Faculty Profile:

Name: Dr. Deep Shankar

Designation: Assistant Professor

Experience:

- RNSIT Bengaluru- Assistant Professor – Mechanical Engineering, 3rd Aug 2026- Currently Working
- Orthoseal Private Limited, Mangaluru - Director/CEO, 14th May 2026 - 1st Aug 2026
- MedrinZ BIO Private Limited, FSID, IISc Bengaluru - Product Lead, 14th July 2025 -13th May 2026
- Atria Institute of Technology, Bengaluru, Assistant Professor - Mechanical Engineering, 23rd Sept 2024 – 10th July 2025
- Teaching Faculty at Avanti Learning Centre - Physics Faculty - NEET
- HCC Co. Ltd., AP - Assistant Mechanical Engineer, 6th June 2017 - 29th June 2018

Qualification:

- PhD, Mechanical Engineering- NITK Surathkal, 2024
- M.Tech, Manufacturing Systems Engineering – SLIET, CFTI, Deemed-to-be University, 2017
- BE, Mechanical Engineering, JSSATE Bengaluru, 2014

Specializations (Academic):

- Manufacturing Technology, Casting Processes, Fluid Mechanics, Thermodynamics

Specializations (Research):

- Biomaterials, Coating, Thermal Spray, Ceramics, Nanomaterials, 3d-Printing, Hydrogels, Polymers, Ultra high-temperature ceramic coatings, Medical Devices, Surface Engineering, Materials Characterizations

Publications and Patent:

- Thermal spray processes influencing surface chemistry and in-vitro hemocompatibility of hydroxyapatite-based orthopedic implants, Biomaterials Advances, Elsevier Publication, **Q1**, https://doi.org/10.1016/j.bioadv.2024.213791, IF – 6.7
- Effect of surface chemistry on hemolysis, thrombogenicity, and toxicity of carbon nanotube doped thermally sprayed hydroxyapatite implant, Biomaterials Science and Engineering, ACS Publication, **Q1**, https://doi.org/10.1021/acsbiomaterials.3c00912, IF – 6
- Improvements in Bioactivity, Blood Compatibility, and Wear Resistance of Thermally Sprayed Carbon Nanotube Reinforced Hydroxyapatite-based Orthopedic Implants, Tribology International, Elsevier Publication, **Q1**, https://doi.org/10.1016/j.triboint.2024.109809, IF – 7.6
- Heterocoagulated CNT-reinforced plasma-sprayed-HA coating for load-bearing orthopaedic applications, Material Letters, **Q2**, https://doi.org/10.1016/j.matlet.2026.141044, IF – 2.7
- From Coating Architecture to Enhanced Osseintegration In Vivo Performance: Reinforced Hydroxyapatite-based Multifunctional Coating for Load-Bearing Orthopaedic Implants, under review, Biomaterials Science and Engineering, ACS Publication, **Q1**, IF – 6
- Indian Patent (Product), Hydroxyapatite-based Composite for Coating Implants and Method thereof, **Granted**. Patent No.: 567780

Awards Received & Accomplishments

- Research work has been highlighted by leading Indian news media: **The Hindu, Times of India, Deccan Herald, and many others** for developing targeted antimicrobial, durable and bioactive coated orthopedic implants, MAY 2026.
- Founded a startup" **ORTHOSEAL PVT. LTD**. In 2025, dealing with thermally sprayed coated medical devices.
- **Best Scholar Award** by Global Scholar Awards, 2024
- Institute Assistance Scholarship for PhD duration from 2019-2023.
- MHRD, Gov. of India, full-time scholarship for M. Tech during 2015-2017.
- Received **merit certificate** from CBSE board for scoring century in one of the subjects, 2007.

Research Funding & Proposal Development

- Wadhwani Foundation – 1Cr for startup, Final stage (under process)
- Karnataka Elevate, ASPIRE - 2026 – 50 Lacs for startup (under process)

Academic Outreach & Professional Contributions

- **Technical Talk:** *"Mechanical Engineering in Biomedical Innovations: A Multidisciplinary Approach for the Future"*, Atria Institute of Technology, Bengaluru, March 2025.
- **Technical Talk:** *"Mechanical Engineering Meets Healthcare: From Lab to Market"*, Atria Institute of Technology, Bengaluru, May 2026.
- **Invited Speaker:** Global Conference on Recent Advances in Biopolymers and Polymer Science, Paris, October 2025; presented research on physicochemical and surface properties influencing biocompatibility of thermally sprayed composite coatings for orthopedic implants.
- **Invited Contributor:** Global Tech Summit 2025 – *Empowering the Ethical Digital World for Humanity 5.0*, Rajshree Institute of Management & Technology, April 2025.

Supervision and Mentoring

- **M.Tech (PG) Biotechnology Project Supervision (Under Orthoseal), August 2026 - currently going:** Currently supervising and mentoring an M.Tech Biotechnology student for the final-year project titled *"Development of Antibiotic-Loaded Hydroxyapatite-based Composite Coatings for Sustained Orthopedic Infection Control,"* providing guidance on research planning, experimental design, coating development, characterization, data analysis, and scientific reporting.
- **B.Tech (UG) Project Supervision, Institute of Advanced Research, Gandhinagar, January 2025 - May 2026:** Served as an external supervisor and mentor for the B.Tech project *"Development of Antibacterial Coating on Titanium Implants for Orthopedic Application,"* providing technical guidance on biomedical coatings, experimental planning, interpretation of results, and project execution.
- **B.Tech (UG) Project Supervision, Atria Institute of Technology, Bengaluru (2024-2025):** Supervised and mentored a team of undergraduate students in the project *"Optimizing Urban Agriculture Sustainability Using Stack Layer Hydroponics pH and*

TDS Monitoring," guiding them through project conceptualisation, experimental work, analysis, and report preparation.

- Mentored undergraduate and postgraduate students in research projects, experimental work and data analysis during PhD tenure.