

Bhagyashree Padhan

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Education

- **Indian Institute of Science, Bangalore** 2022-Present
Ph.D., Bioengineering (CGPA 8.7/10)
- **Indian Institute of Technology, Guwahati** 2019-2022
M.Tech, Biosciences and Bioengineering (CGPA 9.56/10)
- **National Institute of Technology, Rourkela** 2019
B.Tech, Biotechnology and medical Engineering (CGPA 8.25/10)
- **D.A.V Public School, I.T. P. S Banharpali** 2015
Higher Secondary School Certificate (Percentage 93.8)
- **D.A.V Public School, I.T. P. S Banharpali** 2013
Secondary School Certificate (CGPA 10)

Research Experience

- **IISc Bangalore (Drug Delivery Laboratory)** Jan 2022-Ongoing
Ph.D research with Dr. Rachit Agarwal
 - Prepared drug loaded microparticles and protein loaded hydrogels, tested the formulation *in vitro* in chondrocyte cell line for senescence, established surgically induced mice model of osteoarthritis
- **IIT Guwahati (Centre of Excellence)** Sep 2020-May 2021
Post graduate research with Dr. Aiyagari Ramesh
 - Ascertained the interaction of small amphiphilic ligands with *S.aureus* enzyme by molecular docking studies, studied their bactericidal activities on Methicillin-resistant *S. aureus* determined its cytotoxicity
- **NIT Rourkela (Environmental and Plant Biotechnology Laboratory)** Jul 2018-Jul 2019
Undergraduate Research with Dr. Angana Sarkar
 - Isolated and identified pigment producing bacteria from wastewater, extracted and characterized the pigment, optimized for higher yield of pigment.
- **IIT Indore (Computational Fluid Dynamics Laboratory)** May 2018-Jul 2018
Intern with Dr. Shanmugam Dhinakaran
 - Carried out theoretical research on metabolic disorders and their detection in the blood sample using different techniques.

Publications

- Dhanabalan K M.¹, **Padhan B**¹, Dravid A.A, Agarwal S, Pancheri N M., Lin A., Willet N J., Padmanabhan A K, Agarwal R., 2024 (currently in review in *Journal of Materials Chemistry B*)
- Dravid A.A., Dhanabalan K.M., Naskar S., Vashistha A., Agarwal S., **Padhan B.**, Dewani, M. and Agarwal, R., *Journal of Biomedical Materials Research Part A*, 2023
- **Padhan B.**, Poddar K., Sarkar D., Sarkar A., *Biotechnology Reports*, 2021
- Poddar K., **Padhan B.**, Sarkar D., Sarkar A., *SN Applied Sciences*, 2021
- Gupta N., Poddar K., Sarkar D., Kumari N., **Padhan B.**, Sarkar A., *Journal of Environmental Management*, 2019
- Prajapati S., **Padhan B.**, Amulyasai B., Sarkar A., Nanotechnology-based sensors, *In: Biopolymer Based Formulations*, Book chapter, [Chapter 11](#), 2020

Poster Presentations

- **WBC 2024:** 12th World Biomaterial Congress 2024, Daegu, South Korea, “Growth factor delivery through in situ crosslinking hydrogel for the treatment of osteoarthritis”.
- **Symposium, BE 2024:** 10th Annual Symposium, BE, IISc, “Growth factor delivery through in situ crosslinking hydrogel for the treatment of osteoarthritis”
- **Symposium, BE 2023:** 9th Annual Symposium, BE, IISc, “Growth factor delivery through in situ crosslinking hydrogel for the treatment of osteoarthritis”
- **ICBSEE 2018:** International Conference on Bioprocess for Sustainable Environment and Energy, NIT Rourkela, “Microbial pigment production”.

Skills

- **Laboratory:** Animal handling, mammalian and bacterial cell culture, DNA and RNA isolation, Agarose Gel Electrophoresis, SDS-PAGE, PCR, Fluorescence microscopy
- **Software:** MS office, GraphPad, Adobe Illustrator, AutoDock, Design-Expert
- **Language:** Proficient in English, Hindi and Odia

Experience as Teaching assistant

- **August-December 2024:** TA for ‘Drug delivery: Principles and Applications’, BE, IISc
- **Jan-March 2024:** TA for NPTEL course ‘Biointerface Engineering’
- **July-October 2023:** TA for NPTEL course ‘Drug delivery: Principles and Engineering’

Achievements and Extra-curriculars

- **Participated in** outreach for Science for Rural India, Mandya district, Karnatka.
- **Organized** Open Day at Indian Institute of Science, **2024**
- **Prime Minister’s Research Fellowship**, Ministry of Education, Government of India, 2023
- **Participated in** Open Day and gave demonstration to school students at Indian Institute of Science, **2023**
- **Qualified** Graduate Aptitude Test in Engineering (**GATE BT**) with AIR 252, 2021
- **Member** of the Public Relations team of Research Conclave 2020, IIT Guwahati.
- **Student Mentor** at **Institute Counselling Services** during the academic session 2018-2019.
- **Core Member** of the organizing team of “**ICBSEE 2018**” conference in NIT Rourkela.
- **Member** of **AKRITI** (the official art and craft club of NIT Rourkela) from 2016-2019.
- **National Service Scheme (NSS) Volunteer** during the 2015-16 academic session.
- **Most Diligent Student Award** by DAV Public School, ITPS Banharpali, Odisha, India in 2015.
- **Olympiads:** International rank of 692 in International English Olympiad 2014 and 160 in National Science Olympiad 2012.
- **Block Chhatramani** title awarded in Orissa State Talent Search Examination, 2009
- **Runner-up** in the All-Orissa UCMAS Abacus and Mental Arithmetic Competition, 2008