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Research gate- <https://www.researchgate.net/profile/Shravanya-Gundu/research>

Google Scholar- https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=shravanya+gundu&oq=shrava

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ABOUT ME

I hold a Ph.D. in natural biomaterials scaffolds designed for biomedical and environmental applications, which I completed at the Tissue Engineering and Biomicrofluidics Laboratory within the School of Biomedical Engineering at the Indian Institute of Technology (BHU), India. Currently, I am an Assistant Professor in the Department of Biomedical Engineering, University College of Engineering, Osmania University, Hyderabad, Telangana, India, with 11 years of teaching experience in areas such as biomedical equipment, prosthetic engineering, cell and tissue engineering, and biomaterials.

I possess extensive hands-on experience in various scaffold fabrication techniques, including lyophilization, 3D bioprinting, electrospinning, and material characterization methods. During my doctoral research, I developed 3D scaffolds using both lyophilization and hand lay-up approaches with a range of natural and synthetic biomaterials, including Luffa cylindrica, Psyllium husk, Silk fibroin, Hydroxyapatite, and Gelatin. These efforts were focused on developing bio-scaffolds that exhibit enhanced tissue compatibility.

EDUCATION

- **Ph.D. (2023)** at Tissue Engineering and Biomicrofluidics Laboratory School of Biomedical Engineering, Indian Institute of Technology (BHU), Varanasi, India.

(Supervisor- Dr. Sanjeev Kumar Mahto).

Dissertation: Development of Luffa Cylindrica-based Scaffolds for Biomedical and Environmental Applications.

- **MS (Master of Science) (2009)** at Keele University, Staffordshire, United Kingdom.

(Supervisor- Prof. Ying Yang).

Dissertation: Development Of Online pH Monitoring Sensor For Biological Systems

- **B.Tech (2007)** at Jawaharlal Nehru Technological University Hyderabad, Telangana, India.-500085,

(Supervisor- Mrs. Elizabeth)

Dissertation: The Future of Patient Monitoring in Healthcare using Telemetry Technologies

PROFESSIONAL EXPERIENCE

- Currently working as an assistant professor at the Department of Biomedical Engineering, University College of Engineering, Osmania University, Hyderabad, Telangana, India from 07 Sep 2013 to till date.
- Previously worked as assistant professor at J.B Institute of Engineering and Technology, Moinabad, Telangana, India from 19 October 2011 to 05 June 2012.
- Also served as assistant professor at Gokaraju Rangaraju Institute of Engineering and Technology, Bachupally, Nizamabad, Telangana, India from 23 November 2012 to 06 September 2013
- Completed a shadowing observation at Nuffield Hospitals, Leeds United Kingdom (UK) from 20 June 2010 to 25 Mar 2011. Worked under the Chief engineer in the Department of Biomedical Engineering and was involved in activities like asset management and record keeping, assisting biomedical engineers, Preventive maintenance and repair of biomedical equipment.
- Undertook professional training at Medwin Hospitals, Hyderabad, India, from 20 May to 20 June, 2006 Hyderabad, India-Professional Training for Biomedical Engineers during which knowledge gained about the importance and also the functioning of various equipment and learned effective strategies for addressing common breakdown issues.

WORKSHOP

- Participated workshop on “3D- Printing and 3D Bio- Printing” jointly organized by NIPER Hyderabad and AVAY Biosciences (23 -24 September 2021).
- Participated in iCBIT BiO-IDEATHON 21 and won first place for presenting the idea on prefilled dual-chamber syringe for drug delivery conducted by the Department of Biotechnology, CBIT, Hyderabad (12 November 2021).
- Actively participated in Idea Exposition on “Innovation in Bioengineering & Healthcare” organized by BIRAC Regional Center (BRIC), in collaboration with IKP and IIT (BHU), Varanasi on October 23-24, 2019 at the School of Biochemical Engineering, IIT (BHU), Varanasi.
- One week workshop on cell processing Technology and engineering- A new paradigm organized by IIT (BHU), Varanasi, Sponsored by AICTE from December 05-10, 2018.
- Short-term course (GIAN course) organized by Dept. of Biological Sciences and Bioengineering, IIT Kanpur, India, during 8-12 April 2019.
- A GIAN course on “Hepatic and Bone Tissue Development for Drug Metabolism and Tissue Engineering”, organized by IIT Kanpur, India, April, 01-05, 2019.

- Short term Course on organized by IIT (BHU), Varanasi, Sponsored by AICTE during December 10 -16 2018.
- Participated in a 5-day workshop on “Cell Processing Technology and Engineering a New Paradigm” organized by the School of Biochemical Engineering, IIT(BHU), Varanasi, India (5 -10 December 2018).
- AICTE sponsored QIP- Short-term course on “Biomems and Bioinstrumentation” organized by School of Biomedical Engineering, IIT (BHU), Varanasi, India (10-16 December 2018).
- “LaTeX for Beginners”, jointly organized by the IEEE IAS student chapter & IEEE student chapter on 06 October 2018.
- Volunteered one-day Brainstorming workshop on establishing “Centre for Advanced Biomaterials and Tissue Engineering” Indian Institute of Technology (Banaras Hindu University), Varanasi, India (on 19, March 2018).
- Volunteered a short-term course on “Tissue Engineering” under the Quality Improvement Programme (QIP) sponsored by AICTE, New Delhi (January. 09-14, 2017).

FACULTY DEVELOPMENT PROGRAM

- Attended a Faculty development program organized by the Dept. of Biomedical Engineering, UCE (A), OU. Hyderabad during 8th -12th November 2022.
- Participated in a Faculty development program organized by the Dept. of Electronics and ICT Academy, IIT Roorkee, 23rd - 27th September 2022
- Attended a Faculty development program organized by the Dept. of Physics, Humanities, and Sciences at Vardhaman College of Engineering, Hyderabad from 7th- 11th February 2022.
- Participated in a Faculty development program organized Dept. of Dept. of Electronics UCE (A), OU. Hyderabad, during 13th-18th December 2021.
- Attended Faculty development program organized by the Dept. of Mechanical Engineering, NIT Warangal, 10- 14 September 2021.
- Attended a Faculty development program organized by the Dept. of Biological Sciences and Bioengineering, IIT Kanpur, India during 2nd - 6th August 2022.
- Participated in an online Faculty development program on “Recent trends in Biomechanics and Bioelectrical Engineering: An Interdisciplinary Approach” organized by the Department of Electrical, Biotechnology and Mechanical Engineering, NIT Warangal (2nd – 6th August 2021).

SKILL ACQUIRED

- **Cellular/Histological:** Cell culture, Tissue histology and Staining.

- **Characterization:** 3D bioprinter, UTM, UV-Visible spectrometer, Electrospinning unit, Lyophilizer, Viscometer, Tensiometer.
- **Imaging:** Bright-field, Inverted Microscope, Stereo zoom Microscope, Fluorescence Microscope.
- **Software:** AutoCAD, Solid works, ImageJ, Matlab.

AREA OF INTEREST

- Biomaterials
- Cell and Tissue Engineering
- Biomedical Equipment
- Diagnostic and Therapeutic Equipment

PATENTS

- Mahto, S.K., Gundu S, Sahi, A. K., Kumari P, “Luffa-PDMS-based Composite Scaffold and a Method of Preparation Thereof”. Application filed to IPR Cell on March 16, 2023 [Application ID: 202311017933]

PUBLICATIONS

In vivo characterization of a luffa-based composite scaffold for subcutaneous implantation in rats

Gundu, S., Sahi, AK., Kumari, p., Tekam, CS., I, Allu., R, Singh., SK, Mahto., Journal of Biomaterials Science Polymer Edition 35(1):1-25, July 2024, DOI: [10.1080/09205063.2024.2363080](https://doi.org/10.1080/09205063.2024.2363080) IF -3.58.

Assessment of various forms of cellulose-based Luffa cylindrica (mat, flakes and powder) reinforced polydimethylsiloxane composites for oil sorption and organic solvents absorption

Gundu, S., Sahi, AK., Kumari, P., Vishwakarma, NK., SK Mahto. International Journal of Biological Macromolecules 240, 124416, 2023. DOI: [10.1016/j.ijbiomac.2023.124416](https://doi.org/10.1016/j.ijbiomac.2023.124416) IF- 8.2

Recent developments of biomaterial scaffolds and regenerative approaches for craniomaxillofacial bone tissue engineering

Gundu S., Varshney, N., Sahi, AK., Mahto SK. 2022, Journal of Polymer Research 29 (3), 1-23. DOI: [10.1007/s10965-022-02928-4](https://doi.org/10.1007/s10965-022-02928-4). If-3.0.

Fabrication and in vitro characterization of luffa-based composite scaffolds incorporated with gelatin, hydroxyapatite and psyllium husk for bone tissue engineering

Gundu, S., Sahi, AK., Varshney, N., Varghese, J., Vishwakarma, NK., Journal of Biomaterials Science, Polymer Edition 33 (17), 2220-2248. 2022, DOI: [10.1080/09205063.2022.2101415](https://doi.org/10.1080/09205063.2022.2101415). IF: 3.58

A Brief Review on Cerium Oxide (CeO₂NPs)-Based Scaffolds: Recent Advances in Wound Healing Applications

Gundu, S., IAllu I, Sahi, Ak., Kumari, P., Sakhile, K., Sionkowska, A., Micromachines 14 (4), 865. 2023. DOI: [10.3390/mi14040865](https://doi.org/10.3390/mi14040865). IF- 3.0

Fabrication and characterization of silk fibroin-based nanofibrous scaffolds supplemented with gelatin for corneal tissue engineering

AK Sahi, N Varshney, S Poddar, S Gundu, SK Mahto, Cells Tissues Organs 210 (3), 173-194, 2021, DOI [10.1159/000515946](https://doi.org/10.1159/000515946). IF 2.9

Decellularization Techniques for Tissue Engineering: Towards Replicating Native Extracellular Matrix Architecture in Liver Regeneration

I Allu, AK Sahi, M Koppadi, S Gundu, A Sionkowska, Journal of Functional Biomaterials 14 (10), 518. 2023. DOI: [10.3390/jfb14100518](https://doi.org/10.3390/jfb14100518), IF- 5.0

Silk-Based Biomaterials for Designing Bioinspired Microarchitecture for Various Biomedical Applications

AK Sahi, S Gundu, P Kumari, T Klepka, A Sionkowska, [Biomimetics](#) 8 (1): 55, 2023, DOI: [10.3390/biomimetics8010055](https://doi.org/10.3390/biomimetics8010055) IF- 3.4

Polycaprolactone as a Biomaterial for the Treatment of Articular Cartilage Damage

Ak Sahi, SP Mallick, SP Panda, A Anand, BN Singh, S Gundu, R Ghosh, Polycaprolactone: Application, Synthesis and Characterization, 2022. DOI: [10.52305/YNVU4463_7](https://doi.org/10.52305/YNVU4463_7)

Revisiting Methodologies for In Vitro Preparations of Advanced Glycation End Products

AK Sahi, P Verma, N Varshney, S Gundu, SK Mahto. Applied Biochemistry and Biotechnology 194 (6), 2831-2855. 2022. DOI: [10.1007/s12010-022-03860-5](https://doi.org/10.1007/s12010-022-03860-5). IF- 2.4

Mechanism ethnomedicinal and phytochemical effect of ayurvedic plants in prevention and management of senile dementia of Alzheimer's disease: a review

R KUMARI, A VERMA, D SHARMA, S MISHRA, AK SAHI, S GUNDU, International Journal of Pharmaceutical Research 13 (2).2021. DOI: [10.31838/ijpr/2021.13.02.333](https://doi.org/10.31838/ijpr/2021.13.02.333) IF-1.8

Role of nanomaterials with special reference to pharmaceutical technology

J Madhusudhanan, S Gundu, K Kavitha, D Abirami, R Manickam, Niyas MIA. International Journal of Health Sciences. , 6(S3), 7210–7227.2022, DOI: [10.53730/ijhs.v6nS3.7736](https://doi.org/10.53730/ijhs.v6nS3.7736)

Experimental studies on conversion of waste plastic into low-emissive hydrocarbon fuels

NR Lakkimsetty, B Al Rahbi, G Kavitha, S Gundu AIP Conference Proceedings 2690, 020051, 2023.<https://doi.org/10.1063/5.0119482>.

Extraction of Chitosan by bioprocessing of shrimp shell waste and production of edible film

NR Lakkimsetty, K sakhile, CH Kavitha, S Gundu, Recent Innovation in Science and Technology (RIST 2022). 2022

Elimination of contaminants from petroleum wastewater by Inverse Fluidization Technique

K Sakhile, NR Lakkimsetty, S Gundu, S Feroz ISET Conference on “Applied Science & Engineering (ISET-CASE 2021)

Studies On Nanomaterials And Their Applications.

Punithavathi, M., **Gundu, S.**, Sajith, S., Babu, M., Dubey, S., Ahemad,S., (2022) Journal of maharaja sayajirao university of baroda, UGC care.

CONFERENCE PROCEEDINGS

- Gundu S., Varshney N, Sahi A.K., and Mahto, S.K. (2020), “Fabrication and Optimization of Micro- and Nanoparticles of Luffa Cylindrica (Sponge Gourd) in Hard Tissue Engineering” International Conference on Bioengineering & Regenerative Medicine-2020 (ICBR 2020), IIT (BHU), Varanasi, India.
- Sahi, A.K., Varshney N, Gundu S., and Mahto, S.K. (2020), “Electrospun Silk-Gelatin based Scaffold towards corneal tissue engineering”, International Conference on Bioengineering & Regenerative Medicine-2020 (ICBR 2020), IIT (BHU), Varanasi, India.
- Gundu S., “Fabrication and In Vitro Characterization of Luffa Based Composite Scaffolds with Gelatin, Hydroxyapatite and Psyllium Husk for Bone Tissue Engineering,” at Research and Industrial Conclave Integration 2022, IIT Guwahati.

REFERENCE

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Varanasi-221005, India.

Area of expertise:

Cell and Tissue Engineering, Biofabrication, lab-on-a-chip, Neuroengineering

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Hyderabad, India.

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Area of expertise:

Signal processing, Biomedical Equipment, Image processing

Link: <https://scholar.google.co.in/citations?user=ndu9ruoAAAAJ&hl=en>