



Regd. No. 2123/GO/Re/S/21/CPCSEA

Date: 03 May, 2022

IAEC Approval Number: IIT(BHU)/IAEC/2022/071

CERTIFICATE

This is to certify that the project proposal entitled "**Fabrication and characterization of Luffa-based Polymeric Tissue Engineered scaffold in regenerative medicine**" submitted by **Ms. Shravanva Gundu** under supervision of **Dr. Sanjeev Kumar Mahto** has been approved/recommended by the IAEC of *Indian Institute of Technology, Banaras Hindu University, Varanasi* in its meeting dated **03/05/2022** and has been sanctioned **66 Male/Female Wistar Rats (200-250 gm)** under this proposal for a duration of **Twelve (12) months**.

Prof. Sushant Kumar
Shrivastava

Name & Signature

Chairman

Dr. Vinod Tiwari

Name & Signature

Member Secretary

Dr. Shesh Narayan Mishra

Name & Signature

Main Nominee of CPCSEA

Note: The CPCSEA Guideline should be followed strictly while handling the animals

LIST OF PUBLICATIONS

Journals:

1. **Gundu, S.,** Sahi, A. K., Kumari, P., J., Vishwakarma, N., & Mahto, S. K. (2023). Assessment of various forms of cellulose-based *Luffa cylindrica* (mat, flakes and powder) reinforced polydimethylsiloxane composites for oil sorption and organic solvents absorption. *International Journal of Biological Macromolecules*. 240:124416 (**IF – 8.2**).
2. **Gundu, S.,** Varshney, N., Sahi, A. K., & Mahto, S. K. (2022). Recent developments of biomaterial scaffolds and regenerative approaches for craniomaxillofacial bone tissue engineering. *Journal of Polymer Research*, 29(3), 1 -23. (**IF – 3.097**).
3. **Gundu, S.,** Sahi, A. K., Varshney, N., Varghese, J., Vishwakarma, N., & Mahto, S. K. (2022). Fabrication and In Vitro Characterization of *Luffa*-based Composite Scaffolds Incorporated with Gelatin, Hydroxyapatite and Psyllium Husk for Bone Tissue Engineering. *Journal of Biomaterials Science, Polymer Edition*, 1-24. (**IF -3.58**).
4. Sahi, A. K., Verma, P., Varshney, N., **Gundu, S.,** & Mahto, S. K. (2022). Revisiting Methodologies for In Vitro Preparations of Advanced Glycation End Products. *Applied Biochemistry and Biotechnology*, 1 -25. (**IF – 2.926**)

Research articles communicated:

1. **Gundu S.,** Sahi A.K., Allu I., Kumari P., Pallawi., Singh K., & Mahto S.K. “*Luffa Cylindrica* Dried Fruit Macromolecular Carbohydrate Components and Their Biomedical and Environmental Applications: A Review”.
2. **Gundu S.,** Sahi A.K., Kumari P., Tekam C. K. S., Allu I., Singh R., & Mahto S.K. “In Vivo Characterization of *Luffa*-based Composite Scaffolds upon Subcutaneous Implantation in Rats”.

3. Kumari P., Raval A., Rana P., Sahi, A. K., **Gundu S.**, & Mahto S.K. (2023). “Revisting Culture Conditions of Satellite Cells In Vitro for Skeletal Muscle Regeneration”.
4. Tekam C. K. S., Kumari P., Sahi A.K., **Gundu S.**, & Mahto S.K. (2023). “"ELF-PEMF Exposure Induces Preferential Cytotoxicity in Lung Adenocarcinoma (A549) Compared to Breast Cancer (MCF7) and Liver Cancer (HepG2) Cells”.

Manuscripts under preparation:

1. **Gundu S.**, Sahi A.K., Kumari P., Tekam C. K. S., and Mahto S.K., “Preparation of Luffa-Silk based scaffolds for tissue engineering applications”.
2. Sahi A.K, Varshney N, **Gundu, S.**, Poddar, S., Vajanthri, K.Y., and Mahto SK. “Preparation and characterization of decellularized cornea using chemical detergents for corneal tissue engineering.”
3. Sahi A.K, Varshney N, **Gundu, S.**, and Mahto SK. “Behavior of Corneal Fibroblast Cell Line on Modified Substrate Surface.”

Patent Applications:

1. 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]

International Conferences:

1. **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.

2. 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.
3. **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.

Workshops and Hands-on-trainings:

1. Participated workshop on “3D- Printing and 3D Bio- Printing” jointly organized by NIPER Hyderabad and AVAY Biosciences (23rd -24th September 2021).
2. Participated in iCBIT BiO-IDEATHON 21 and won first place for presenting the idea on prefilled dual chamber syringe for drug delivery conducted by Department of Biotechnology, CBIT, Hyderabad (12th November 2021).
3. Participated 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 Aug – 6th Aug 2021).
4. A GIAN course on “Hepatic and Bone Tissue Development for Drug Metabolism and Tissue Engineering”, organized by IIT Kanpur, India, April, 01-05th, 2019.
5. Participated in 5-day workshop on “Cell processing Technology and engineering a new paradigm” organized by the School of Biochemical Engineering, IIT(BHU), Varanasi, India (5th -10th Dec. 2018).
6. AICTE sponsored QIP- Short-term course on “Biomems and Bioinstrumentation” organized by School of Biomedical Engineering, IIT (BHU), Varanasi, India (10th – 16th Dec 2018).