

Dr. Biplab Banerjee

UGC-Assistant Professor

Department of Chemistry

School of Basic & Applied Sciences

Central University of Punjab

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Education :

Degree/ Certificate	University /Institute	Year	Subject/ Specialization
Ph.D.	Indian Association for the Cultivation of Science, Jadavpur, Kolkata	2006	Organic Chemistry
M.Sc.	University of Calcutta	2000	Chemistry
B.Sc.	University of Calcutta	1998	Chemistry

Experience :

Institute	Position	Period
Central University of Punjab, Bathinda	UGC-Assistant Professor	2017-Present
Nanyang Technological University, Singapore. Worked with Professor Chuan-Fa Liu in Peptide and Protein Chemistry to develop Biopharmaceuticals.	Research Fellow, Postdoctoral	2014-2017
Albany Molecular Research, Singapore & Hyderabad. Worked in Drug Discovery and Development	Senior Research Scientist	2012-2014
Purdue University, USA. Worked with Professor Mark Cushman in the areas of anticancer and antibiotic drug development	Postdoctoral Research Associate	2009-2012
Brigham Young University, USA. Worked with Professor Steven L Castle in the area of Total Synthesis of Complex Natural Products	Postdoctoral Research Associate	2007-2009
University of Nevada, Las Vegas, USA	Postdoctoral Research Associate	2007-2007

Teaching Assignments :

- CHM 510 : Organic Chemistry I
- CHM 522 : Organic Chemistry II
- CHM 574 : Advance Organic Synthesis
- CHM 506 : Fundamental Biology
- CAC 558 : Pharmaceutical Products
- CAC 575 : Dyes & Pigments

Professional Recognition /Awards/Fellowships :

- Received Graduate Aptitude Test Fellowship in Engineering (**GATE 2000**) conducted by Indian Institute of Technology (IIT).
- Received Senior and Junior Research Fellowship (**CSIR-NET**) from Council of Scientific and Industrial Research (**CSIR**), New Delhi, Govt. of India for doctoral research (**2001-2006**).
- Received best presenter award in an international conference "*Organic chemistry : Today and Tomorrow*," January 2006, Department of organic chemistry, Indian Institute of Science, Bangalore, India.
- Received Best Teacher Award from Central University of Punjab, Bathinda in 2019.

Research Project Ongoing :

- UGC Start-Up grant of amount Rs. 10.0 lakhs
- CUPB Internal Funding (RSM) of amount Rs 3.0 lakhs
- DST-SERB Core Research Grant of amount 38 lakh

Citations of Research Publications :

My research publications have been cited 482 times with h-index of 13 and i10-index of 14 (Source: Google Scholar, January 27, 2021). Total Impact Factor = 97

Publications :

1. "Rational design of marigold-shaped composite $\text{Ni}_3\text{V}_2\text{O}_8$ flowers: a promising catalyst for the oxygen evolution reaction" R. Biswas, A. Kundu, M. Saha, V. Kaur, B. Banerjee, R. S. Dhayal, R. Patil, Y. Ma, T. Sen and K. K. Haldar, *New J. Chem.*, 2020, *44*, 12256. (Impact Factor-3.28)

2. "Fabrication of mesoporous titanium dioxide using azadirachta indica leaves extract towards visible-light-driven photocatalytic dye degradation" L. Dash, R. Biswas, R. Ghosh, V. Kaur, B. Banerjee, T. Sen, R. Patil, Y. Ma and K. K. Haldar, *Journal of Photochemistry and Photobiology A: Chemistry*, 2020, 400, 112682. (Impact Factor-3.30)
3. "Novel Green Approach for Fabrication of Ag₂CrO₄/TiO₂/Au/r-GO Hybrid Biofilm for Visible Light-Driven Photocatalytic Performance" R. Biswas, S. Mete, M. Mandal, B. Banerjee, H. Singh, I. Ahmed and K. K. Haldar, *J. Phys. Chem. C*, 2020, 124, 5, 3373. (Impact Factor : 4.30)
4. "Zn(II) Di-isobutyldithiocarbamate Complex Enabled Efficient Synthesis of Au/ZnS Nanocomposite Core-shell in One Pot" R. Biswas, H. Singh, B. Banerjee, and K. K. Haldar, *ChemistrySelect*, 2019, 4, 4003. (Impact Factor : 1.71)
5. "Thiazolidin-5-imine Formation as a Catalyst-Free Bioorthogonal Reaction for Protein and Live Cell Labeling" X. Bi, J. Yin, C. Rao, S. Balamkundu, B. Banerjee, D. Zhang, D. Zhang, P. C. Dedon and C-F. Liu, *Org. Lett.*, 2018, 20, 7790. (Impact Factor : 6.55)
6. "5-Methylisoxazole-3-carboxamide-Directed Palladium-Catalyzed γ -C(sp³)-H Acetoxylation and Application to the Synthesis of γ -Mercapto Amino Acids for Native Chemical Ligation" K. K. Pasunooti, R. Yang, B. Banerjee, T. Yap and C-F. Liu, *Org. Lett.*, 2016, 18, 2696. (Impact Factor : 6.55)
7. "Auxiliary-Directed Pd-Catalyzed γ -C(sp³)-H Bond Activation of α -Aminobutanoic Acid Derivatives" K. K. Pasunooti, B. Banerjee, T. Yap, Y. Jiang and C-F. Liu, *Org. Lett.*, 2015, 17, 6094. (Impact Factor : 6.55)
8. "Synthesis of 3-(3-aryl-pyrrolidin-1-yl)-5-aryl-1,2,4-triazines that have antibacterial activity and also inhibit inorganic pyrophosphatase" W. Lv, B. Banerjee, K. Molland, M. Seleem, A. Ghafoor, B. Wan, A. D. Mesecar and M. Cushman, *Bioorganic & Medicinal Chemistry*, 2014, 22, 406. (Impact Factor : 2.80)
9. "Efficient Total Synthesis of Ammosamide B" P. V. N. Reddy, B. Banerjee and M. Cushman, *Org. Lett.*, 2010, 12, 3112. (Impact Factor : 6.55)
10. "Stereoselective Additions of Thiyl Radicals to Terminal Ynamides" B. Banerjee, D. Litvinov, J. Kang, J. D. Bettale and S. L. Castle, *Org. Lett.*, 2010, 12, 2650. (Impact Factor : 6.55)

11. "Total Synthesis of the Antimitotic Bicyclic Peptide Celogentin C" B. Ma, B. Banerjee, D. Litvinov, L. He and S. L. Castle, *J. Am. Chem. Soc.*, 2010, *132*, 1159. (Impact Factor : 14.69)
12. "Total Synthesis of Celogentin C" B. Ma, D. Litvinov, L. He, B. Banerjee and S. L. Castle, *Angew. Chem. Int. Ed.*, 2009, *48*, 6104. (Impact Factor : 12.25)
13. "Second-Generation DBFOX Ligands for the Synthesis of β -Substituted α -Amino Acids via Enantioselective Radical Conjugate Additions" B. Banerjee, S. G. Capps, J. Kang, J. W. Robinson and S. L. Castle, *J. Org. Chem.*, 2008, *73*, 8973. (Impact Factor : 4.74)
14. "Titanocene(III) chloride mediated radical-induced one-pot synthesis of α -methylene- γ -butyrolactones" M. Paira, B. Banerjee, S. Jana, S. K. Mandal and S. C. Roy, *Tetrahedron Letters*, 2007, *48*, 3205. (Impact Factor : 2.25)
15. "Efficient synthesis of bis(indolyl) methanes in aqueous medium catalyzed by molybdenyl acetylacetonate " B. Banerjee, S. K. Mandal and S. C. Roy, *Ind. J. Chem*, 2007, *46B*, 669. (Impact Factor : 0.50)
16. "Stereoselective Synthesis of Polysubstituted Tetrahydropyrans by Radical Cyclization of Epoxides using a Transition-Metal Radical Source" B. Banerjee and S. C. Roy, *Eur. J. Org. Chem.*, 2006, 489. (Impact Factor : 3.02)
17. "Cerium(IV) Ammonium Nitrate-catalyzed Synthesis of β -Keto Enol Ethers from Cyclic β -Diketones and Their Deprotection " B. Banerjee, S. K. Mandal and S. C. Roy, *Chemistry Letters*, 2006, *35*, 16. (Impact Factor : 1.55)
18. "Concise Enantioselective Synthesis of Furan Lignans (-)-Dihydrosesamin and (-)-Acuminatin and Furofuran Lignans (-)-Sesamin and (-)-Methyl Piperitol by Radical Cyclization of Epoxides" B. Banerjee and S. C. Roy, *Synthesis*, 2005, 2913. (Impact Factor : 2.86)
19. "A Novel and Efficient Ceric Ammonium Nitrate Catalyzed Oxidative Nuclear Chlorination of Activated Aromatic Compounds by Acetyl Chloride" S. C. Roy, K. K. Rana, C. Guin and B. Banerjee, *Synlett*, 2003, 221. (Impact Factor : 2.41)

20. "Mild and efficient iodine catalyzed protection of carbonyl compounds as oxathiolane derivatives" K. K. Rana, C. Guin, B. Banerjee and S. C. Roy, *J. Ind. Chem. Soc.*, 2003, 80, 1005. (Impact Factor : 0.14)

21. "Ceric ammonium nitrate catalyzed mild and efficient α -chlorination of ketones by acetyl chloride" S. C. Roy, K. K. Rana, C. Guin and B. Banerjee, *ARKIVOC*, 2003, (ix), 34. (Dedicated to Prof. (Mrs.) A. Chatterjee on her 85th birthday) (Impact Factor : 1.04)

22. "A Mild and Efficient Method for the Chemoselective Synthesis of Acylals from Aldehydes and their Deprotections catalysed by Ceric Ammonium Nitrate" S. C. Roy and B. Banerjee, *Synlett*, 2002, 1677. (Impact Factor : 2.41)

Conference attended and Research Presentation :

- B Banerjee and S. C. Roy "Enantioselective synthesis of furano lignans (-)-dihydroresamin and furofurano lignans (-)-Sesamin by radical cyclization of epoxides using a transition metal radical source" symposium on modern trends in organic chemistry, April 2005, Indian Association for the Cultivation of Science, Kolkata, India. (Poster)
- B Banerjee and S. C. Roy "Stereoselective synthesis of polysubstituted tetrahydropyrans by radical cyclization of epoxides using Ti(III) chloride" international conference "*Organic chemistry : Today and Tomorrow*," January 2006, Department of organic chemistry, Indian Institute of Science, Bangalore, India. (Poster and short talk)
- B. Banerjee and Steven L. Castle "Progress towards the total synthesis of Kapakahine E" *Spring Research Conference*, Brigham Young University, USA, March 2008. (Talk)
- JOC Editors Meeting at Park City, Utah, USA 2008
- Delivered talk "Exploring New Methods : From Bioactive Natural Products to Small Molecule Therapeutics" IIT Kharagpur February 2012
- Delivered talk "Exploring New Methods : From Bioactive Natural Products to Small Molecule Therapeutics" Central Drug Research Institute (CDRI), Lucknow, India March, 2012.
- Delivered talk "Exploring New Methods : From Bioactive Natural Products to Small Molecule Therapeutics" Indian Institute of Chemical Biology, Kolkata, March, 2012.

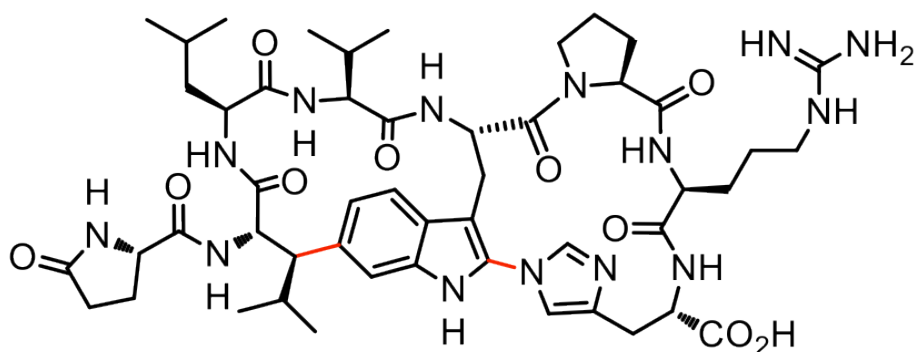
- 7th International Peptide Symposium(IPS), Matrix at Biopolis, Singapore, December 2015
- 2nd Peptides and Proteins Symposium Singapore (P2S2), Nanyang Technological University, Singapore, December 2016
- Medicinal Chemistry Strategy Meeting APAC, October 2016, Shangri-La Hotel, Singapore

Area specializations/Research Interest :

Synthetic Organic Chemistry, Medicinal Chemistry and Peptide Chemistry

- Total synthesis of biologically important natural products and development of useful synthetic methodologies
- Asymmetric synthesis and photocatalytic reactions
- Transition metal catalysis, nanocatalysis and C-H activation
- Structure based drug design approach in medicinal chemistry to develop antibiotic and anticancer drugs
- Peptide and protein chemistry and bioorthogonal reaction development

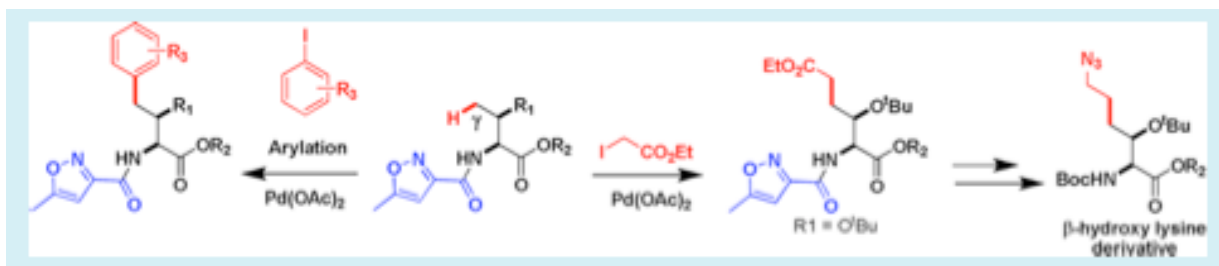
Total Synthesis of the Antimitotic Bicyclic Peptide Celogentin C



Celogentin C

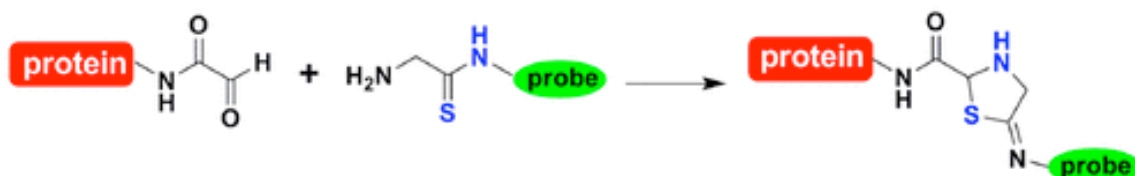
J. Am. Chem. Soc., 2010, 132, 1159
Angew. Chem. Int. Ed., 2009, 48, 6104

C-H Activation : Auxiliary-Directed Pd-Catalyzed γ -C(sp³)-H Bond Activation of α -Aminobutanoic Acid Derivatives



Org. Lett., 2015, 17, 6094

Thiazolidin-5-imine Formation as a Catalyst-Free Bioorthogonal Reaction for Protein and Live Cell Labeling



Org. Lett., 2018, 20, 7790

Student Supervision: Ph.D: 1 (ongoing), M.Sc: 12 (completed), 6 (ongoing)

Ph.D. and Postdoctoral Position is open in synthetic organic and medicinal chemistry. Interested candidates are requested to submit a detailed CV to Dr. Biplob Banerjee, via email: biplab.banerjee@cup.edu.in or biplabban@gmail.com