

In order of importance, list of ten best papers of the candidate, highlighting the important discoveries/contributions described in them briefly.

1. **Samit K Nandi**, Samiran Bandhopadhyay, Piyali Das, Indranil Samanta, Prasenjit Mukherjee, Subhasis Roy and Biswanath Kundu. 2016. Understanding osteomyelitis and its treatment through local drug delivery system. *Biotechnology Advances* 34(8): 1305-1317. **[Impact Factor-16] [First & Corresponding author]**
Contributions- Development of a new localized biomaterial-based antibiotic delivery system for treatment of experimental osteomyelitis in the animal model. Based on the eradication of infection and new bone formation, this new antibiotic delivery system could be safely applied for the treatment of chronic osteomyelitis patients of animal and human subjects.
2. Rupnarayan Bhattacharya, Piyali Das, Siddhartha Narayan Joardar, Bikash Kanti Biswas, Subhasis Batabyal, Pradip Kumar Das and **Samit Kumar Nandi**. 2019. Novel decellularized animal choncal cartilage graft for application in human patient" *Journal of Tissue Engineering and Regenerative Medicine* 13(1):46-57 **[Impact Factor 3.3 Corresponding author]**
Contribution: There are presently no published reports describing the successful clinical use of decellularized animal cartilage for human nasal and microtia reconstruction. Taken together, our innovative invention provides a low-cost, safe, and reliable treatment strategy using a decellularized xenocartilage for clinical application. Through this procedure, a sufficient volume of cartilage matrix is obtained, and subsequently, a framework is designed for a given patient's deformities and is then transplanted into a lesion.
3. Deboki Naskar; Ananta K. Ghosh, Mahitosh Mandal, Piyali Das, **Samit K Nandi** and Subhas C. Kundu. 2017. Dual growth factor loaded nonmulberry silk fibroin/carbon nanofiber composite 3D scaffolds for *in vitro* and *in vivo* bone regeneration *Biomaterials* 136: 67- 85 **[Impact Factor – 14] [Corresponding author]**
Contributions- The regenerated silk protein fibroin obtained from non-mulberry tropical tasar *Antheraea mylitta* species is reinforced with functionalized carbon nanofiber (CNF) and the composite sponges are fabricated using a facile green aqueous-based method. The study clearly shows the potential attributes of these composite matrices as an extracellular matrix for supporting the successful osseointegration process.
4. Prerak Gupta, Gaurab Ranjan Chaudhuri, G. Janani, Manoj Agarwala, Debaki Ghosh, **Samit K. Nandi** and Biman B. Mandal. 2021. Functionalizing Cell-Free Silk Vascular Grafts with Decellularized Human Wharton's Jelly Matrix Improves their Remodeling via Immunomodulation in Rabbit Jugular Vein. *Advanced Healthcare Materials* 2100750 **IF 10 [Corresponding author]**
Contributions- Herein, a functionalized cell-free silk-based vascular graft with Decellularized Human Wharton's Jelly Matrix was developed and trialed in an animal model which has shown a new vista in vascular surgery as an affordable, alternative source avoiding a second surgery in human patients.
5. Santanu Mandal, Vijay Kishore, Madhuparna Bose, **Samit Nandi**, and Mangal Roy. 2021. In Vitro and in Vivo Degradability, Biocompatibility and Antimicrobial Characteristics of Cu Added Iron-Manganese Alloy. *Journal of Materials Science & Technology*. 84(10): 159-172. **[IF 10.9] [Corresponding author]**

Contributions- Herein we have developed a new, innovative alloy system with degradable, anti-microbial, and biocompatible properties for the possible development of implants especially bone screws, plates, and pins, and its use in orthopaedic surgery. Because of multiple features, this alloy system may show a new vista for orthopaedic surgeons during application in surgery.

6. Rameshbabu, Arun Prabhu, Sayanti Datta, Kamakshi Bankoti, Elavarasan Subramani, Koel Chaudhury, V. Lalzawmliana, **Samit Nandi** and Santanu Dhara. 2018. Polycaprolactone Nanofibers Functionalized with Placental Derived Extracellular Matrix for Stimulating Wound Healing Activity. *Journal of Materials Chemistry B*. **6**, 6767-6780 **IF-7** [**Corresponding author**]

Contribution: This investigation leads to the development of polycaprolactone nanofibers Functionalized with Placental Derived Extracellular Matrix for Stimulating Wound Healing in the animal model. The research works show sufficient rays of possibilities for the treatment of chronic and non-healing wounds in human patients.

7. Rupnarayan Bhattacharya, Biswanath Kundu, **Samit Kumar Nandi** and Debabrata Basu. 2013. Systematic approach to treat chronic osteomyelitis through localized delivery system: Bench to bedside. *Material Science and Engineering C*, **33**(7):3986-93 (**Impact Factor – 7.9**) [**Corresponding author**].

Contributions- Development of a new localized hydroxyapatite-based antibiotic delivery system for treatment of experimental osteomyelitis in the animal model as well as for treatment of a human patient in osteomyelitis cases.

8. Vinayak M. N., Sonali Jana, Pradyot Datta, Himanka Das, Bijayashree Chakraborty, Prasenjit Mukherjee, Samiran Mondal, Biswanath Kundu and **Samit Kumar Nandi**. 2023. Accelerating full-thickness skin wound healing using Zinc and Cobalt doped-bioactive glass-coated eggshell membrane. *Journal of Drug Delivery Science and Technology*. **81**: 104273 [**IF- 5**] [**Corresponding author**].

Contributions- Development of a new waste-derived affordable material that has tremendous potential in wound healing. The work has shown sufficient rays of possibilities in the treatment of complicated wound healing in clinical wound treatment of animal patients.

9. Sonali Jana, Pradyot Datta, Himanka Das, Prabal Ranjan Ghosh, Biswanath Kundu and **Samit Kumar Nandi**. 2022. Engineering vascularizing electrospun dermal grafts by integrating fish collagen and ion-doped bioactive glass. *ACS Biomaterial Sciences and Engineering*. **8**(2): 734–752 [**IF 5.8**] [**Corresponding author**].

Contributions- Development of a new waste-derived affordable material from fish skin that has tremendous potential in wound healing. The work has shown sufficient rays of possibilities in the treatment of complicated wound healing in clinical wound treatment of animal patients. The developed mat is having potential in terms of affordability as well as a superior treatment option presently available in the market.

10. Pallabi Kayal, Sonali Jana, Pradyot Datta, Himanka Das, Biswanath Kundu, and **Samit Kumar Nandi**. 2023. Microfibers of fish waste-derived collagen and ion-doped bioactive glass in stimulating the healing sequences in full-thickness cutaneous burn injury. *Journal of Drug Delivery Science and Technology*. **83**: 104429 [**IF- 5**] [**Corresponding author**].

Contributions- Considering the treatment options in vogue presently both for animal and human burn injuries, the present research work has tremendous potential in burn

wound healing. The affordable material developed in the present work from the waste-derived fish skin along with metallic ion-doped bioactive glass has shown sufficient rays of possibilities in the treatment of complicated burn wound healing in clinical patients. In the near future, the same may be used for the treatment of human burn injuries.

Samit Kumar Nandi