOI: 10.1039/C8NJ00009C
76.	One pot three-component synthesis of 5-substituted 1H-tetrazole from aldehyde	Bijeta Mitra, Suvodip Mukherjee, Gyan Chandra Pariyar, **Pranab Ghosh.**	Tetrahedron Letters.	2018, 59, 1385–1389
77.	Naturally derived green bio-additives	Debasish Kumar Saha and Pranab Ghosh.	Journal of Macromolecular Science: Part A Pure and Applied Chemistry	5(4), 2018, 384-392
78.	Dodecyl methacrylate – behenyl acrylate copolymers as potential multifunctional additive for lubricating oil.	Mahua Upadhyay, Debasish Kumar Saha and **Pranab Ghosh.**	Journal of Scientific and Industrial Research.	**Vol.77, Nov. 2018. Page 652-656**
79.	Graphene oxide (GO) catalyzed transamidation of aliphatic amides: An efficient metal-free procedure	Suchandra Bhattacharya, **Pranab Ghosh**, Basudeb Basu	Tetrahedron Letters	2018, 59, 899–903

80.	Almond oil as potential biodegradable lube oil additive: A green alternative	Debasish Kumar Saha and **Pranab Ghosh**	Journal of Polymers and the Environment.	2018, 26, 2392-2400. DOI:10.1007/s10924-017-1135-x
81.	Acrylate – α – pinene copolymer as biodegradable multifunctional additives for lube oil.	Mahua Upadhyay, Koushik Dey and **Pranab Ghosh**	Journal of Scientific and Industrial Research.	2017, 76, 303.
82.	p-TsOH-Catalyzed one-pot transformation of di- and trihydroxy steroids towards diverse A/B-ring oxo functionalization	Antara Sarkar, Jayanta Das and Pranab Ghosh	New Journal of Chemistry (RSC Publications)	2017, 41, 9051-60. DOI:10.1039/c7nj01878a
83.	Dodecyl methacrylate - olive oil copolymers as potential biodegradable pour point depressant for lubricating oil	Debasish Kumar Saha, Mahua Upadhyay and Pranab Ghosh	Petroleum Science and Technology	2017, 4, 1-7
84.	β-Pinene – acrylate copolymer as a potential biodegradable multifunctional additive for lube oil.	Mahua Upadhyay, Sujit Talukdar & Pranab Ghosh	Petroleum Science and Technology	**2017,** *35* (21), 2051-2058.
85.	Castor oil as potential multifunctional additive in the formulation of eco-friendly lubricant.	Pranab Ghosh, Mainul Hoque & Gobinda Karmakar.	Polymer Bulletin	2018, 75(2), 501-514. DOI: 10.1007/s00289-017-2047-6
86.	Effect of the ortho-hydroxy group of salicylaldehyde in the A^3 coupling reaction: A metal-catalyst-free synthesis of propargylamine	Sujit Ghosh, Kinkar Biswas, Suchandra Bhattacharya, Pranab Ghosh and Basudeb Basu	Beilstein J. Org. Chem.	2017, 13, 552–557. DOI:10.3762/bjoc.13.53
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Detail of Patents:

Sr no	Patent title	Name of applicants	Patent No.	Award Date	Agency country	Status
1	A Method of Manufacture of Polyalkylacrylate Polymer	**P. Ghosh**, A.V. Pantar, N.M. Desai, N.C. Joshi, A.S. Sarma & M.G. Banerjee	2106	7 June, 2003, page 2106	India	Patented
2	Liquid crystal blended octyl acrylate based biodegradable lubricant additives	Sayani Das, Tanuja Singh, Manishita Nandi, Pranab Ghosh, **Susanta Sinha Roy**	Indian Patent Appl. No. 202411044656. Date of filing: 10.06.2024	-	INDIA	Filed

Books /Chapters/General articles etc.:

Sr no	Title	Author's Name	Publisher	Year of publication
1	Book chapter; Chapter 10: Sustainable Lubricant Formulations from Natural Oils: A Short Review"	Brajendra K. Sharma ;Gobinda Karmakar ;Raj Shah, Pranab Ghosh,	GREEN CHEMISTRY SERIES: Green Chemistry and Green Materials from Plant Oils and Natural Acids;	**Volume:** 83; pp 170-193; Dec. 2023; **DOI:** https://doi.org/10.1

	Volume: 83; pp 170-193; Dec. 2023; DOI:https://doi.org/10.1039/ BK9781837671595- 00170**;**	Majher I. Sarker ; Sevim Z. Erhan;	Edited by Zengshe Liu;; George Kraus	039/ BK9781837671595 - 00170**;**
2	Microwave-assisted C-C and C-Heteroatom Bond Formations in an Aqueous Medium Current Microwave Chemistry ISSN (Print): 2213-3356 ISSN (Online): 2213-3364	Bijeta Mitra, and **Pranab Ghosh**	Bentham Science	Volume 9, Issues 3, 2022
3	Enzyme-catalyzed synthesis of bioactive heterocycles	Gyan Pariyar, **Pranab Ghosh**.	In book: Organocatalysis, A Green Tool for Sustainable Developments	June 2022 DOI: 10.1515/9783 110732542-007
4	Innovative Uses of Agricultural Products and Byproducts Chapter1 Chemicals from Vegetable Oils, Fatty Derivatives, and Plant Biomass pp 1-31	G. Karmakar, **P. Ghosh**, K. Kohli, B. K. Sharma, S. Z. Erhan	ACS Symposium Series Vol. 1347 **ISBN13:** 97808412371 55**eISBN:** 9780841237 117	**2022,** **DOI:** 10.1021/bk-2020-1347.ch001
5	Copper in N-Heterocyclic Chemistry, Chapter 6: Copper catalysis for Quinoxaline and Pyrazine.	B. Mitra, **P. Ghosh**.	Elsevier	2020, 221-248
6	Copper in N-Heterocyclic Chemistry, Chapter 2: Copper catalysis for Imidazoles and Pyrazoles.	G. C. Pariyar, **P. Ghosh**.	Elsevier	2020, 49-71.
7	A Chapter titled **"Environmentally Benign Organic solvent: A Green Approach"** *in a Book titled,"Green Organic Reaction"***.**	Bijeta Mitra, Gyan Chandra Pariyar and **Pranab Ghosh**	Springer	**2021**
8	A Chapter titled "**Green Organic Catalysis"** *in a Book titled, "Green Organic Reaction"***.**	Puja Basak and **Pranab Ghosh**	Springer	**2021**
9	A Chapter titled "**Chemically Modifying Vegetable Oils to Prepare Green Lubricants**", in a Book titled *"*Environmentally Friendly and Biobased Lubricants*"* (**Editors: Prof. B. K Sharma and Girma Biresawr**), Print Book ISBN: 9781482232028, Cat # K22834. August 17, 2016	G Karmakar and **P Ghosh**	CRC Press. Lubricants 2017,5(4),44; doi:10.3390/ lubricants5040044 www.mdpi.com/journa l/lubricants2	**2017**

10	A Chapter titled *"Recent* Approaches toward Solid Phase Synthesis of β–Lactams*", in a Book titled* " Topics in Heterocyclic Chemistrys" 2010, *22*, 261–311, ISBN: 978–3–642–12844	B. Mandal, **P. Ghosh** and B. Basu	Springer	**2010**
11	A Chapter titled 'Effect of viscosity modifier on viscometric and wear performance of lubricants', A.V. Pantar & P.Ghosh, in a Book titled 'Advances in Industrial Tribology'	A.V. Pantar & P. Ghosh,	Tata McGraw – Hill, New Delhi,	1998

ANNEXURE- II

➢ ONGOING / COMPLETED RESEARCH PROJECTS:

A. ONGOING RESEARCH PROJECTS

Sr No	Project Title	Duration		Funding Agency	Quantum of Funds Sanctioned in lakhs	Name of Principal Investigator (PI)	Name of Co-investigator (provide name if any; else type "NONE")
		From	To				
1	Eco-benign approach towards C-Hetero atom bond formation using organo catalyst and Carbon based functionalized catalyst	02.04.2024	01.04.2027	DST	27.0	Pranab Ghosh	None
2	Development of Greener reaction methodology for C-hetero bond formation	2022	2025	CSIR	26.0	Pranab Ghosh	None
3	Innovative Approaches Towards the synthesis of biologically active C-Hetero bond	2022	2027	State Fellowship	12.0	Pranab Ghosh	G .C Pariyar
4	"Visible light mediated C-H functionalisation of organic	2024	2027	DST WISE	34.0	Pranab Ghosh	None

	compounds with group 16 elements (S, Se) and study on their biological activity"						

B. COMPLETED RESEARCH PROJECTS

Sr No	Project Title	Duration		Funding Agency	Quantum of Funds Sanctioned in lakhs	Name of Principal Investigator (PI)	Name of Co-investigator (provide name if any; else type "NONE")
		From	To				
1	Synthesis, characterization and performance evaluation of pour point depression (PPD) for lubricating oil	2nd August 2021	1st August 2024	CSIR	39.0	Pranab Ghosh	None
2	Transformative reactions of carbocyclic compounds	2018	2023	UGC	25.0 (approx.)	Pranab Ghosh	NONE
3	Explorative studies on benign synthesis of heterocyclic compounds	2018	2023	CSIR	25.0 (approx.)	Pranab Ghosh	NONE
4	Iron or Copper nano particles catalysed C –N and C-O cross coupling reaction	2017	2022	UGC (RGNF)	20.0 (approx.)	PRANAB GHOSH	NONE
5	Investigation of Cu nano particle catalysed C-N, and C-O Coupling reaction	2017	2022	CSIR	20.0 (approx.)	PRANAB GHOSH	NONE
6	Chemically modified grapheme material: Green	2016	2021	CSIR	20.0 (approx.)	PRANAB GHOSH	NONE

	catalytic transformation on natural product						
7	Isolation, characterization and biocidal activity of pentacyclic triterpenoids.	2015	2018	UGC MRP	9,33,600	PRANAB GHOSH	NONE
8	Interfacial, kinetic and mechanistic studies on dendrimer-liposome interactions.	2012	2015	CSIR MRP	16.0 (approx.)	PRANAB GHOSH (CO PI)	Principal Investigator: Dr. A. K. Panda (PI)
9	Transformative reactions involving C-C and C-Hetero bond formations.	2014	2019	UGC	17.3 (approx.)	PRANAB GHOSH	NONE
10	Synthesis and characterization of polymer additives.	2014	2016	UGC, FDP FELLOWSHIP	12.0 (approx.)	PRANAB GHOSH	NONE
11	Polymeric additives for lubricating oil.	2011	2016	DST-INSPIRE	20.0 (approx.)	PRANAB GHOSH	NONE
12	Transformative reactions on carbocyclic compounds	2010	2015	CSIR	11.3 (approx.)	PRANAB GHOSH	NONE
13	Studies on the reactions of C-hetero bond formation	2009	2014	CSIR	11.3 (approx.)	PRANAB GHOSH	NONE
14	Synthesis and biological evaluation of steroids and pentacyclic triterpenoids	2008	2013	UGC	8.3 (approx.)	PRANAB GHOSH	NONE
15	Transformative reactions of terpenoids and studies on their biological activity	2008	2013	UGC	8.3 (approx.)	PRANAB GHOSH	NONE