



**SHREYASI MAJUMDAR**  
**M.Pharm., Ph.D.**

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### Career objective

*To leverage my expertise in neuropathic pain research and inorganic pharmacological treatment strategies, combined with my extensive involvement in Alzheimer's disease studies utilizing in vivo and in vitro techniques, to contribute to innovative therapeutic advancements and improve patient outcomes in neuroscience and pharmacology.*

### Academic profile

Degree	Department/School/College	Board/University	Percentage/CGPA
Ph.D. (Pharmacology)	Department of Pharmaceutical Engineering & Technology	Indian Institute of Technology (BHU), Varanasi	10.0
M.Pharm (Pharmacology)	Department of Pharmaceutical Engineering & Technology	Indian Institute of Technology (BHU), Varanasi	9.9
B. Pharm	NSHM Knowledge Campus, Kolkata	MAKAUT (WBUT), India	9.5
XII	Mount Assisi School, Bhagalpur	ISC	78.83
X	Carmel School, Bhagalpur	ICSE	86.71

### PROFESSIONAL APPOINTMENTS

- August, 2017-May, 2018: Assistant Professor, Bengal College of Pharmaceutical Sciences & Research, Durgapur, West Bengal, India

### Honors, awards, & activities

- Awarded DST- INSPIRE Fellowship (2018-2023) by the Government of India.
- GPAT-2015 Qualified (rank): AIR 585
- Gold Medalist in M. Pharm (2017), Indian Institute of Technology (BHU), Varanasi, India.
- Gold Medalist in B. Pharm (2015), MAKAUT (formerly WBUT), West Bengal, India.
- Published and presented poster on "Inorganic Biomaterial and its role in the treatment of Neuropathic Pain" in IBRO-ARPC workshop on "Molecular Basis of Neuroinflammation Mediated Neurodegeneration", 2019.
- Published and presented poster on "Cerebral ischemia, its animal models and assessment" in IBRO, 2017.
- Best academic performances for three consecutive years (2013-2015) in B. Pharm.
- Presented poster in IPSCON, WB 2015 "HSP20 and Rho kinase: NOVEL TARGETS FOR ASTHMA TREATMENT".
- Participated in 11th National Science Olympiad, 2008 (AIR)- 1153

## Technical skills

### In-vitro/In-vivo techniques:

- Cell culture
- Animal handling
- Behavioral assessments
- Immunohistochemistry
- Histology
- Molecular biology techniques: Western blot, ELISA, RNA/DNA Isolation, PCR
- In-vivo and in-vitro Electrophysiology techniques
- Sol-gel synthesis of biomaterials and their characterization

### Animal models and software:

- Chronic constriction injury and complete sciatic nerve transection model of Neuropathic pain
- Frost bite and excision model for wound injury
- Streptozotocin-induced diabetes mellitus
- Acute and subacute toxicity study model
- Pharmacokinetics and biodistribution study model
- Bioinformatics and Proteomics (GO, KEGG, IPA)
- Network pharmacology
- Graph pad prism, G power analysis, Origin, Biorander, SR plot, IPA

## Research interests

- Neuropharmacology, Neuropathic pain, Neurodegenerative disorders, Ethnopharmacology, Wound healing, Biomaterials, and Tissue engineering

## Patents

- Indian patent application files “A Bioactive Glass Scaffold and A Method of Preparation Thereof” (201711035474, 06/Oct/2017).
- Indian patent granted “Bioactive Glass Scaffold and A Method of Preparation Thereof” (Patent no. 484408; date of approval- 18.12.2023)

## Publications

- Prajapati SK, **Majumdar S**, Murari S, Vadak K, Krishnamurthy S. Neurochemical, Neurocircuitry, and Psychopathological Mechanisms of PTSD: Emerging Pharmacotherapies and Clinical Perspectives. ACS Chemical Neuroscience. 2025 Jun 10.
- **Majumdar S**, Tiwari A, Mallick D, Patel DK, Trigun SK, Krishnamurthy S. Oral Release Kinetics, Biodistribution, and Excretion of Dopants from Barium-Containing Bioactive Glass in Rats. ACS omega. 2024 Jan 31.
- Sabbarwal S, **Majumdar S**, Verma VK, Srivastava P, Nawaz A, Singh V, Koch B, Krishnamurthy S, Kumar M. Room-Temperature-Stabilized Alpha Tin Nanocrystals for In Vivo Toxicology Evaluation and Photothermal Therapy Corroborated by FFT Modeling. ACS Applied Materials & Interfaces. 2024 Dec 16;17(1):140-56.
- Mitra R, Kumar S, Chaudhuri A, **Majumdar S**, Krishnamurthy S, Agrawal AK, Raja Ayyannan S. Design and Synthesis of S-Acetophenylhydrazones of 5-Methyl-1, 3, 4-Thiadiazole-2-Thiol as SHP2 Inhibitory Agents. Chemistry & Biodiversity.:e202402997.
- Tekam CK, **Majumdar S**, Kumari P, Prajapati SK, Sahi AK, Singh R, Krishnamurthy S, Mahto SK. Effects of extremely low-frequency (50 Hz) electromagnetic fields on vital organs of adult Wistar rats and viability of mouse fibroblast cells. Radiation Protection Dosimetry. 2025 Feb;201(2):88-104.
- **Majumdar S**, Krishnamurthy S. In vivo toxicological evaluation of barium-doped bioactive glass in rats. Ceramics International. 2022 Nov 15;48(22):33288-305.
- **Majumdar S**, Gupta S, Krishnamurthy S. Multifarious applications of bioactive glasses in soft tissue engineering. Biomaterials Science. 2021;9(24):8111-47.
- **Majumdar S**, Hira SK, Tripathi H, Kumar AS, Manna PP, Singh SP, Krishnamurthy S. Synthesis and characterization of barium-doped bioactive glass with potential anti-inflammatory activity. Ceramics International. 2021 Mar 1;47(5):7143-58.
- Ramakrishna K, Sinku S, **Majumdar S**, Singh N, Gajendra TA, Rani A, Krishnamurthy S. Indole-3-carbinol ameliorated the thioacetamide-induced hepatic encephalopathy in rats. Toxicology. 2023 Jun 15;492:153542.
- Tekam CK, **Majumdar S**, Kumari P, Prajapati SK, Sahi AK, Shinde S, Singh R, Samaiya PK, Patnaik R,

Krishnamurthy S, Mahto SK. Effects of ELF-PEMF exposure on spontaneous alternation, anxiety, motor co-ordination and locomotor activity of adult wistar rats and viability of C6 (Glial) cells in culture. Toxicology. 2023 Feb 1;485:153409.

- Manzoor S, Prajapati SK, **Majumdar S**, Khurana S, Krishnamurthy S, Hoda N. Pharmacological Investigations of Selected Multitarget-Direct Ligands for the Treatment of Alzheimer's Disease. ChemistrySelect. 2022 Oct 13;7(38):e202200975.
- Khare D, **Majumdar S**, Krishnamurthy S, Dubey AK. An in vivo toxicity assessment of piezoelectric sodium potassium niobate [Na<sub>x</sub>K<sub>1-x</sub>NbO<sub>3</sub> (x= 0.2–0.8)] nanoparticulates towards bone tissue engineering approach. Biomaterials Advances. 2022 Sep 1;140:213080.
- Kumar DN, Chaudhuri A, Dehari D, Shekher A, Gupta SC, **Majumdar S**, Krishnamurthy S, Singh S, Kumar D, Agrawal AK. Combination therapy comprising paclitaxel and 5-fluorouracil by using folic acid functionalized bovine milk exosomes improves the therapeutic efficacy against breast cancer. Life. 2022 Jul 28;12(8):1143.
- Gupta S, **Majumdar S**, Krishnamurthy S. Bioactive glass: A multifunctional delivery system. Journal of Controlled Release. 2021 Jul 10;335:481-97.
- **Majumdar S**, Gupta S, Prajapati SK, Krishnamurthy S. Neuro-nutraceutical potential of Asparagus racemosus: A review. Neurochemistry international. 2021 May 1;145:105013.
- Yadav S, **Majumdar S**, Ali A, Krishnamurthy S, Singh P, Pyare R. In-vitro analysis of bioactivity, hemolysis, and mechanical properties of Zn substituted calcium zirconium silicate (baghdadite). Ceramics International. 2021 Jun 1;47(11):16037-53.
- Manzoor S, Prajapati SK, **Majumdar S**, Raza MK, Gabr MT, Kumar S, Pal K, Rashid H, Kumar S, Krishnamurthy S, Hoda N. Discovery of new phenyl sulfonyl-pyrimidine carboxylate derivatives as the potential multi-target drugs with effective anti-Alzheimer's action: Design, synthesis, crystal structure and in-vitro biological evaluation. European Journal of Medicinal Chemistry. 2021 Apr 5;215:113224.
- Hossain SS, Yadav S, **Majumdar S**, Krishnamurthy S, Pyare R, Roy PK. A comparative study of physico-mechanical, bioactivity and hemolysis properties of pseudo-wollastonite and wollastonite glass-ceramic synthesized from solid wastes. Ceramics International. 2020 Jan 1;46(1):833-43.

#### **BOOK CHAPTERS:**

- **Majumdar S**, Gupta S, Krishnamurthy S. Bioactive glass: soft tissue reparative and regenerative applications. Bioactive Glasses and Glass-Ceramics: Fundamentals and Applications. 2022 Aug 2:479-517.

#### **Research projects**

- Role of Bioactive glass in the treatment of Neuropathic pain (M. Pharm Project).
- The neuroprotective role of barium and zinc-doped biomaterial in peripheral nerve injury (Proposal for DST- INSPIRE Fellowship).
- Novel calcium-modulating mechanism of barium-doped material for the treatment of neuropathic pain (Ph.D. Thesis)

#### **Funded projects**

- "In Vivo Dermal Toxicity and In Vitro Cyto-and Biocompatibility Assay of Nano Sponge-Adorned Bigel Containing Pentoxifyline and Ibuprofen for Frostbite Wound Healing"; SEED Fund Research grant-Adamas University; Rs 1,60,000/-2024-25 (Co-PI).
- "Smart ace 3D natural polymeric dressing: A regenerative alternative for Diabetic Fppt Ulcers (DFU) management"; SEED Fund Research grant-Adamas University; Rs 1,99,000/-2024-25 (Co-PI).

#### **Declaration**

I hereby declare that the above-mentioned information is correct up to my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.

Place: Varanasi, India

Date: 30.8.2025

(Dr. Shreyasi Majumdar)