DEEPA DIXIT, PH.D

R & D SCIENTIST II

CONTACT

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EDUCATION

2014-2020
PhD, Chemical Engineering,
Indian Institute of Technology Gandhinagar

2011-2013
M.Tech. Chemical Engineering
Rajiv Gandhi Technological University Bhopal

2006-2010
B.E. Chemical Engineering
Rajiv Gandhi Technological University Bhopal

SKILLS

- **Advanced Materials**

Polymer packaging, PVC antimicrobial wall covering, smart surfaces, Thermoforming

- **Surface Characterization**

FESEM, XPS, AFM, FTIR, UV-Vis, DLS, IGC, DSA, BET, Microscope, UTM

- **Cell Culture Techniques**

Managing bacterial and mammalian cell cultures using standard assays

- **Surface Science**

Colloid and interface science, wettability, micro/nano scale roughness

- **Project management, data analysis and reporting**

RECOGNITION

- National Post Doctoral Fellowship 2020
- Department Research Associateship 2020 (DBT-RA)
- SITARE Gandhian Young Technology Innovation Award 2020 (GYTIA 2020)
- Chancellor Gold Medal, University Gold Medal (July 2012)

PROFILE

I am diligent and hardworking, with strong adaptability to work effectively in a team. I possess leadership qualities that enable me to take responsibility and deliver results. I have hands-on experience in designing advanced materials, conducting surface characterization, and upscaling products for deployment.

WORK EXPERIENCE

Honeywell, Advanced Material

R&D Scientist II — **FEB 2024 - PRESENT**

- Skilled in the process of manufacturing the pharmaceutical blister packaging into specific shapes using molds.
- Proficient in examining the internal structure of laminated films at a microscopic level to ensure quality and consistency.
- Expertise in the thoroughly performance evaluation of blister packaging using WVTR, UTM, Haze meter, push through etc.
- Effectively resolved customer issues through collaborative teamwork and delivered comprehensive project presentations.

SMITA Research Laboratory, IIT Delhi

Principal Project Scientist — **Dec 2023 - 2024**

- Developed and designed PVC antimicrobial wall coverings for medical environments.
- Evaluated antimicrobial activity, shelf life, and efficacy using advanced instrumentation.
- Conducted data analysis and reporting, wrote patents, and mentored undergraduate and graduate students.
- Managed upscaling, marketing, and field trials of the developed product

Laboratory for Nanoscale Materials & Healthcare Technologies, IIT Delhi, India

National Post-Doctoral Fellow 2020 — **2021 - 2023**

- Developed smart surfaces for high-throughput capture and screening of single cells on demand.
- Investigated the effects of cell type, morphology, concentration, and composition on cell adhesion.
- Conducted data analysis using advanced facilities and prepared reports for peer review.

DBT- Research Associate — **2020 - 2021**

- Designed point-of-care devices with micropatterned surfaces for capturing bacterial and mammalian single cells.
- Managed and worked with bacterial and mammalian cell cultures using standard assays.
- Conducted surface design using a plasma chamber and performed physical and chemical surface characterization/analysis with state-of-the-art facilities

Patent

Chinmay Ghoroi, Deepa Dixit "A Filter for Water Purification and A Process for Its Manufacture" Status: Granted on 25/05/2022, Patent No. 397587 (Application No. 201921034896)

Research Publications and Conferences

- *Deepa Dixit, Shreya Bunk, Ramkrishna Rane, Chinmay Ghoroi "Influence of Ar plasma treatment on the wetting behavior of pharmaceutical powders" Advanced Powder Technology 28 (2017) 346–355. (Impact factor- 4.833)*
- *Deepa Dixit, Virupakshi Soppina, Chinmay Ghoroi "A Non-electric and Affordable Surface Engineered Particle (SEP) based Point-of-Use (POU) Water Disinfection System" Scientific Reports volume 9, Article number: 18245 (2019). (Impact factor-4.996)*
- *Deepa Dixit, Chinmay Ghoroi "Role of Randomly distributed Nanoscale Roughness for Designing Highly Hydrophobic Particle Surface without Using Low Surface Energy Coating" Journal of Colloid and Interface Science, 564, (2020), 8-18. (Impact factor-9.965)*
- *Mike H. Bergin, Chinmay Ghoroi, Deepa Dixit, James J. Schaur, and Drew T. Shindell "Large Reductions in Solar Energy Production Due to Dust and Particulate Air Pollution" Environment Science Technology Letter, 4, 8, 339-344 (2017). (Impact factor- 7.653)*
- *Vikram Karde, Deepa Dixit, Chinmay Ghoroi "Adhesion Force Approximation at Varying Consolidation Stresses for Fine Powder under Humid Environmental Conditions" Advanced Powder Technology, Volume 28, Issue 2, Page 346-355, (2017). (Impact factor- 4.833)*
- *G. Jaya Rao, R. Mazumder,, D. Dixit, C. Ghoroi, S. Bhattacharyyaa, P. Chaudhui "Fabrication and characterization of Li4SiO4 pebbles by extrusion spherodization technique: Effects of three different binders" Ceramics International 45, 4022–4034 (2019). (Impact factor- 5.16)*
- *Deepa Dixit, Shreya Bunk, Ramkrishna Rane, Chinmay Ghoroi "Understanding the Surface Chemistry, Surface Roughness and Wettability of Argon Plasma Treated Cornstarch Powder", 2017 AIChE Annual Meeting, Minneapolis, MN, October 29-November 3, 2017 (oral presentation)*
- *Deepa Dixit, Chinmay Ghoroi "Influence of Surface Asperities and Surface Energetics on Wetting Characteristics of Spherical Glass Beads", 2017 AIChE Annual Meeting, Minneapolis, MN, October 29- 3 November 2017 (oral presentation)*
- *Deepa Dixit, Chinmay Ghoroi "Surface Engineering for Designing Superhydrophobic and Superhydrophilic Particulate solids" 8th World Congress on Particle Technology April, 2018, Orlando, USA (Oral Presentation)*
- *Deepa Dixit, Chinmay Ghoroi "Novel surface engineered particles for point-of-use Water disinfection" 3rd International Conference on Applied Surface Science (3rd ICASS), Pisa Italy, June 2019 (Oral Presentation)*
- *Deepa Dixit, Chinmay Ghoroi "Droplet Wetting Behaviour and Bacterial Adhesion Mechanism on the Surface Designed via Photolithography" 3rd International Conference on Applied Surface Science (3rd ICASS), Pisa Italy, June 2019 (Poster Presentation)*

References

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