Curriculum Vitae

MUKESH KUMAR MEHER



Mukesh Kumar Meher - Google Scholar
https://orcid.org/0000-0002-2285-8003

Email: mehermu2@msu.edu

RESEARCH INTERESTS:

Nano-/Biomaterials, Nano-biotechnology, Nanomedicine, Drug/gene delivery, Cancer therapy, Bioimaging, Nano-Bio interactions, and allied fields.

EDUCATION:

- **Ph.D. (Biosciences and Bioengineering)** 2017- 2023,

Department of Biosciences and Bioengineering, Indian Institute of Technology Roorkee, Uttarakhand, India

- **M. Tech (Nanotechnology)** 2015-2017,

Centre for Nanotechnology, Indian Institute of Technology Roorkee, Uttarakhand, India

- **B. Tech (Bioinformatics)** 2010-2014,

Amity Institute of Biotechnology, Amity University, Noida, Uttar Pradesh, India

NATIONAL LEVEL EXAMS QUALIFIED:

- GATE 2015 & GATE 2017 qualified in Biotechnology (BT).
- JAM 2015 qualified in Biological science (BL).

INTERNSHIP & TRAINING:

- Hands-on training workshop on "**Basic Cell Culture Technology**" October 21st- 24th, 2019 at Cell Repository, National Centre for Cell Science, Pune
- **M.Tech Dissertation Project**: "Synthesis characterization and biological applications of Heparinized silver nanoparticles" Department of Biotechnology, IIT Rookee during July 2016- May 2017
- Short term training program (STTP) on "**Nanoscience and Nanotechnology"** 06-10th July 2016, Department of Chemical Engineering, VNIT, Nagpur
- **B.Tech Dissertation Project**: "Molecular modeling and Drug designing for Lower Urinary Tract Symptoms(LUTS)" at Amity Institute of Biotechnology during March-May 2014

Curriculum Vitae

PUBLICATIONS:

Research & Review Articles

1. **Meher, M. K.**, Naidu, G., Mishra, A., & Poluri, K. M. **(2024)**. A review on multifaceted biomedical applications of heparin nanocomposites: Progress and prospects. ***International Journal of Biological Macromolecules***, 129379.
2. **Meher, M. K.**, Unnikrishnan, B. S., Tripathi, D. K., Packirisamy, G., & Poluri, K. M. **(2023)**. Baicalin functionalized PEI-heparin carbon dots as cancer theranostic agent. ***International Journal of Biological Macromolecules***, 126846.
3. **Meher, M. K.**, & Poluri, K. M. **(2022)**. Bifunctional Dalteparin/Enoxaparin coated nanosilver formulation to prevent bloodstream infections during hemodialysis. ***Carbohydrate Polymers***, 119546.
4. **Meher, M. K.**, & Poluri, K. M. **(2021)**. Anticoagulation and antibacterial properties of heparinized nanosilver with different morphologies. ***Carbohydrate Polymers***, 266, 118124.
5. Gupta, P., Goel, A., Singh, K. R., **Meher, M. K.**, Gulati, K., & Poluri, K. M. **(2021)**. Dissecting the anti-biofilm potency of kappa-carrageenan capped silver nanoparticles against Candida species. ***International Journal of Biological Macromolecules***, 172, 30-40.
6. Chaturvedi, A., Pranjali, P., **Meher, M.K.**, Raj, R., Basak, M., Singh, R.K., Poluri, K.M., Kumar, D. and Guleria, A. **(2020)**. In vitro and ex vivo relaxometric properties of ethylene glycol coated gadolinium oxide nanoparticles for potential use as contrast agents in magnetic resonance imaging. ***Journal of Applied Physics***, 128(3), 034903.
7. Joshi, K. [#], **Meher, M. K.** [#], & Poluri, K. M. **(2020)**. Fabrication and characterization of bioblocks from agricultural waste using fungal mycelium for renewable and sustainable applications. ***ACS Applied Bio Materials***, 3(4), 1884-1892. (*[#]Equal Contribution*)
8. Pranjali, P. [#], **Meher, M. K.** [#], Raj, R., Prasad, N., Poluri, K. M., Kumar, D., & Guleria, A. **(2019)**. Physicochemical and Antibacterial Properties of PEGylated Zinc Oxide Nanoparticles Dispersed in Peritoneal Dialysis Fluid. ***ACS omega***, 4(21), 19255-19264. (*[#]Equal Contribution*)
9. Guleria, A., Pranjali, P., **Meher, M.K.**, Chaturvedi, A., Chakraborti, S., Raj, R., Poluri, K.M. and Kumar, D. **(2019)**. Effect of polyol chain length on proton relaxivity of gadolinium oxide nanoparticles for enhanced magnetic resonance imaging contrast. The ***Journal of Physical Chemistry C***, 123(29), 18061-18070.
10. Goel, A., **Meher, M. K.**, Gupta, P., Gulati, K., Pruthi, V., & Poluri, K. M. **(2019)**. Microwave assisted κ-carrageenan capped silver nanocomposites for eradication of bacterial biofilms. ***Carbohydrate polymers***, 206, 854-862.
11. Guleria, A., **Meher, M. K.**, Prasad, N., Poluri, K. M., & Kumar, D. (**2017**). Physicochemical Transformations of ZnO Nanoparticles Dispersed in Peritoneal Dialysis Fluid: Insights into Nano–Bio Interface Interactions. ***The Journal of Physical Chemistry C***, 121(34), 18598-18607.
12. Gulati, K.[#], **Meher, M. K.**[#], & Poluri, K. M. (**2017**). Glycosaminoglycan-based resorbable polymer composites in tissue refurbishment. ***Regenerative medicine***, 12(4), 431-457. (*[#]Equal Contribution*)

Book Chapters

1. **Meher M.K.** and Poluri K.M. "pH sensitive nanomaterials for smart release of drugs" Intelligent Nanomaterials for Drug Delivery Applications, Elsevier **2020**
2. **Meher M.K.** and Poluri K.M. "Applications of Green Polymeric Nanocomposites" Green Polymeric Nanocomposites, CRC Press **2020**

3. Tripathi D.K., Sarkar S., **Meher M.K. "**Limitations in Commercialization of Green Polymeric Nanocomposites and Avenues for Rectification" Green Polymeric Nanocomposites, CRC Press **2020**
4. Goel A., **Meher M.K.**, Gulati K., and Poluri K.M. "Fabrication of Biopolymer-Based Organs and Tissues Using 3D Bioprinting." 3D Printing Technology in Nanomedicine **(2019)**: 43.

CONFERENCE PRESENTATIONS:

1. "Baicalin loaded heparin carbon: A theranostic approach for cancer" **Best Oral Presentation award** at National Symposium on "Emerging Techniques for the Characterization and Therapeutic Evaluation of Traditional Ayurvedic/Herbal Medicines" at Amity University, Lucknow, February 02-03, **2023**
2. "Biodegradable blocks of Pleurotus ostreatus mycelium for packaging application" **Oral Presentation** at National Web Conference on Mushroom Biology: Opportunities and Challenges, ICAR-Directorate of Mushroom Research, Solan, 15th -17th April **2021**
3. "Heparinized silver nanoparticles for biomedical applications" **Poster presentation** at 1st National biomedical research competition, AIIMS, Rishikesh, 15th October **2018**
4. "Synthesis and characterization of heparinized silver nanoparticles with different morphologies" **Oral Presentation** at International Conference on Emerging Trends in Nanomaterials Science and Technology, NIT, Nagaland, 4th -6th January **2017**
5. "In-silico screening of chemical compounds against rotavirus: An approach for vaccine and drug development" National conference on Energy, Environment, and Biotechnology Research, 5th and 6th October **2012**
6. "Homology modeling and computational characterization of phenol hydroxylase from *Aspergillus niger"* National conference on Energy, Environment, and Biotechnology Research, 5th and 6th October **2012**
7. "Bioinformatics: An environmental perspective". **Poster presentation** at One-day symposium on "Environment and Us", IIT, Guwahati, 5th June **2012**

SKILLS:

- Nanomaterials/Biomaterials design, synthesis and characterizations
- Instruments and techniques: TEM, SEM, AFM, XRD, TGA, FTIR, Zeta, UV-Vis, Fluorescence and NMR spectroscopy, FACS, Optical and FL Microscopy, Microbial/animal cell culture
- Software: MS Office, ImageJ, Topspin, Malvern Zeta, X'pert Highscore, MultiPak, Sigmaplot, Pymol, Schrodinger, Autodock
- Computer Programming Languages (Basic): C, C++, HTML, Oracle, SQL, Perl, Java, Vb.net, R, SAS, Python
- Languages: English, Hindi, Odia, French (Basic)