Dr. Prakash Chandra

Assistant Professor
Department of Biotechnology
Delhi Technological University
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Academic Profile

Ph.D. - Kongju National University, Kongju-Si, South Korea

Thesis title- Development of Biomimetic Microstructured Scaffold for Tissue Engineering Applications.

M.Sc. - Jamia Hamdard, Hamdard University, New Delhi

Research Experience:

1. Kongju National University, Kongju-Si, South Korea.
2. Institute of Nuclear Medicine and Allied Science (D.R.D.O) Delhi.
3. Torrent Pharmaceutical LTD, Gujarat.

Area of Research:

1. Nanobiotechnology
2. Tissue Engineering
3. Development of Biomimetic Microstructured Scaffolds
4. Nanotoxicology
5. Biomicrofluidics

Award and achievements

1. Commendable Research Excellence award by Delhi Technological University New Delhi -2022
2. Commendable Research Excellence award by Delhi Technological University New Delhi -2023
3. Commendable Research Excellence award by Delhi Technological University New Delhi -2024

List of publications (in peer-reviewed Journals)

1. Growth and Migration of BALB/3T3 Fibroblast Cells on Nano-engineered Silica Beads Surface, Bull. Korean Chem. Soc. 2013, Vol. 34, No. 12, 3715, Jihee Kim, Prakash Chandra, Jiyoon Yang, and Seog Woo Rhee.
2. Enhanced Upconversion Luminescence in NaGdF4:Yb,Er Nanocrystals by Fe^{3+} Doping and their Application for Bioimaging, Nanoscale. 2013, 5, 8711, Parthiban Ramasamy, Prakash Chandra, Seog Woo Rhee and Jinkwon Kim.
3. Quantitative Analysis of Growth of Cells on Physicochemically Modified Surfaces, Bull. Korean Chem. Soc. 2013, Vol. 34, No. 2, 524, Prakash Chandra, Jihee Kim, and Seog Woo Rhee.

4. *In vitro* Models, Endpoints and Assessment Methods for the Measurement of Cytotoxicity, Toxicol. Environ. Health. Sci. 2010, Vol. 2(2), 87, Sanjeev Kumar Mahto, Prakash Chandra & Seog Woo Rhee.
5. Experimental Studies on Mechanical Properties of Metal Matrix Composites Reinforced with Natural Fibres Ashes, SAE Technical Paper, doi:10.4271/2019-01-1123,2019, Ravi Butola, Aahan Malhotra, Mukesh Yadav, Ranganath Singari, Qasim Murtaza, Prakash Chandra.
6. Ovarian Cancer: Potential biomarkers and nanotechnology based diagnostic tools, Advances in Natural Sciences: Nanoscience and Nanotechnology 2021 Oct 4;12(3):033001, Shruti Sounkaria, Prakash Chandra.
7. Two decades of friction stir processing–a review of advancements in composite fabrication, Journal of Adhesion Science and Technology, 2022 Apr 18;36(8):795-832, R Butola, D Pandit, C Pratap, P Chandra.
8. Fabrication and multi-objective optimization of friction stir processed aluminium based surface composites using Taguchi approach, Surface Topography: Metrology and Properties, 2021 Jun 24;9(2):025044, R Butola, P Chandra, K Bector, RM Singari.
9. Fabrication and Characterization of AA6063/B4C Metal Matrix Surface Nanocomposite Using Friction Stir Processing. ECS Journal of Solid State Science and Technology. 2022 Mar 24;11(3):033010, Pratap C, Chandra P, Butola R, Shukla A.
10. Assessing the Nanoparticle Reducing Potential of Medicinal Plant in Ghana, International Journal of Advances in Science, Engineering and Technology(IJASEAT), 2022 pp. 49-64, Volume-10,Issue-3, Biney Eric ,Prakash Chandra.
11. A comparative study of particulate matter between New Delhi, India and Riyadh, Saudi Arabia during the COVID-19 lockdown period. Frontiers in Environmental Science. 2022:750, Singh BP, Eldesoky GE, Kumar P, Chandra P, Islam MA, Rahman S.
12. Distribution and temporal variation of total volatile organic compounds concentrations associated with health risk in Punjab, India, Case Studies in Chemical and Environmental Engineering, Volume 8, 100417, 2023 Bhupendra Pratap Singh, Manoj Singh, Yashmita Ulman, Urvashi Sharma, Rashmi Pradhan, Jagruti Sahoo, Sibani Padhi, Prakash Chandra, Monika Koul, Prem Narayan Tripathi, Dinesh Kumar, Jamson Masih.
13. Phytochemical-Based Synthesis of Silver Nanoparticle: Mechanism and Potential Applications. *BioNanoSci.* 13, 1359–1380 (2023), Ritu, Verma, K.K., Das, A., Chandra P.
14. The Prognosis of Cancer Depends on the Interplay of Autophagy, Apoptosis, and Anoikis within the Tumor Microenvironment. *Cell Biochem Biophys* **81**, 621–658, 2023, Gulia, S., Chandra, P. & Das, A.
15. Antibiotics and nano-antibiotics in treatment of lung infection: In management of COVID-19,Microbial Pathogenesis, Volume 184, 2023, 106356. Sushant Sunder, Kriti Bhandari, Shruti Sounkaria, Manjari Vyas, Bhupendra Pratap Singh, Prakash Chandra.
16. Cholinergic side Effect Free anticancer drugs: paving the way for safer and more effective cancer treatment." *Journal of Biomolecular Structure and Dynamics* 2023: 1-17, Ritu, Prakash Chandra, and Asmita Das.
17. Immune checkpoint targeting antibodies hold promise for combinatorial cancer therapeutics. Clinical and Experimental Medicine. 2023 Dec;23(8):4297-4322. Ritu, Chandra P, Das A.
18. Development of Conducting Biopolymer-Based Biosensor for Heavy-Metal Ion Detection." *ECS Journal of Solid State Science and Technology* 12, no. 11, 2023: 117001, Dutta, Shreya, Ravi Butola, Bhupendra Pratap Singh, and Prakash Chandra.
19. Electro-active conduits for Neuro-regeneration: A step ahead, Regenerative Engineering and Translational Medicine, 2024, **10**, 387–399, Regen. Eng. Transl. Med. Ishika Gulati, Kumar Satyam, Prakash Chandra.
20. Natural Compound Dioscin Targeting Multiple Cancer Pathways through its High Affinity Binding to B Cell Lymphoma-2. 2024, *Current Computer-aided Drug Design*. Gulia, S., Chandra, P. and Das, A.
21. Autophagy: a necessary evil in cancer and inflammation. *3 Biotech*, *14*(3), p.87, 2024.

Mathur, A., Ritu, Chandra, P. and Das, A.

22. Combating anoikis resistance: bioactive compounds transforming prostate cancer therapy, 2024 *Anti-Cancer Drugs*, pp.10-1097.Gulia, S., Chandra, P. and Das, A.
23. Revolutionizing Acute Myeloid Leukaemia Treatment: Exploring and Unraveling IPSC Technology for Personalized Medicine as well as Therapies, 2024, *Journal of Applied Engineering and Technology*, 5, S4, 82-91, Tungalan Ganbaatar, Rachael Kabichi, Dr. Prakash Chandra
24. An insight into impact of nanomaterials toxicity on human health. 2024 *PeerJ* 12:e17807 Qamar W, Gulia S, Athar M, Ahmad R, Imam MT, Chandra P, Singh BP, Haque R, aHassan MI, Rahman S. https://doi.org/10.7717/peerj.17807
25. Seasonal Variation of Aerosol Distribution and Optical Depth over the Indo-Gangetic Belt. *Russian Meteorology and Hydrology* 49, no. 10 (2024): 896-903.Kumar, B., B. P. Singh, P. Chandra, A. Yadav, V. Singh, and J. Masih.
26. Cholinergic side Effect-Free anticancer drugs: paving the way for safer and more effective cancer treatment." *Journal of Biomolecular Structure and Dynamics* 42, no. 23 (2024): 13042-13058, Ritu, Prakash Chandra, and Asmita Das.
27. Tribological Behavior of Friction-Stir-Processed Nanocomposite Prepared Through Self-Assembled Monolayer Technique, *ECS Journal of Solid State Science and Technology* 14, no. 1 (2025): 013009, Chandra, Prakash, and Ravi Butola.

Chapters in Books

1. Bhowal B, Chandra P, Saxena SC. (2021) Engineering Glycine Betaine Biosynthesis in Alleviating Abiotic Stress Effects in Plants, [Chapter 4]. In: *Compatible Solutes Engineering for Crop Plants Facing Climate Change*. Springer, Cham. pp. 97-127.
2. Gulia S, Kothari V, Rastogi Verma S, Das A, Singh BP, Chandra P (2023) Bioremediation of PAHs using nanotechnology [Chapter 11]. In: *Nanobiotechnology for Bioremediation: Fundamentals and Mechanisms*, Elsevier, pp. 249-272
3. Ritu, Sounkaria S, Sachdeva G, Das A, Rastogi Verma S, Saxena SC, Singh BP, Rahman S, Chandra P (2023) Potentialities of nanobiotechnology in nutrient management in the livestock products [Chapter 6]. In: *Nanobiotechnology for the Livestock Industry*, *Animal Health and Nutrition*, Elsevier, pp. 111-137
4. Ritu, Apoorv U Nair, Simran Sharma, Asmita Das, Prakash Chandra (2024) Nanotechnological aspects and future perspective of nanocoatings for medical devices and implants [Chapter 12]. In: *Next-Generation Antimicrobial Nanocoatings for Medical Devices and Implants*, Elsevier. Pp. 251-281.
5. Ritu, Bharmjeet, Nida-e-Falak, Asmita Das, Rahul Gupta and Prakash Chandra, (2024) Nanoscience in controlled drug release in the gastrointestinal tract. [Chapter 3]. In: Nanobiotechnology and Artificial Intelligence in Gastrointestinal Diseases, IOP Publishing Ltd, pp. 3-33
6. Gulia, Shweta, Simran Singh, Nida E. Falak, Bhupendra Pratap Singh, Ravi Butola, Asmita Das, and Prakash Chandra. "Sensors for monitoring global deposition of pollutants in aquatic ecosystems." In *Sensors for Marine Biosciences: Next-generation sensing approaches*, pp. 2-1. Bristol, UK: IOP Publishing, 2025.

Conference and Proceedings

1. Microfluidic Technology Based Body-on-a-Chip for Drug Discovery and Microfluidic Mediated Nano-Drug Delivery Systems Rashi Sharma, Tiya Verma & Dr. Prakash Chandra, 4th Edition of Euro=Global Conference om Biotechnology and Bioengineering, 23-24th April, 2024**.**
2. Revolutionizing Acute Myeloid Leukaemia Treatment: Exploring and Unraveling IPSC Technology for Personalized Medicine as well as Therapies Tungalan Ganbaatar, Rachael Kabichi, Dr. Prakash Chandra National Conference on BioTechnology and BioMedicines (NCBB - 24) 20th April 2024.

3. Kratika Singh, Bidisha Bhowal, Ritu, Saurabh Chandra Saxena, Prakash Chandra, "Green Synthesis and characterization of Silver Nanoparticles using *Shewanella putrefaciens* and its antimicrobial activity", National Conference on Bioentrepreneurship Academia to Industry Shaheed Rajguru College of Applied Sciences for Women, 23 - 24 February 2023
4. Rishabh Kohli, Krishan kumar verma, Saurabh C saxena, Prakash Chandra, " Smart Dressing For Wound Healing", CAMNP-2019 International Conference on Atomic, Molecular, Optical and Nano Physics with Applications, Delhi Technological University, New Delhi-110059. 19.12.2019
5. Aditi singh, Prakash Chandra, Saurabh C saxena, Jai Gopal Sharma, "Green synthesis of extracellular copper and silver nanoparticles from novel bacterial strains *Bacillus oleronius* sp. Ep1 and Stenotrophomonas sp. RT3 for their antibacterial activity ", CAMNP-2019 International Conference on Atomic, Molecular, Optical and Nano Physics with Applications, Delhi Technological University, New Delhi-110059. 19.12.2019 [**Best Presentation Award**]
6. Ramasamy, P.; Chandra, P.; Rhee, Seog Woo; Kim, Jinkwon "Synthesis and bioimaging of highly luminescent upcorversion nanocrystals of Fe^{3+} doped NaGdF4:Yb,Er", 4th International Conference on Colloid Chemistry and Physicochemical Mechanics, Moscow, Russia, 2013.06.30-2013.07.05
7. PRAKASH CHANDRA, Seog Woo Rhee, "Synergistic effects of biomimetic micropatterns of AgNP-gelatin biocomposites on epidermal wound healing", Proceedings of the 111th Annual Meeting of the Korean Chemical Society KINTEX (Korea International Exhibition Center), Goyang, South Korea, 2013.04.17.
8. PRAKASH CHANDRA, Kang Mie Seon, Seog Woo Rhee, "Cell –Surface Interaction and Cell Behavioral Study on Topologically Modified Surfaces", Proceedings of the 108th Annual Meeting of the Korean Chemical Society, Daejeon Convention Center, Daejeon, South Korea, 2011.09.29
9. P. Chandra, S. K. Mahto, S.W. Rhee, "Assessment of Cell-Surface Interaction on Physicochemically Modified Surfaces", Proceedings of the 106th Annual Meeting of the Korean Chemical Society, Daegu, South Korea, 2010.10.14.

FDP and Workshop attended

1. TEQIP-II sponsored Faculty Development Program on 'Recent Advances and Challenges in Power and Energy for Sustainable Growth' organized by the Department of Electrical Engineering at Delhi Technological University, Delhi, June 1-5, 2015
2. TEQIP-II sponsored Faculty Development Program on "Research and Publications" organized by the Department of Humanities at Delhi Technological University, July 25-29, 2016
3. TEQIP-III sponsored Faculty Development Program on "Recent developments in translational medicines (RDTM-2018)" organized by the Department of Biotechnology at Delhi Technological University, March 12-16, 2018
4. TEQIP-III sponsored Faculty Development Program on "Advances in Surface Engineering" organized by the Department of Mechanical Engineering at Delhi Technological University. May 1-5, 2018
5. TEQIP-III sponsored Faculty Development Program on "Polymer Analysis and applications: Current Scenario" organized by the Department of Applied Chemistry at Delhi Technological University. June 4-8, 2018
6. TEQIP-III sponsored Faculty Development Program on "Machine Learning for Pattern Recognition" organized by the Department of Information Technology at DTU, Delhi with twinning partner MITS, Gwalior, june 10-14,2019
7. e-FDP cum Training Workshop on "Environment, Water and Disaster Risk Reduction' organized by Sharda University, NCR and National Institute of Disaster Management, Ministry of Home Affairs, New Delhi, July 13-17, 2020
8. e-FDP cum workshop on 'Waste to Bioenergy' organized online by Sharda University, NCR and Maharashtra Institute of Technology, Aurangabad, June 28 to July 04, 2020

9. FDP on ‘Outcome Based Education and Accreditation’ organized online by IILM College of Engineering & Technology, Greater Noida, May 25-29, 2020
10. International Conference on ‘Innovations in Biotechnology and Life Sciences (ICIBLS 2020)’ organized by Department of Biotechnology, DTU, Delhi, Dec 18-20, 2020
11. International E-workshop on ‘Bioinformatics’ organized by Department of Biotechnology, DTU, Delhi, Dec 14-18, 2020
12. Training on G-Suite for Education organized by Techno @Team. July 4, 2020
13. Workshop on ‘Empowering Teaching through Online Mode IV’ (WETOM IV) organized for University / College teachers by Jawaharlal Nehru University, Delhi, July 11-12, 2020
14. AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Clean Energy Manufacturing: Transformation for Sustainable Development" from 04-10-2021 to 08-10-2021 at DELHI TECHNOLOGICAL UNIVERSITY.