

Dr. SHARDA GUPTA
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Current Role: Ad-Hoc Faculty in Biomedical Department, National Institute of Technology, Raipur

Google Scholar URL: https://scholar.google.com/citations?user=oT6U_vAAAAAJ&hl=en&oi=ao

ResearchGate URL: <https://www.researchgate.net/profile/Sharda-Gupta>

RESEARCH INTEREST

- Biomaterials; Tissue Engineering; 3D printing; 3D Bioprinting; Biosensors

AWARDS AND FELLOWSHIPS

- Awarded **Chhattisgarh State Young Scientist Award** for research in 18th Chhattisgarh Young Scientist Congress-2023 from the Government of Chhattisgarh state, INDIA.
- **Awarded 1st prize** for oral presentation in National CME, held on 28th March 2017 at Raipur Institute of Medical Science.
- **University Topper** in M. Tech (2012-2014)
- **Graduate Aptitude Test for Engineering (GATE)** Qualified (Rank 911), Year-2012 conducted by IIT Kanpur

ACADEMIC QUALIFICATIONS

- **Ph.D. (May 2022)**
National Institute of Technology (NIT), Raipur (C.G.), INDIA
- **M.Tech. in Instrumentation (August 2014)**
Devi Ahilya Vishwavidyalaya (DAVV), Indore (M.P.), INDIA
- **B.E. in Electronics & Instrumentation (June, 2012)**
Shri Shankaracharya College of Engineering & Technology (SSCET), Bhilai (C.G.), INDIA

RESEARCH EXPERIENCE

- **Doctoral Research Project** (August 2016- May 2022)
“*In-vitro* and *In-vivo* Study of Tussar Silk Based Engineered 3D Scaffold for Tissue Engineering Applications' ' at Department of Biomedical Engineering, **NIT Raipur** under the guidance of **Dr. Arindam Bit**, Associate Professor.
- **Masters Research Project** (August 2013- April 2014)
“Temperature Monitoring and Data Logging in CRYOGENICS Using LabVIEW” at **RRCAT INDORE, Department of Atomic Energy, Government of INDIA** under the guidance of **Shri PK KUSH**, Head, Cryo Engineering and Cryomodule Development Division (CCDS)

TEACHING EXPERIENCE (BTech courses taught)

- Analog Electronics, Biomedical Instrumentation and measurement, 3D Printing, Analog Electronics Laboratory, Basic Biomedical Engineering Laboratory, Basic Electronics Laboratory, Tissue Engineering Laboratory

BOOK CHAPTERS

- **Gupta S, Bit A.**; Rapid prototype of polymeric gel; Polymeric Gels, **Elsevier**, 2018, 397-439.

- **Gupta, S., & Bit, A. (2019).** Acoustophoresis-based biomedical device applications. In *Bioelectronics and medical devices* (pp. 123-144). **Woodhead Publishing.**
- Bit, A., Suri, J. S., & **Gupta, S. (2020).** Biomaterials for a synthetic and tissue engineered blood vessel. In *Flow Dynamics and Tissue Engineering of Blood Vessels* (pp. 7-1). Bristol, UK: **IOP Publishing.**
- Bit, A., Suri, J. S., & **Gupta, S. (2020).** Fabrication techniques of artificial blood vessels. In *Flow Dynamics and Tissue Engineering of Blood Vessels* (pp. 10-1). Bristol, UK: **IOP Publishing.**

LIST OF PUBLICATIONS (“h-index” = 9)

- Syromiatnikova, V., **Gupta, S.,** Zhuravleva, M., Masgutova, G., Zakirova, E., Aimaletdinov, A., & Bit, A. (2023). Engineered GO-Silk Fibroin-Based Hydrogel for the Promotion of Collagen Synthesis in Full-Thickness Skin Defect. *Journal of Composites Science*, 7(5), 186 (**I.F. 3.3**)
- **Gupta, S.,** Prasad, P., Roy, A., Alam, M. M., Ahmed, I., & Bit, A. (2022). Metallic ion-based graphene oxide functionalized silk fibroin-based dressing promotes wound healing via improved bactericidal outcomes and faster re-epithelization. *Biomedical Materials*, 17(3), 035010. (**I.F. 4.103**)
- **Gupta, S.,** Patel, L., Mitra, K., & Bit, A. (2022). Fibroblast Derived Skin Wound Healing Modeling on Chip under the Influence of Micro-Capillary Shear Stress. *Micromachines*, 13(2), 305. (**I.F. 3.4**).
- **Gupta, S.,** Dutta, P., Acharya, V., Prasad, P., Roy, A., & Bit, A. (2022). Accelerating skin barrier repair using novel bioactive magnesium-doped nanofibers of non-mulberry silk fibroin during wound healing. *Journal of Bioactive and Compatible Polymers*, 37(1), 38-52 (**I.F. 2.703**)
- Vrana, N. E., **Gupta, S.,** Mitra, K., Rizvanov, A. A., Solovyeva, V. V., Antmen, E., ... & Bit, A. (2022). From 3D printing to 3D bioprinting: the material properties of polymeric material and its derived bioink for achieving tissue specific architectures. *Cell and tissue banking*, 1-24. (**I.F. 1.7**)
- **Gupta, S., & Bit, A. (2021).** 3D bioprinting in tissue engineering and regenerative medicine. *Cell and Tissue Banking*, 1-14 (**IF: 1.7**)
- **Gupta, S.,** Alrabaiah, H., Christophe, M., Rahimi-Gorji, M., Nadeem, S., & Bit, A. (2021). Evaluation of silk-based bioink during pre and post 3D bioprinting: A review. *Journal of Biomedical Materials Research Part B: Applied Biomaterials*, 109(2), 279-293 (**I.F. 3.4**).
- **Gupta S.,** Bissoyi A., Patra P.K., Bit A. (2021) Designing a Low-Cost Spin-Drying Desiccation Technique Using 3D Printed Whirligig Model for Preservation of Human Umbilical Cord Blood- Derived Mesenchymal Stem Cells. In: Rizvanov A.A., Singh B.K., Ganasala P. (eds) *Advances in Biomedical Engineering and Technology. Lecture Notes in Bioengineering.* Springer, Singapore.
- **Gupta, S.,** Mukherjee, R., Jangle, R. K., Singh, D., Singh, M., & Bit, A. (2021). Fabrication of Hydroxyapatite-Chitosan-Silk Fibroin Based Composite Film as Bone Tissue Regeneration Material. In *Advances in Biomedical Engineering and Technology* (pp. 437-445). Springer, Singapore.
- Alblawi, A., Ranjani, A. S., Yasmin, H., **Gupta, S.,** Bit, A., & Rahimi-Gorji, M. (2020). Scaffold- free: A developing technique in the field of tissue engineering. *Computer methods and programs in biomedicine*, 185, 105148 (**I.F. 7.027**).
- **Gupta S, Bissoyi A., Bit A.,** A review on 3D printable techniques for Tissue Engineering; *Bionanoscience*, 2018, 1-16, (**IF:3.00**).

PARTICIPATED IN CONFERENCES/ SYMPOSIUMS/WORKSHOPS

- **Sharda Gupta, Rupsha Mukherjee, and Arindam Bit,** “Development and evaluation of mechanical properties of composite scaffold made from Chitosan and Silk Fibroin for the reconstruction of soft tissues”, *Emerging areas in Biosciences and Biomedical Technologies*”, International Symposium, held on 5th – 6th January 2018 at **IIT Indore. (Poster presentation)**
- A Workshop on Animal Cell Culture (ACC-2017)” at Department of Biotechnology and Medical Engineering, **National Institute of technology, Rourkela,** Odisha on 19th – 25th November, 2017 (**Attended**)
- **Sharda Gupta,** Anupama Jha, Anju Thomas, Arindam Bit, Pradeep Kumar Patra, Akalabya Bissoyi, “Preparation and evaluation of cost effective MSCs seeded 3D tissue engineered constructs using extruder based desktop 3D printer”, National CME, held on 28th March 2017 at Raipur Institute of medical Science. (Poster presentation) - **BEST POSTER AWARD**
- **Sharda Gupta,** Anupama Jha, Arindam Bit, Pradeep Kumar Patra, Akalabya Bissoyi, “Development of Direct explants seeding method for the Tissue Engineering constructs”, National CME, held on 28th March 2017 at Raipur Institute of medical Science. (**Poster presentation**)
- A National Workshop on “Brain Wave Robotics' by TechTrunk Ventures Pvt. Ltd in association with ICOMET, IIT BHU at National Institute of Technology, Raipur, Chhattisgarh. On 21st -22nd August, 2017 (Attended) - **CERTIFICATE OF EXCELLENCE**

- A National Workshop on “Recent Advances in Biomedical Signal Processing: Application to rehabilitation and therapeutic solution” at Department of Biomedical Engineering, National Institute of Technology, Raipur, Chhattisgarh on 21st -23rd August, 2016 (**Attended**).

REVIEWER FOR JOURNALS:

- Taylor and Francis
- BioNanoscience
- SAGE Publishers

SKILLS AND ABILITIES

- Skilled in cell culture methods, immunostaining
- Conduction of *in-vivo* experiments for skin wound models
- Skilled in materials science and surface analysis such as SEM, XRD
- Experienced in various engineering applications such as AutoCAD, IMAGEJ, ANSYS, COMSOL
- Proficiency in oral and written communication skills in English

DECLARATION: I hereby declare that all information given above is true as the best of my knowledge and belief.

Dr. Sharda Gupta