Advances in Cells

Science Publication Inc.

Editorial Open Access

An interview with Dr. Suresh Naidu

Advances in Cells Editorial Office

Received: August 22, 2025; Accepted: August 22, 2025; Published: August 27, 2025

1. Could you please briefly introduce yourself and your research field? Also, attach a photo, either a portrait or one from your research environment (e.g., laboratory).

I am a research fellow in the Department of Nursing, Faculty of Health Sciences, Durban University of Technology. My research focuses on noncommunicable diseases (diabetes and cancer), green nanotechnology with a strong foundation in pharmaceutical applications, bio-inspired materials, and translational research, with an emphasis on innovative approaches in fields such as probiotics, medicinal plant-based bioactives, and sustainable energy technologies.



Dr. Suresh Naidu

2. What initially sparked your interest in your research field?

During my undergraduate studies in Chemistry, I observed the environmental impact of heavy metal pollution. This experience ignited my curiosity about how we could harness biological systems to create eco-friendly remediation technologies. A summer internship in cell biology introduced me to complex cellular networks and the potent antimicrobial properties of nanosilver, blending my interests in sustainability, materials science, and cell biology.

3. Could you please briefly share your career story with us? And what impressed you most in your research life?

After completing my B.Sc. (Chemistry as major), I pursued an MSc in Biochemistry, where I conducted my first biogenic dye degradation studies using microorganisms. A subsequent PhD at Sri Krishnadevaraya University expanded the work into the isolation and characterisation of proteases for industrial applications.

Key milestones:

- A postdoctoral fellowship at the Department of Biochemistry, University of KwaZulu-Natal (UKZN), where I integrated silver nanoparticles with experimental nanobiology.
- Establishing a groundbreaking research domain that focuses on scalable green nanotechnologies for biomedical applications.
- Significant scientific outputs, strong collaborations, and effective project management.
- Co-PI in Leading a multi-institutional project
- Supervision of postgraduate students (Honors, M.Sc., MTech and PhD)
- Resource person for staff development programs
- Accessor for professional development programs

4. In your opinion, what could be the hot topics in your research field in the coming years?

- AI-guided design of multifunctional nanomaterials that adapt to changing environmental or cellular cues
- Mechanobiological studies of how nanoparticles influence cell fate decisions in tissue engineering
- Sustainable, plant-derived nanocarriers for targeted drug delivery and diagnostics

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- Integration of microfluidic "organ-on-chip" platforms with nanodiagnostics for rapid pathogen detection
- Closed-loop systems combining real-time sensing, data analytics, and adaptive release of therapeutics

5. What valuable suggestions would you like to share with young scholars regarding how to be a professional researcher?

- Cultivate interdisciplinary fluency: read beyond your discipline and attend seminars in adjacent fields.
- Prioritise reproducibility: Develop rigorous protocols and share methods openly.
- Embrace failure as learning: Negative results can redirect research toward higher-impact questions.
- Hone communication skills: Explain complex ideas clearly to both technical and non-technical audiences.
- Building ethical awareness: Consider the environmental, social, and safety implications at every stage.

6. As a scholar, what recent research trends would you suggest are important for keeping up with *Advances in Cells*?

- Open-data platforms enabling large scale meta-analyses of mechanobiology datasets
- Machine learning (ML) frameworks that predict cell–nanoparticle interactions from high-throughput imaging
- Hybrid experimental–computational workflows for multiscale modelling of cellular systems
- Collaborative consortia that standardize protocols for transparent, reproducible cell science
- Preprint and open-peer review models that accelerate dissemination and constructive critique

7. What attracts you to join the editorial board of *Advances in Cells*?

The journal's commitment to integrative, mechanobiological, and computational frontiers perfectly aligns with my research philosophy. I value its open-access model and embrace of both experimental and theoretical contributions. Serving on the board offers the opportunity to shape a platform that fosters true interdisciplinarity and accelerates the translation of cell-level insights into real-world applications.

8. What are your thoughts on the future of *Advances in Cells*, an open-access journal?

Advances in Cells is poised to become a premier venue for cross-disciplinary breakthroughs in cell science. By championing data transparency, novel modelling approaches, and mechanobiology, this journal will drive paradigm shifts in areas from regenerative medicine to environmental biotechnology. I envision it as catalysing a global network of researchers who share methods, data, and conceptual frameworks, ultimately deepening our understanding of cellular complexity and transforming the future of biotechnology.