



Bismita Nayak, Ph.D.

Assistant Professor

Department of Life Science

National Institute of Technology Rourkela

Orissa, 769008, India

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Indian National

Female

**CURRENT POSITION: Assistant Professor, NIT Rourkela
12/2008**

ALMA MATTER

Continuing since

Duration

Post-Doctoral Experience/ Nehru Fulbright Postdoctoral Fellow

Stanford School of Medicine, Department of Genetics

Dissertation Topic: Immunology and Nano biotechnology

02/2014-09/2014

Massachusetts Institute of Technology Cambridge,

Department of Chemistry

Dissertation Topic: Viscosity measurements of DNA and Protein & Biophysical Characterization

09/2013-02/2014

Doctoral Degree, 8.75 CGPA

Centre for Biomedical Engineering, Indian Institute of Technology Delhi & All India Institute of Medical Sciences, New Delhi

Dissertation Topic: Preparation and Immunological evaluation of biodegradable particle based Rotavirus vaccine.

01/2003-12/2008

Master's Degree/ Microbiology, 73.2%

Orissa University of Agriculture and Technology, PG Department of Microbiology, Bhubaneswar, Orissa, India

Dissertation Topic: Uptake of potassium by different plants with the use of Potash mobilizing bacteria (Fracturia aurantia), done at Regional Biofertilizer Development Centre, Bhubaneswar

08/1999-01/2002

Bachelor's Degree/ Zoology (Hons.), 68.08%

Ravenshaw Autonomous University, Zoology with Hons., Botany and Chemistry

07/1996-07/1999

RESEARCH INTEREST:

The aim of my research is to generate a disease free society and healthy being. Every infection/invasion consists of a battle between the invading pathogen and the resisting host. Disease free and being healthy are two different manifestations. The body has its in-built mechanisms to know when to act and when to react. I find ways to combat various diseases and install a complete healthy condition by applying various methods from different fields of science. Deciphering the mechanisms and digging out the cause can help in bringing out the right kind of effect to the existing problems. My area of research is interdisciplinary in nature comprising of but not limited to Drug/Vaccine Delivery/ Nanobiotechnology, Biomaterial applications and Immunological evaluation. My efforts are to understand normal body functioning and disease pathophysiology at cellular and molecular level and to use the knowledge in designing tools for disease diagnosis, prognosis, therapeutics and prevention.

HONORS/AWARDS

- 2013: Completed **USIEF Fulbright Nehru Postdoctoral fellowship award for year 2013-2014** at **Stanford, School of Medicine**.
- 2013: Received FAST TRACK project entitled “**Outer membrane vesicle proteins targeted as new vaccine strategies for *Vibrio cholerae* through microparticulate delivery system**” sponsored by Department of Science and Technology, Govt. of India.
- 2013: Travel support of \$1,000 each by R&D systems to support immunology researchers by awarding ten travel grants to 15th International Congress of Immunology–ICI, Milan, Italy, held on August 22 – 27, 2013
- 2013: Invited Lecture on Advances in Molecular Medicine- Roles of plants and microbes providing an answer to present day diseases and health complications at Department of Life Science, Municipal College Rourkela, 769012, dated: 19 Feb 2013 during the occasion of Annual Life Science Seminar.
- 2013: As the convener, successfully organized two days workshop in “Advanced Techniques in Life Sciences – ATILS” at Department of Life Science NIT Rourkela from March 7-8, 2013.
- 2011: Session Chaired and Oral Presentation on “Formulation and Characterization of Chitosan coated encapsulated microparticles for vaccine development” at “International conference on Bioengineering and Biotechnology (ICBB 2011)” held on 28-30 November, 2011, at Venice, Italy.
- 2011: Invited Lecture on “Chitosan coated PLA/PLGA nanoparticles for delivery of drugs and therapeutic proteins” at International world conference on Nanomedicine and drug delivery, held at Kottayam, Kerala, 11 – 13th March, 2011.
- 2008: Travel support by GP Talwar Immunology Foundation for year 2008.
- 2008: Institute travel support from IIT Delhi for year 2008.
- 2006: **First prize** in poster presentation at International Conference on Design of Biomaterials (BIND-06) and XVII Annual meeting of SBAOI held in Indian Institute of Technology Kanpur, 8 – 11th Dec, 2006.
- 2007: **Appreciation award**. Selected for oral presentation at 33rd Indian Immunology Society conference held on 28 – 31st Jan 2007 at J.L.N. auditorium, AIIMS, New Delhi, one among 10 best papers presented.
- 2002: CSIR NET (JRF): Cleared twice in May 2002 and again in December 2002.

RESEARCH PUBLICATIONS IN REVIEWED JOURNALS:

Publications: (Total: 24), Communicated and under review: (2)

1. Debasis Nayak, Manisha Kumari, Sripathi Rajachandar, Sarbani Ashe, Neethi C Thathapudi, **Bismita Nayak**, Biofilm Impeding AgNPs Target Skin Carcinoma by Inducing Mitochondrial Membrane Depolarization Mediated through ROS Production, ACS Applied Materials & Interfaces (Accepted) (IF: 7.14) DOI: 10.1021/acsami.6b11391
2. Pradipta R. Rauta, **Bismita Nayak**, Gabriel A. Monteiro, Marília Mateus, Design and characterization of plasmids encoding antigenic peptides of Aha1 from *Aeromonas hydrophila* as prospective fish vaccines, Journal of Biotechnology, Accepted (IF: 2.67)
3. Pradipta Ranjan Rauta, Sarbani Ashe, Debasis Nayak, **Bismita Nayak**, In Silico identification of outer membrane protein (Omp) and subunit vaccine design against pathogenic *Vibrio cholera*, Computational Biology and Chemistry, Volume 65 (2016) 61-68 (IF: 1.014)
4. Debasis Nayak, Ankita Boxi, Sarbani Ashe, Neethi Chandra Thathapudi, **Bismita Nayak** (2016). “Stavudine loaded gelatin liposomes for HIV therapy: preparation, characterization and in vitro cytotoxic evaluation”. Materials Science and Engineering C (Accepted) (IF: 3.3)

5. Debasis Nayak, Sarbani Ashe, Pradipta Ranjan Rauta, **Bismita Nayak** (2016). “Assessment of antioxidant, antimicrobial and anti-osteosarcoma potential of four traditionally used Indian medicinal plants”. *Journal of applied Biomedicine* (Accepted) (IF:1.5) DOI: [10.1016/j.jab.2016.10.005](https://doi.org/10.1016/j.jab.2016.10.005)
6. Sarbani Ashe, Debasis Nayak, Manisha Kumari, **Bismita Nayak** (2016). “Ameliorating effects of green synthesized silver nanoparticles on glycated end product induced ROS production and cellular toxicity in osteogenic Saos-2 cells”. *ACS Applied Materials & Interfaces* (Accepted) (IF: 7.14) DOI: [10.1021/acsami.6b10639](https://doi.org/10.1021/acsami.6b10639)
7. Jyotsna Rani Padhi, Debasis Nayak, Pradipta Ranjan Rauta, Sarbani Ashe, Arpita Nanda, **Bismita Nayak** (2016), Development of highly biocompatible Gelatin & i-Carrageenan based composite hydrogels: In depth physiochemical analysis for biomedical applications, *Carbohydrate polymers*- Volume/Issue no 153C,292-301(IF: 4.21).
8. Pankaj Chopra, Debasis Nayak, Sarbani Ashe, Pradipta Ranjan Rauta, **Bismita Nayak** (2016). Fabrication of PVA-Carrageenan scaffolds for cryopreservation: Effect of composition and duration of cryopreservation on cell viability. *Carbohydrate polymers*, 20;147:509-16(IF: 4.21)
9. Manisha Kumari, Debasis Nayak, Sarbani Ashe, Neethi Chandra Thathapudi, **Bismita Nayak**,(2016) Stability study of OMP encapsulated PLA-PLGA microparticles in simulated body fluid: A DLS perspective,, *Micro & Nano Letters*, Aug 11 (8): 446-449 [10.1049/mnl.2016.0208](https://doi.org/10.1049/mnl.2016.0208) (IF: 0.85)
10. Debasis Nayak, Aliva Prity Minz, Sarbani Ashe, Pradipta Ranjan Rauta, Manisha Kumari, Pankaj chopra, **Bismita Nayak** (2016). ‘Synergistic combination of antioxidants, silver nanoparticles and chitosan in a nanoparticle based formulation: Characterization and cytotoxic effect on MCF-7 breast cancer cell lines’ *Journal of Colloid and Interface Science*, 470C, pp. 142-152. (IF: 3.7)
11. Pradipta Ranjan Rauta, Niladri Mohan Das, Debasis Nayak, Sarbani Ashe, **Bismita Nayak**, (2016) ‘Enhanced efficacy of Clindamycin hydrochloride encapsulated in PLA/PLGA based nanoparticle system for oral delivery’ *IET Nanobiotechnology*, doi: [10.1049/iet-nbt.2015.0021](https://doi.org/10.1049/iet-nbt.2015.0021) (IF: 1.5)
12. Prajna Mishra, **Bismita Nayak**, R.K. Dey, (2016), PEGylation in anti-cancer therapy: An overview, *Asian Journal of Pharmaceutical Science*, Volume 11, (3) June 2016, Pages 337–348 (IF: 0.5)
13. Debasis Nayak, Sarbani Ashe, Pradipta Ranjan Rauta, Manisha Kumari, **Bismita Nayak**, (2015), Biologically synthesised silver nanoparticles from three diverse family of plant extracts and their anticancer activity against epidermoid A431 carcinoma, *Colloid and Interface Science*, Volume 457, Pages 329–338, (IF: 3.368)
14. Debasis Nayak, Sarbani Ashe, Pradipta Ranjan Rauta, Manisha Kumari, **Bismita Nayak***, (2016), Bark extract mediated green synthesis of silver nanoparticles: Evaluation of antimicrobial activity and antiproliferative response against osteosarcoma, *Materials Science and Engineering C*, Volume 58, Pages 44–52. (IF: 3.3)
15. Rauta PR, **Nayak B***, (2015), Parenteral immunization of PLA/PLGA nanoparticle encapsulating outer membrane protein (Omp) from *Aeromonas hydrophila*; Evaluation of immunostimulatory action in *Labeo rohita* (rohu), *Fish and Shellfish Immunology*, 44(1):287-94 (IF: 3.034)
16. Sarbani Ashe, Debasis Nayak, Gunjan Tiwari, Pradipta Ranjan Rauta, **Bismita Nayak***, (2014) 'Development of liposome encapsulated ketoconazole: formulation, characterization and evaluation of pharmacological therapeutic efficacy, *accepted in Micro and Nano Letters*. doi:[10.1049/mnl.2014.0198](https://doi.org/10.1049/mnl.2014.0198)., Page 1-4. (IF: 0.85)
17. Debasis Nayak, Sarbani Ashe, Pradipta Ranjan Rauta, **Bismita Nayak***, (2014), Biosynthesis, characterization and antimicrobial activity of AgNPs using *Hibiscus rosa-sinensis* petals extracts, *IET Nanobiotechnology* (IF: 1.723)

18. Akalabya Bissoyi, Bismita Nayak*, Krishna Pramanik*, Sunil K. Sarangi “Targeting cryopreservation induced cell death: A review” (2014), *Journal of Biopreservation and Biobanking*, (2014); 12(1): 23-34 (IF: 1.5)
19. Pradipta R Rauta, Mrinal Samanta, Hirak R Dash, Bismita Nayak*, Surajit Das*, “Toll-like receptors (TLRs) in aquatic animals: Signaling pathways, expressions and immune responses” *Immunology letters* (2014); 158 (1-2): 14-24. (IF: 2.337)
20. Pradipta R Rauta, Madhusmita Dhupal, Bismita Nayak*, “Screening and characterization of potential probiotic lactic acid bacteria isolated from vegetable waste and fish intestine” *International Journal of Current Microbiology and Applied Sciences* (2013); 2: 234-244 (IF: 2.9)
21. Pradipta R Rauta, Bismita Nayak, Surajit Das (2012), Immune system and immune response in fish and their role in comparative immunity study: A model for higher organisms, *Immunology letters* (2013); 148(1): 23-33, (IF: 2.337)
22. Sahoo, N. Kumar, C. Bhattacharya, S. S. Sagiri, K. Jain, K. Pal, Ray, B. Nayak, (2011), Organogels: Properties and Applications in Drug Delivery, *Designed Monomers and Polymers*, 95-108. (IF: 0.711)
23. Bismita Nayak, Amulya K. Panda, Pratima Ray and Alok R. Ray, “Improved Immunogenicity of Biodegradable Polymer Particle Entrapped Rotavirus Vaccine”, *Journal of Biomaterials Applications*, (2011): 25 (5): 469-486, (IF: 2.246)
24. Bismita Nayak, Amulya K. Panda, Pratima Ray and Alok R. Ray, “Formation, characterization and evaluation of Rotavirus encapsulated PLA and PLGA particles” *Journal of Microencapsulation*, (2009); 26(2): 154-165, (IF: 1.738)

Communicated:

1. Manisha Kumari, Pradipta Ranjan Rauta, Debasis Nayak, Sarbani Ashe, Krishna Mohanty, Bismita Nayak, Development and characterization of PLA/PLGA-OMP microparticles as potential therapeutics against cholera based on the pathogenicity of V. cholerae O139 and V. cholerae classical strains, communicated.
2. Sarbani Ashe, Subhadarshani Agasti, Pradipta Ranjan Rauta, Satish Lakkoji, Harekrushna Sahoo, Monalisa Mishra, Bismita Nayak, Novel chromogenic bacteria characterized and probable treatment options with use of herbal products and reagents helpful in restricting biofilm formation, communicated

PAPER PRESENTATION AT CONFERENCES - INTERNATIONAL:

1. Bismita Nayak, Pradipta Ranjan Rauta, Niladri Mohan Das, Oral presentation on “Evaluation of Clindamycin encapsulated in PLA/PLGA nanoparticles”, at The 4th Asian Biomaterials Congress held at Hong Kong, 26-29th June 2013.
2. Bismita Nayak, Oral Presentation on “Formulation and Characterization of Chitosan coated PLA and PLGA encapsulated microparticles for vaccine development” at “**International conference on Bioengineering and Biotechnology (ICBB 2011)**” held from 28-30th November, 2011, at **Venice, Italy**.
3. Bismita Nayak, Amulya K. Panda, Pratima Ray and Alok R. Ray, Presented paper on “Immune response generated to Rotavirus encapsulated PLA/PLGA microparticles through various routes of immunization” at International Conference on **Antivirals Congress, held at Amsterdam**, The Netherlands held from 07-11-2010 to 09-11-2010.
4. Bismita Nayak, Amulya K. Panda, Pratima Ray and Alok R. Ray, Poster presentation on topic “Preparation and Characterization of Rotavirus Loaded Biodegradable Microparticles for Vaccine Delivery” at 8th World Biomaterials Congress (WBC 2008) held at Amsterdam, The Netherlands, from 28 May to June 2008.

PAPER PRESENTATION AT CONFERENCES - NATIONAL:

1. *Nayak, D.*, Minz, A.P., Boxi, A., Ashe, S., Rauta, P.R., **Nayak, B.**: “Antioxidant activity of phytochemical conjugated silver nanoparticles and its anticancer efficacy against A431 Skin carcinoma: A case study” poster presented at International Conference “Conference on Frontiers in Biological Sciences [InCoFIBS-2]” held at NIT Rourkela, Odisha India, 22nd - 24th January, 2015, page No-154.
2. *Nayak, D.*, Ashe, S., Kumari, M., Rauta, P.R., **Nayak, B.**: “Antimicrobial and anticancer efficacy of green synthesized silver nanoparticles from bark extracts of *Ficus benghalensis*” poster presented at “International conference on polymeric biomaterials, bioengineering and biodiagnostics” held at IIT, Delhi, India, 27-30th October, 2014, Page no-271
3. *Nayak, D.*, Ashe, S., Rauta P. R., **Nayak, B.**: “Green synthesis, characterization and evaluation of antimicrobial properties of AgNPs using Hibiscus rosa-sinensis petal extract” poster presented at International conference on Nanoscience and Nanotechnology- Aligarh Nano IV International 2014- held at Dept.of Applied Physics, Aligarh Muslim university, Aligarh, 8-10th March, 2014, Page No-70.
4. Ashe, S., *Nayak, D.*, Rauta, P.R., Kumari, M., **Nayak, B.**: “Effect of advanced glycation end products in human osteogenic Saos-2 cells” poster presented at “Conference on Frontiers in Biological Sciences [InCoFIBS-2]” held at NIT Rourkela, Odisha India, 22- 24th January, 2015, page No-153.
5. Ashe, S., *Nayak, D.*, Rauta, P.R., **Nayak, B.**: “Liposomal silk sericin formulations targeting ROS activity in vitro cell culture studies” poster presented at “International conference on polymeric biomaterials, bioengineering and biodiagnostics” held at IIT, Delhi, India, 27-30th October, 2014, Page no-273.
6. Madhusmita Dhupal, **Bismita Nayak** and Mihir K Dash, “Isolation, characterization of probiotic lacticacid bacteria from kitchen waste and from fresh water fish intestine”, presented by Madhusmita Dhupal at 52nd Annual conference of Association of Microbiologists of India (AMI 2011), International conference on microbial Biotechnology for sustainable development, November 3-6, 2011, Punjab University, Chandigarh, pp-503.
7. Manalee Surve, Krishna Pramanik, Sunil K. Sarangi and **Bismita Nayak**, “a review on targeting cryopreservation induced cell death”, presented by Manalee Surve at International Conference on Tissue Engineering and Regenerative Medicine, 30-09-2011 to 02-10-2011, Department of Biotechnology and Medical Engineering, NIT Rourkela, Orissa, PP-55.
8. Pravat Kumar Parida, Kautilya Kumar Jena and **Bismita Nayak**, “Alginate coated Chitosan microparticles and scaffold materials for delivery of anti-tuberculous drugs (ATDs)” poster presentation by Pravat Kumar Parida at National Conference on Tissue Engineering: Prospects & Challenges, 21-22 January 2011, Department of Biotechnology and Medical Engineering, NIT Rourkela, Orissa, pp-247.
9. Amit Chatterjee and **Bismita Nayak**, oral paper presentation by Amit Chatterjee on “Dynamics of telomere in immune response and tumorigenesis”, at National Conference on Tissue Engineering: Prospects & Challenges, 21-22 January 2011, Department of Biotechnology and Medical Engineering, NIT Rourkela, pp-39.
10. Pradipta R. Rauta, Rohini N and **Bismita Nayak**, oral paper presentation by Pradipta R. Rauta, “Bioleaching of slime metal ores collected from Joda mines of Orissa by the use of *bacillus* species” at national seminar “Trends in microbial bioremediation of contaminated soil” held on 24-25 September 2011 at PG Department of Microbiology, OUAT, Bhubaneswar, pp-25.
11. **Invited Lecture** on “Chitosan coated PLA/PLGA nanoparticles for delivery of drugs and therapeutic proteins” at International world conference on Nanomedicine and drug delivery 2011 held at Kottayam, Kerala, India from 11-03-2011 to 13-03-2011, pp-28.
12. **Bismita Nayak**, Amulya K. Panda, Pratima Ray and Alok R. Ray, Paper “Immunoevaluation of rotavirus encapsulated nanoparticles: In vitro and in vivo response” selected for oral

presentation at 33rd Indian Immunology Society conference held on 28 – 31st Jan 2007 at J.L.N. auditorium, AIIMS, New Delhi, one among 10 best papers presented, **Appreciation award**, pp-93.

13. **Bismita Nayak**, Amulya K. Panda, Pratima Ray and Alok R. Ray, **First prize in poster presentation** “Preparation and characterization of PLA/PLGA encapsulated rotavirus particles” at International Conference on Design of Biomaterials (BIND-06) and XVII Annual meeting of SBAOI held in Indian Institute of Technology Kanpur, 8 – 11th Dec, 2006, pp-67.
14. **Bismita Nayak**, Amulya K. Panda, Pratima Ray and Alok R. Ray, ICMM – 2006, “Preparation and characterization of alginate and PLA/PLGA encapsulated BSA particles” International conference on Molecules to Materials (ICMM) held during March 3-4, 2006 at Sant Longowal Institute of Engineering & Technology, Longowal, Sangrur, Punjab (India), pp-84.
15. **Bismita Nayak**, Amulya K. Panda, Pratima Ray and Alok R. Ray, “Preparation of biodegradable and biocompatible micro and nanoparticles for oral drug delivery” XVI conference of society for Biomaterial and Artificial Organs- India, Biomaterials, Tissue Engineering and Medical Diagnostics held at IIT Delhi on 24-26 Feb 2006.
16. **Bismita Nayak**, Amulya K. Panda, Pratima Ray and Alok R. Ray, “Biodegradable and biocompatible microspheres for intranasal vaccine delivery” CHEMCON 2005, 58th Annual Indian Session of Institute of chemical Engineers held at IIT Delhi on 14-17 Dec, 2005, pp-127.
17. **Bismita Nayak**, Amulya K. Panda, Pratima Ray and Alok R. Ray, ICCE-2005, International Congress of Chemistry and Environment held at Indore, India on 24-26 Dec, 2005.

MEMBER OF ANY SOCIETY

- Life member of Society for Biomaterials and Artificial Organs, India.
- Life member of Indian Immunological Society, India

BOOK CHAPTERS:

Sl. No.	Title	Publisher-name & Year	Authors (same order as in publication)	Remarks (whether authored or edited)
1	“ <i>Nanomedicines: journey from ayurvedic bhasma to Nanoparticles</i> ” for Ethno-Pharmacology, Biodiversity and Conservation	Kunal books publishers, New Delhi, Chapter 10, Page no- 154-204	Debasis Nayak, Bismita Nayak	Co Author
2.	“ <i>Drug Delivery Methodolgies</i> ” for Recent Advances of Biotechnology	Modern Biology and its applications: Part 2, New India Publishing Agency, PP, 611-647	B. Behera, S. S. Sagiri, Sudheep, V. Patil, V. Varghese, B. Biswal, K. Pal, S. Roy, S. S. Ray and B. Nayak	Co Author

3.	Abstract Book, IcoFIBS	2010	Dr. S.K. Patra, Dr. S. Das, Bismita Nayak	Edited
4.	Abstract book ATILS	2013	Contributed and Edited	Contributed and Edited

PROJECT INFORMATION

I. As PI

Sl. No	Title of the project	Funding agency	Total Financial outlay	Year of start & total period	Names of P.I. and other investigators	Status
1	As PI for Outer membrane proteins targeted as new vaccine strategies for <i>vibrio cholerae</i>	DST, FastTrack	25.67 Lakhs	3 years Till Aug 2016	Dr. Bismita Nayak (PI)	On Progress

II. As Co-PI

Sl. No	Title of the project	Funding agency	Total Financial outlay	Year of start & total period	Names of P.I. and other investigators	Status (completed, in progress or proposal submitted)
1	As one of the Co-PIs for Programme support for project Center for excellence, Tissue Engineering, NIT Rourkela, under the project "cryopreservation of cells and cell scaffold constructs for tissue engineering applications	DBT	2.88 Crore	09-06-2010	Prof. Sunil Kumar Sarangi, Dr. (Mrs.) Krishna Pramanik (PI), Dr. Srisendu Sekhar Ray, Dr. Bismita Nayak (Co-PI)	Completed
2	As Co-PI for Development of antimicrobial Organogels	DBT	31.788 Lakhs	July 18,2011 3 years	Dr. Kunal Pal (PI), and Dr. Bismita Nayak (Co-PI)	Completed

PHD RESEARCH STUDENTS GUIDED

Sl.No	Name of the Student	Project	Year of Joining	Remarks
1	Pradipta Ranjan Rauta	Immunology and Drug Delivery	Jan 2011	Selected for Erasmus Mundas Heritage Exchange Fellowship to Portugal. Thesis Submitted
2	Debasis Nayak	Immunophytochemicals and their characterization for Biomedical application	July 2012	Continuing experimental work Thesis submission due by Aug 2017
3	Sarbani ashe	Immunology and molecular dynamics of Various diseases	July 2012	Continuing experimental work Thesis submission due by Aug 2017

OTHER RESEARCH STUDENTS IN MY LAB

Sl. No	Name of student	Level	Project Title	From- To	Remarks
1	SatyaSundar Mohanty	Biomedical Dept., NIT	Tissue Engineering and Cryopreservation	July 2012 to July 2013	Completed
2	Madhusmita Dhupal	M.Phil Thesis Sambalpur University	Screening of Probiotic bacteria from Industrial, Kitchen waste	Jan 2011 to Jan 2012	Completed
3	Rupambika Das	Summer trainee from KIIT Bhubaneswar	Natural polymer based drug delivery	May 2012 to July 2012	Completed
4	Pankaj Gupta	Thaper University, Punjab	Preparation of novel scaffold that can support cell proliferation	Jan 2015 to July 2015	Completed
5	Bandana Swain	Sambalpur University	Preparation of nanogel	Jan 2015 to July 2015	Completed

M.Sc. THESIS SUPERVISION:

Sl. No	Level (M.Sc)	Title of project	Names of students	Year	Type of project (Expt.)
1	MSc	Green synthesis and characterization of silver nanoparticles produced using plant extracts	Sonali Pradhan	2013	Experimental Completed
2	MSc	Comparative study of different virulent markers among vibrio cholerae isolate	Krishna Mohanty	2013	Experimental Completed
3	MSc	Preparation and characterization of ketokonazole encapsulated ethosome and liposome	Gunjan Tiwari	2013	Experimental Completed
4	MSc	Antibacterial, antioxidant and phytochemical screening of Hibiscus rosa sinensis, Acorus Calamus, Cucurbita Maxima and Moringa Olifera	Debasis Nayak	2012	Experimental Completed
5	MSc	Phytochemical determination and antibacterial activity of dioica Roxb (Patal), Cucurbita Maxima (Pumpkin) and Abelomoscus esculentus Moench (Okra) Plant seeds.	Karamjit Singh	2012	Experimental Completed
6	MSc	Development and Characterization of Clindamycin Hydrochloride loaded PLA/PLGA nanoparticles	Niladri Mohan Das	2012	Experimental Completed
7	MSc	Preparation and Characterization of PLA and PLGA scaffold and Film	Gouri Shankar Haripal	2012	Experimental Completed
8	MSc	A comparative analysis of water collected from Koel River and water released from Rourkela steel Plant	Sonita Pradhan	2012	Experimental Completed
9	MSc	Screening of plastic degrading bacteria from dumped soil area	Pooja Thankur	2012	Experimental Completed
10	MSc	Screening of potential probiotic lactic acid bacteria from fresh water	Swati Chauhan	2012	Experimental Completed
11	MSc	Antioxidant and antimicrobial efficacy of Ficus religiosaL. And Ficus benghalensis L. Plant	Rashmi Rekha Sahoo	2012	Experimental Completed
12	M.Sc	Dynamics of telomere in immune response	Amit Chatterjee	2011	Experimental Completed
13	M.Sc	Natural polymer based Alginate and chitosan microparticles for delivery	Pravat Kumar Parida	2011	Experimental Completed

14	M.Sc	Biodegradable polymers based (PLA/PLGA) based nanoparticles in DNA plasmid delivery.	Kautilya Kumar Jena	2011	Experimental Completed
15	M.Sc	Enzymatic Screening of Edible and medicinal Mushroom species.	Rahul Chandra Mishra	2011	Experimental Completed
16	M.Sc	Bioleaching of iron and chrome from slime produced by steel industry by bacillus species	N. Rohini	2011	Experimental Completed
17	M.Sc	Effect of probiotic bacteria in conservation of aquatic microflora in Koel River	Priya monalisha Burh	2011	Experimental Completed
18	M.Sc	Preparation of Hydrogel based on i-Charraganan and gelation	Jyotsna Rani Padhi	2015	Experimental Completed
19	M.Sc	Preparation of Hydrogel based on i-Charraganan and PVA	Arpita Mishra	2015	Experimental Completed
20	M.Sc	Preparation and Characterization of Gelatin-Stavudine Conjugated Liposomal Nanoparticles for Better Delivery in case Of HIV.	Ankita Boxi	2015	Experimental Completed
21	M.Sc	Evaluation of Antioxidant and Anticancer Efficacy of Chitosan Based Nanoparticles.	Aliva Minz	2015	Experimental Completed
22	M.Sc	Anticancer efficacy of chitosan coated silver nanoparticles mediated through ROS production and apoptotic pathway	Neethi Chandra	2016	Experimental Completed

Collaborations

1. Dr. Bhaskar Vishwanathan

Nano-Medicine Lab

Mazumdar Shaw Centre for Translation Research

Mazumdar Shaw Medical Foundation

A-Block, 8th Floor #258/A, NH Health City

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2. Dr. Marilia Mateus

Assistant Professor

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Instituto Superior Técnico

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1049-001 Lisboa, Portugal

PROFESSIONAL/RESEARCH REFERENCES:

Prof. Alok R. Ray (Guide)

Retired as Professor and Head

Centre for Biomedical Engineering,

Indian Institute of Technology Delhi,

Hauz Khas, New Delhi, India, 110016

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Dr. Pratima Ray (Co-Guide)

Department of Pediatrics

Senior scientist

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E. Mail: pratimaray2003@yahoo.co.in

Date: 10/20/2016

NIT Rourkela



Bismita Nayak



IMMUNOLOGY & MOLECULAR MEDICINE LABORATORY (IMML)



RAJ, NEETHI, PRADIPTA, SARBANI, MANISHA, SANJEEV, DEBASIS