



Dr. Amit Kumar Mandal

Assistant Professor of Sericulture
& Sports Officer (Offg.)

Academic Qualifications:

1. B. Sc. (Hons.) in Biotechnology, 2005, Chaudhary Charan Singh University, Meerut (U.P), India.
2. M.Sc. in Microbiology, 2007, University of North Bengal, Darjeeling, West Bengal, India.
3. Ph.D. in Biotechnology, 2017, University of North Bengal, Darjeeling, West Bengal, India.

Contact Address:

Group leader: Chemical Biology Laboratory

Department of Sericulture

Raiganj University,

Dist-Uttar Dinajpur,

State-West Bengal-733134, India

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Research Interest:

In era of research cuts and at the cross roads of Biology with Chemistry and Physics, my group is especially devoted to:

- Generate new and emerging nanoparticle-based antimicrobials in the field of antimicrobial chemotherapy.
- Genome wide survey for host response of silkworm, *Bombyx mori*, during pathogenic bacterial infection.

- Structural elucidation of Exopolysaccharide produced by MDR bacteria.
- Drug-macromolecules interaction.
- Silk-fibroin based nanomaterials for drug delivery.
- Biosensors.

Specialization: Microbiology & Structure Biology

Fellowships:

1. Junior Research Fellowship, by the Department of Biotechnology, University of North Bengal, India.
2. Senior Research fellowship, by the Department of Biotechnology, University of North Bengal, India.

Award (s) and Honour(s):

1. CSIR-UGC-NET, June 2011 (**AIR-50**).
2. Graduate Aptitude Test for Engineering (GATE), 2007 by MHRD.
3. Awarded as second best innovative research in Science, Literature and Culture, organized by VURSA, Vidyasagar University, 24th Jan 2017.
4. Young Scientist of the Year-2017, NESAI, New Delhi.

Teaching Experience:

1. Assistant Professor (02.02.2017 to till date) in the Department of Sericulture, Raiganj University, Raiganj, West Bengal, India.
2. Assistant Professor (24.02.2014 to 01.02.2017) in the Department of Microbiology, under UGC-Innovative Programme, Vidyasagar University, Midnapore, West Bengal, India.
3. As a Guest teacher, in the Department of Bio-Medical Laboratory Science & Management (for the academic year 2014-2015 & 2015-2016), Vidyasagar University, Midnapore, West Bengal, India.

Research Guiding Experience:

Ph.D. Scholars: 01

Post-Doctoral – Research Associate:

<i>Completed Research Projects:</i>
<p><i>Previous & Present Employment:</i></p> <ol style="list-style-type: none"> 1. As an Assistant Professor (24.02.2014 to 01.02.2017) in the Department of Microbiology, Vidyasagar University, Midnapore, West Bengal, India under UGC-Innovative Programme. 2. As an Assistant Professor (02.02.2017 to till date) in the Department of Sericulture, Raiganj University, Raiganj, West Bengal, India.
<p><i>Administrative Experience:</i></p> <ol style="list-style-type: none"> 1. As a Co-ordinator (Departmental), for UGC-Merge Scheme Programme, Department of Microbiology, Vidyasagar University (Feb 2014 - Feb 2017). 2. Associated with the P.G. board of studies (as an external member), Department of Microbiology, Vidyasagar University. 3. Associated with the U.G. board of Studies Microbiology (Hons.) (as an external member), Sidho-Kanho-Birsha-University. 4. Associated with the M. Phil board of studies (as an external member), Vidyasagar University. 5. Associated with both U.G and P.G. board of studies as an internal member, Department of Sericulture, Raiganj University. 6. As an internal member of Ph.D. committee, Department of Sericulture, Raiganj University. 7. As a Sports Officer (Offg.), Raiganj University from 27.06.2017 to till date. 8. As a member of Student Welfare Board from 28.06.2017 to till date. 9. As a member in the Animal Ethical Committee-RGU from 15.12.2017 to till date. 10. As a member in the Bio-Safety Committee-RGU from 15.12.2017 to till date.
<p><i>Publications:</i> 33</p> <p>Books: 03</p> <p>Research Papers: 28</p> <p>Patents: 02</p> <p>Technical Report:</p> <p>Advisory Editor:</p>

Special Lectures: 03

Keynote Addresses: 01

Country Visited:

Editorial Board Member:

1. Frontiers in Microbiology Journal, (Section: Antimicrobial agents and Chemotherapy)

Reviewer of the following Books and Journals:

Journals:

Frontiers in Microbiology, Applied Biochemistry and Biotechnology, Biotechnology Reports, Carbohydrate Polymers, International Journal of Biological macromolecules, 3-Biotech

Membership(s) of the Society:

1. Life member of the "Indian Science Congress Association"
2. Life member of the "National Environmental Science Academy"

List of publications:

(Cumulative Impact till June 2017 = 70.704; Average impact: 2.525)

2017

28. "Arjunolic acid improves the serum level of vitamin B12 and folate in the process of the attenuation of arsenic induced uterine oxidative stress". Moulima Maity, Hasina Parveen, Moumita Dash, Suryashis Jana, Shamima Khatun, Arindam Dey, **Amit K. Mandal**, Sandip Chattopadhyay. **Biol Trace Elem Res. 2017** (Article in press) (**Springer, I.F. 2.399**)
27. "Study of the interaction of human serum albumin with *Alstonia scholaris* leaf extract-mediated silver nanoparticles having bactericidal property". Anukul Maji, Maidul Beg, **Amit K. Mandal**, Somnath Das, Pradeep K. Jha, Maidul Hossain. **Process Biochem. 2017** (Article in press) (**Elsevier, I.F. 2.529**).
26. "Spectroscopic interaction study of human serum albumin and human haemoglobin with *Mersilea quadrifolia* leaves extract mediated silver nanoparticles having antibacterial and anticancer activity". Anukul Maji, Maidul Beg, Amit K. Mandal, Somnath Das, Pradeep K. Jha, Anoop Kumar, Shamila

Sarwar, Maidul Hossain, Pinak Chakrabarti. **J. Mol. Struct**, 2017 (Elsevier, I.F. 1.753).

25. “Characterization and strain improvement of aerobic denitrifying EPS producing bacterium *Bacillus cereus* PB88 for shrimp water quality management”. Prasenjit Barman, Partha Bandyopadhyay, Ahmet Kati, Tanmay Paul **Amit K. Mandal**, Keshab C. Mondal, Pradeep K. Das Mohapatra. **Waste Biomass Valor**, 2017 (Springer, I.F. 1.337) (In press)
24. “Photocatalytic and Antibacterial Performance of α -Fe₂O₃ Nanostructures”. T. K. Jana, A. Pal, **A. K. Mandal**, S. Sarwar, P. Chakrabarti, K. Chatterjee. **Chem. Select**, 2017 (John Wiley) (In press)
23. “Spectroscopic investigation on interaction of biogenic, *Croton bonplandianum* leaves extract mediated potential bactericidal silver nanoparticles with human hemoglobin and human serum albumin”. Maidul Beg, Anukul Maji, **Amit K. Mandal**, Somnath Das, Pradeep K. Jha, Maidul Hossain. **J. Biomol. Struct. Dyn**, 2017, 28, 1-13 (Taylor & Francis, I.F. 2.3).
22. “Impact of detergents on the physiochemical behavior of itraconazole loaded nanostructured lipid carriers”. A. Bhadra, G. Karmakar, P. Nahak, P. Chettri, B. Roy, P. Guha, **A. K. Mandal**, R.K. Nath, A.K. Panda. **Colloids. Surf. A Physicochemical and Engineering Aspects**, 2017, 516, 63-71 (Elsevier, I.F. 2.760).
21. “Structural elucidation and immunostimulating property of a novel polysaccharide extracted from an edible mushroom *Lentinus fusipes*”. Dilip K. Manna, Prasenjit Maity, Ashis K. Nandi, Manabendra Pattanayak, Bibhash C. Panda, **Amit K. Mandal**, Satyajit Tripathy, Krishnendu Acharya, Atish K. Sahoo, Nibha Gupta, Somnath Roy, Syed S. Islam. **Carbohydr. Polym**, 2017, 157, 1657–1665 (Elsevier, I.F. 4.219).
20. “Green synthesis of silver nanoparticles using *Pongamia Pinnata* seed: characterization, antibacterial property and spectroscopic investigation of interaction with human serum albumin”. Maidul Beg, Anukul Maji, **Amit K. Mandal**, Somnath Das, Mt. Nasima Aktara, Pradeep K. Jha, Maidul Hossain. **J. Mol. Recognit**, 2017, 30 (1) (John Wiley, I.F. 2.175).

2016

19. “Biopotentiality of *Bacillus cereus* PB45 for nitrogenous waste detoxification in *ex situ* model”. Prasenjit Barman, Ahmet Kati, **Amit K. Mandal**, Partha Bandyopadhyay, Pradeep Kumar Das Mohapatra. *Aquac. Int*, 2016, doi:10.1007/s10499-016-0105-y (Springer, I.F.

1.095).

18. “Double Tailed Cystine Derivatives as Novel Substitutes of Phospholipids with Special Reference to Liposomes”. Ravi Bhattarai, Tanushree Sutradhar, Biplab Roy, Pritam Guha, Priyam Chettri, **Amit K. Mandal**, Alexey G. Bykov, Alexander V. Akentiev, Boris A. Noskov, Amiya Kumar Panda. **J. Phys. Chem. B**, 2016, 120 (41), 10744–10756 (**American Chemical Society, I.F. 3.187**).
17. “Synthesis, characterization and crystal structure of a new 3D cadmium (II) coordination polymer: binding interaction with DNA and double stranded RNA”, Swapan Kumar Jana, **Amit K. Mandal**, Saikat Kumar Seth, Horst Puschmann, Maidul Hossain, Sudipta Dalai. **J. Inorg. Organomet. Polym**, 2016, 26, 806–818. (**Springer, I.F. 1.577**).
16. “Bacterial Keratinolytic protease, imminent starter for NextGen leather and detergent industries”, Tanmay Paul, Arijit Jana, **Amit K. Mandal**, Arpita Mandal, Pradeep K. Das Mohapatra, Keshab C. Mondal. **Sustain. Chem. Pharm**, 2016, 3, 8-22. (**Elsevier**).
15. “Sensing of tryptophan by a non-toxic cobalt(II) complex”, Swapan K jana, Amit K. Mandal, Anoop Kumar, Horst Puschmann, Maidul Hossain, Sudipta Dalai. **RSC Adv. 2016, 6, 95888-95896 (Royal Society of Chemistry, I.F. 3.289)**.
14. “ Effect of double Tailed Cationic Surfactant on the Physicochemical Behavior of Hybrid Vesicles”, Suraj Koirala, Biplab Roy, Pritam Guha, Ravi Bhattarai, Manish Sapkota, Prasant Nahak, Gourab Karmakar, **Amit K. Mandal**, Anup Kumar, Amiya Kumar Panda. **RSC Adv. 2016, 6, 13786- 13796 (Royal Society of Chemistry, I.F. 3.289)**.

2015

13. “Structural elucidation and biological studies of a novel exopolysaccharide from *Klebsiella pneumoniae* PB12”, **Amit K. Mandal**, Ipsita Kumar Sen, Prasenjit Maity, Sourav Chattopadhyay, Ranadhir Chakraborty, Somenath Roy, Syed Sirajul Islam. **Int. J. Biol. Macromol**, 2015, 79, 413-422. (**Elsevier, I.F. 3.671**).
12. “Antibacterial and DNA degradation potential of silver nanoparticles synthesized via green route”, Dilip Kumar Manna, **Amit K. Mandal**, Ipsita Kumar Sen, Praloy Maji, Soumyananda Chakraborti ,

Ranadhir Chakraborty, Syed Sirajul Islam, **Int. J. Biol. Macromol.** 2015, 80, 455-459. (Elsevier, I.F. 3.671).

11. “Enzymatic Hydrolyzed Feather Peptide, a Welcoming Drug for Multiple-Antibiotic-Resistant Staphylococcus aureus: Structural Analysis and Characterization”. Tanmay Paul, Arpita Mandal, Santi Mohan Mandal, Kuntal Ghosh, **Amit K. Mandal**, Suman Kumar Halder, Arpan Das, Suman Kumar Maji, Ahmet Kati, Pradeep Kumar Das Mohapatra, Bikas Ranjan Pati, Keshab Chandra Mondal. **Appl. Biochem. Biotechnol.** 2015, 175:3371-3386. (Springer, I.F. 1.735).
10. “A water soluble β -glucan of an edible mushroom Termitomyces heimii: Structural and biological investigation”. Dilip Kumar Manna, Ashis Kumar Nandi, Manabendra Pattanayak, Prasenjit Maity, Satyajit Tripathy, **Amit K. Mandal**, Somenath Roy, Sushri S Tripathy, Nibha Gupta and Syed Sirajul Islam. **Carbohydr. Polym.** 2015, 134: 375–384. (Elsevier, I.F. 4.219).

2014

9. “Bactericidal Effect of Polyethyleneimine Capped ZnO Nanoparticles on Multiple Antibiotic Resistant Bacteria harboring Genes of High Pathogenicity Island”, Soumyananda Chakraborti, **Amit K. Mandal**, Shamila Sarwar, Prashantee Singh, Ranadhir Chakraborty, Pinak Chakraborti, **Colloids. Surf. B Biointerfaces.** 2014, 121: 44-53. (SC and AKM contributed equally). (Elsevier, I.F. 4.152).
8. “Understanding the Patterns of Antibiotic Susceptibility of Bacteria Causing Urinary Tract Infection in West Bengal, India”. Sunayana Saha, Sridhara Nayak, Indrani Bhattacharyya, Suman Saha, **Amit K. Mandal**, Subhanil Chakraborty, Rabindranath Bhattacharyya, Ranadhir Chakraborty, Octavio L Franco, Santi Mohan Mandal, Amit Basak. **Front. Microbiol.** 2014, 5: 463. (Frontiers Media; I.F. 4.3).
7. “Exopolysaccharide from Acinetobacter junii BB1A: structural and immunological studies”, Ipsita Kumar Sen, **Amit K. Mandal**, Ranadhir Chakraborty, Birendra Behera, Krishna Kant Yadav, Tapas Kumar Maiti, Syed Sirajul Islam. **Carbohydr Polym.** 2014, 101:188-95. (Elsevier; I.F. 4.219).
6. “MitoProteomics: New Insights in Infection Biology”. Santi M Mandal, **Amit K Mandal**, Keshab C Mondal, Bikas R Pati. **Organ. Proteom.** 2014, 2084-722X (SMM and AKM contributed equally).

2013

5. “Green synthesis of silver nanoparticles using glucan of an edible mushroom and study of their antibacterial activity on multiple antibiotic resistant *Klebsiella pneumoniae* YSI6A”. Ipsita Kumar Sen, **Amit K. Mandal**, Soumyananda Chakraborti, Biswajit Dey, Ranadhir Chakraborty, Syed Sirajul Islam. **Int. J. Biol. Macromol.** 2013, 62: 439-449. (Elsevier, **I.F. 3.671**).
4. “Diverse gene cassettes in class 1 integrons of facultative oligotrophic bacteria of River Mahananda, West Bengal, India”, Ranadhir Chakraborty, Arvind Kumar, Suparna Saha Bhowal, **Amit K. Mandal**, Bipranch Kumar Tiwary, Shriparna Mukherjee. **PLOS ONE.** 2013, Volume 8, Issue 8 e71753. (Public Library of Science (PLOS), **I.F. 3.234**).
3. “Copper susceptibility in *Acinetobacter junii* BB1A is related to the production of extracellular polymeric substances”, Krishna Kant Yadav, **Amit K. Mandal**, Ranadhir Chakraborty. **A van Leeuw J Microb.** 2013, 104:261-269. (Springer, **I.F. 1.944**).
2. “Partial characterization and flocculating behavior of an exopolysaccharide produced in nutrient-poor medium by a facultative oligotroph *Klebsiella* sp. PB12”, **Amit K. Mandal**, Krishna Kant Yadav, Ipsita Kumar Sen, Arvind Kumar, Soumyananda Chakraborti, Syed Sirajul Islam, Ranadhir Chakraborty. **J Biosci Bioeng.** 2013, 115: 76-81. (Elsevier, **I.F. 2.244**).

2012

1. “Flocculating Property of Extracellular Polymeric Substances Produced by a Biofilm-Forming Bacterium *Acinetobacter junii* BB1A”, Krishna Kant Yadav, **Amit K. Mandal**, Ipsita Kumar Sen, Soumyananda Chakraborti, Syed Sirajul Islam, Ranadhir Chakraborty. **Appl Biochem Biotechnol.** 2012, 168:1621–1634 [K K Yadav, A K Mandal and I K Sen were contributed equally]. (Springer, **I.F. 1.735**).

Research papers: 33

National: 02 (Patents)

International: 28

Books chapter: 03

1. “*Biology of Bacterial Biofilms*”, Krishna Kant Yadav, **Amit Kumar Mandal**, Ranadhir Chakraborty. *Biology of Plants and Microbes* ISBN-978-93-80663-63-0 Eds.: D Bose & S Roy Published by - Levant Books, Kolkata.
2. “Hunting Food Together is a Social Behavior: Do Bacteria Become Social in Scarcity and Selfish in Abundance?”, Ranadhir Chakraborty, **Amit K. Mandal**. *Biodiversity and Sustainability: Opportunities and Challenges* ISBN: 999-9-9999-9999-9 Eds.: Rakhee Das Biswas and Abhijit Sarkar © Raiganj Surendranath Mahavidyalaya.
3. “*Oligotrophic bacteria of River Mahananda: Spanking reservoir of integron-borne gene cassettes coding for diverse proteins including antibiotic-resistance*” Ranadhir Chakraborty, Arvind Kumar, Shriparna Mukherjee, Suparna S Bhowal, **Amit K. Mandal**, Bipranch Kumar Tiwary. 2013. *In: Biotechnology for people*. ISBN: 978-93-80663-86-9 (ed. S. Mukherjee), p. 50-59. Levant Books, Kolkata.

Patent (s): 02

1. “Novel Surface-Functionalized ZnO-Nanoparticles Exhibiting Therapeutic Properties, And Process For Preparing The Same” Soumyananda Chakraborti, Prachi Joshi, Dr. Tanya Das, Pinakpani Chakraborti, Ranadhir Chakraborty, **Amit K. Mandal**
2. “Carbon Nanoparticle composite and the process of manufacture thereof” Ipsita K. Sen, **Amit K. Mandal**, Maidul Hossain, Amiya K. Panda, Mahmut D. Yilmaz, Ahmet Kati, Debesh C. Bhattacharya.

News and activities:

1.

ওষুধের দুনিয়ায় নয়া আবিষ্কারের দাবি

নিজস্ব সংবাদদাতা

মেদিনীপুর।

৩০ জুন, ২০১৬, ০০:৩৩:১৮

শেষ আপডেট: ৩০ জুন, ২০১৬, ০৩:৪৬:২২

ওষুধের দুনিয়ায় নয়া আবিষ্কারের দাবি

নিজস্ব সংবাদদাতা, মেদিনীপুর: রোগীর বেড়ে রোগ সারাতে বাধার হাথ ট্যাবলেট, ইন্জেকশন বা ক্যাপসুল। এই সব ওষুধের মধ্যে অসুখ সারানোর উপাদান ছাড়াও থাকে এক ধরনের রাসায়নিক যাকে ডিক্রিমো পরিবেশে 'অ্যানো প্যাটিকল' বলা হয়। অসুখের উৎস শরীরের যে অংশে বা অঙ্গে ডিক্রিমো 'টার্গেট সাইট'-এ ওষুধকে



পৌছে দিতে বাহকের কাজ করে এই উপাদান।

কিন্তু ওষুধের মধ্যে বিশেষ থাকা 'বাহক' যদি রোগীর শরীরের ভিতর প্রবেশ করেই গলেতে শুরু করে তা হলে ওষুধক মিসিটি অঙ্গে পৌছানোর আগে শরীরে মিশতে শুরু করে দেয়। অর্থাৎ, অনেকটা নষ্ট হয়। অনেক ক্ষেত্রে এটা মাথায় বেখে ওষুধ প্রস্তুতকারকেরা ওষুধের মাত্রা প্রয়োজনীয় মাত্রার থেকে কিছুটা বেশি রাখেন। বাহক ক্রমত গলেতে শুরু করবে বলে নিজেই শরীরের 'টার্গেট সাইট'-এ পৌছতে কতটা ওষুধ নষ্ট হতে পারে তার হিসাব করে এটা করা হয়।

'ফসপোলিপিড' হল এই রকমই এক 'ওষুধ বাহক'। বিদ্যাসাগর বিশ্ববিদ্যালয়ের দুই বিভাগের দুই অধ্যাপক আর উত্তরবঙ্গ বিশ্ববিদ্যালয়ের এক অধ্যাপক মিলিত ভাবে গবেষণা করে ফসপোলিপিডের এক বিকল্প তৈরি করেছেন। তাদের দাবি, ওষুধকে টার্গেট সাইটে পৌছে

না দেওয়া পর্যন্ত এই বাহক গলে যাবে না। এটি তৈরির খরচও অসম্ভাব্যত কম।

বিদ্যাসাগর বিশ্ববিদ্যালয়ের রসায়ন বিভাগের অধ্যাপক অমিয়কুমার পাণ্ডা, মহিলাকোলাজেলজি বিভাগের অধ্যাপক অমিত কুমার মজল আর উত্তরবঙ্গ বিশ্ববিদ্যালয়ের অরুণ কুমার, এই তিনজনের যৌথ গবেষণায় এই ধরনের বাহক তৈরি করা গিয়েছে। সম্রতি আমেরিকার এক নামী জার্নাল 'রয়েল সোসাইটি অফ কেমিস্ট্রি এডভান্সেস' এ তাদের এই সক্রোজ গবেষণাপত্রটি প্রকাশিত হয়েছে।

গবেষক অমিয় কুমার পাণ্ডা জানান, বাহকের স্থায়িত্ব, তা তৈরির খরচের উপরে ওষুধের দাম নির্ভর করে। বাহকের স্থায়িত্ব বাড়লে ওষুধের স্থায়িত্বকাল বা 'এক্সপায়ারি ডেট' বেড়ে যায়। তাতে দাম কিছুটা কমে। তারা এখন বাধার ওষুধ নিয়ে পরীক্ষা চালিয়েছেন। আর তাতে ভাল ফলাও পেয়েছেন বলে দাবি করেছেন।

2. News headline by Bengali news channel ETV news & 24 Ghanta, for the work on “ Carbon Nanoparticle composite and the process of manufacture thereof ”
3. Receiving NESA-Young Scientist of the year Award-2017 for his outstanding contribution in the field of Microbiology.



Conference/Seminar/Organisation:

Conference/Seminar Organized:

1. As a Joint Secretary in a UGC-sponsored National Seminar on "Microbiology in 21st Century" (NSM21C- 2016), Department of Microbiology, Vidyasagar University, Midnapore.
2. As a Joint Secretary in a National Seminar on “Emerging areas of Sericulture: Issues, Challenges and Industrial application for Sustainable Development and Eco-Restoration”

(SEAS-2018), Department of Sericulture, Raiganj University, Raiganj.

Paper presented in International and national seminar or conference:

Invited talk as a key note speaker:

1. Delivered lecture on *“Photoluminescent heparin capped carbon dots: synthesis, physicochemical properties and its anticancer potential”* in NSM21C, Department of Microbiology, Vidyasagar University (29th Feb-1st March 2016).
2. Delivered lecture on *“Green synthesized silver nanoparticles as a promising antimicrobial to combat multiple antibiotic resistant (MAR) bacteria”* in Kankabati Rishi Arabinda Rural Development And Social Welfare Institute (20th March 2016).
3. Delivered lecture on *“Effect of Double Tailed Cationic Surfactant on the Physicochemical Behavior of Hybrid Vesicles”* in the section of New Biology (including Bio chemistry, Biophysics, & Molecular Biology and Biotechnology) at 104th Indian Science Congress to be held from January 3rd to 7th 2017 at SV University, Tirupathi.

Publication in International academic seminar/ Conference/ Workshop:

1. Presented paper on *“Characterization and flocculating property of carbohydrate polymer from a river isolate Acinetobacter junii BB1A”* in World congress on Biotechnology held on Hyderabad 21-23 March, 2011 (doi:10.4172/1948-5948.1000001).
2. Presented paper on *“Down and up-regulation, and exclusive expression of genes involved in Two-component Signal Transduction systems (Phospho-relay) in relation to survival under nutrient-rich and nutrient-poor condition in a facultatively oligotrophic bacterium Klebsiella pneumoniae PB12”* in International Symposium on Molecular Signaling February 18-21, 2013 Department of Zoology, Visva-Bharati, Santiniketan, India.
3. Presented paper on 5th Asian conference on colloid and interface science organized by The Asian society for colloid and surface science and Department of Chemistry, university of North Bengal, Darjeeling, India during Nov 20-23, 2013.

Publication in National academic seminar/ Conference/ Workshop with title of paper presented:

1. Participated in 58th Annual Meeting of Indian Phytopathological Society AND National Symposium on *Emerging Plant Diseases, their Diagnosis and Management*, Department of Botany (UGC-SAP), University of North Bengal from Jan 31- Feb 2, 2006.
2. Participated in a National Workshop on Bioinformatics organized by the NBU Bioinformatics Facility, Department of Botany from 18th to 20th Jan, 2008.
3. Participated as a registered delegate and presented a paper on "*Towards explaining the molecular physiology and resistance to hydrogen peroxide and nanoparticle killing of a gram negative facultative oligotrophic strain PB12, isolated from the River Mahananda, Siliguri*" in the National Conference MiDiCon 2010 on Diversity and Prospects of Microbial Resources, organized by Department of Microbiology from Feb 26th to 28th 2010.
4. Presented a paper entitled "*Testing the efficacies of ZnO-QDs as potential antibacterial agent for multidrug-resistant enteropathogens*" and participated in the Young Researchers' National Conference 2011 held at Institute of Chemical Technology, University of Mumbai, from Jan 13th to 14th 2011.
5. Participated in the 1st UGC sponsored Research Scholars' Training Programme from 30th June to 1st July, 2011 held at Academic Staff College, University of North Bengal.
6. Participated and presented a paper on "*Biophysical Characterization of a unique extracellular carbohydrate polymer produced by an oligotrophic strain, Klebsiella sp. PB12*" in National Conference on Biology and Bioinformatics of Economically Important Plants and Microbes held from 17th to 19th Feb 2012, organized by Department of Botany and Bioinformatics Facility, University of North Bengal.
7. Participated as a registered delegate and presented a paper on "*Antibacterial activity of (1→6) β-D glucan synthesized silver nanoparticles against multiple antibiotic resistant bacteria K. pneumoniae YSI6A*" in MICROTRENDS 2012 organized by Department of Microbiology, University of North Bengal on 16th March 2012.
8. Participated and presented paper on "*Evaluation of antibacterial activity of heteropolysaccharide capped silver nanoparticles synthesized via green route*" in MIBISEM-2013 co-

organized by Department of Biotechnology and Department of Microbiology, University of North Bengal held on 25th -26th February, 2013.

9. Participated and presented paper on “*Structural elucidation and biological studies of a novel exopolysaccharide isolated from an opportunistic pathogen Klebsiella pneumoniae PB12*” in Chemical Science Horizon, Organized by Department of Chemistry, Raiganj University on March, 2017.
10. Participated and presented paper on “*Physico-chemical characterization and flocculating behavior of an exopolysaccharide produced in nutrient-poor medium by a facultative oligotroph Klebsiella sp. PB12*” in Current Trends in Plant and Microbial Research-2017, Organized by Department of Botany, Raiganj University on 23rd March, 2017.
11. Participated as Rapporteur in the Scientific Session of the National conference on “Impact of Environmental Changes on Indian Ecosystems” organized by Department of environmental Science & Limnology & University Institute of Technology, Barkatullah University, Bhopal, M.P on 23-24th Dec, 2017.

Delivered special lecture as Hon’ble Guest:

1. Delivered a special talk in a student seminar-2017, organized by Zoology Department at Raiganj Surendranath Mahavidyalaya.