Prof. Biman B. Mandal

Work Address:
Professor and Associate Dean, Academics (UG)
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Date of Birth: July 07, 1981

Educational Qualification:

1. Ph.D., Department of Biotechnology, Indian Institute of Technology Kharagpur, India (2005-2009). PhD thesis title "*Non-mulberry silk fibroin protein as potential natural biomaterial for cell based tissue engineering*".
2. M.Sc. (Biotechnology), Himachal Pradesh University, Shimla, India (2003-2005) through All India Entrance for Masters in Biotechnology program conducted by JNU.
3. B.Sc. [Botany (H), Physics and Chemistry], Presidency College, Calcutta University, Kolkata, India (2000-2003).

Professional Experience:

1. Associate Dean, Academics (UG), May 08, 2020 onwards.
2. Professor, Department of Biosciences & Bioengineering, IITG (September 01, 2019 onwards)
3. Associate Professor, Department of Biosciences & Bioengineering, IITG (April 04, 2015 August 31, 2019)
4. Assistant Professor, Department of Biosciences & Bioengineering, IIT Guwahati (June 05, 2012-April 03, 2015)
5. Assistant Professor (on contract), Department of Biosciences & Bioengineering, IIT Guwahati (May 31, 2011- June 04, 2012)
6. Post-Doctoral Research Associate with Prof. David L. Kaplan, Department of Biomedical Engineering, Tufts University, USA (April 29, 2009 – April 30, 2011).

Research Interests:

- Biomaterials; Tissue Engineering; 3D Bioprinting of Human Tissue and Organs; Human Stem Cells Based Regeneration; Targeted Drug Delivery Systems; 3D Disease Models for High Throughput Drug Screening.

Teaching Experience (courses taught at IIT Guwahati):

- Biomaterials (BTech/MTech/PhD)
- Modern Biology (BTech)
- Biotechniques (MTech/PhD)
- Animal Cell Biotechnology (BTech)

- Tissue Engineering and Stem Cells (BTech/MTech/PhD)
- Nano device: Fabrication, productization and patent writing (PhD)

Awards and Achievements:

- **SWARNAJAYANTI Fellowship 2020 in LIFE SCIENCE** by Department of Science and Technology, Govt of India.
- Included in **"World Top 2% Scientist List"** prepared by Stanford University USA.
- **B.M. BIRLA SCIENCE PRIZE 2018 in BIOLOGY**. Citation and cash award.
- **INSA-Medal for Young Scientists 2015** by Indian National Science Academy, India. Citation and cash award.
- **NASI-Young Scientist Platinum Jubilee Award 2013** by The National Academy of Sciences India. Citation and cash award.
- **NASI-SCOPUS Young Scientist Award 2016** by National Academy of Sciences and SCOPUS India. Citation and cash award.
- **3D PRINTING WORLD AWARDS 2019 as "Innovator in Tissue Engineering of the year – Medical"** for our contribution in 3D bioprinting of human organs and tissues for transplantation.
- **APA- Young Scientist Award 2019** by Asian Polymer Association, an International forum on Polymer Science and Technology.
- **Outstanding Reviewer Certificate (Top 25) by Royal Society of Chemistry (RSC, Journal of Materials Chemistry: B)** in view of significant contribution based on the number, timeliness and quality of the reports to RSC journal in 2018.
- **DST-INSPIRE Faculty award 2013** by Department of Science and Technology, Govt. of India.
- **DAE- Young Scientist Award 2011,** Department of Atomic Energy (DAE).
- **Gandhian Young Technological Innovation Award (GYTI- 2014)** given by Dr. R.A. Mashelkar at IIM Ahmedabad. Citation and cash award.
- **MAHE Young Scientist Award 2012** by Society for Biomaterials and Artificial Organs, India (SBAOI) at BIND International Conference, IISC, Bangalore.
- **SYIS Young Investigator Award 2011**, TERMIS Asia Pacific International conference, Singapore. Certificate and cash award.
- **Delivered an invited talk at MIT**, Boston, Department of Material Science and Engineering (Invited by Prof Christine Ortiz)
- Member of the National Academy of Sciences, India (**M.N.A.Sc.**), 2014 onwards
- **DBT-Rapid Grants for Young Investigator (RGYI) Award 2012**, Department of Biotechnology.
- **DST-FAST TRACK Young Investigator Award 2013**, Department of Science and Technology.
- **Department of Science and Technology (DST) travel grant award 2015** for attending TERMIS World Congress in Boston, USA.
- **CSIR- Travel Grant Award 2014** for attending International Silk Conference in Shanghai, China.

- **Department of Biotechnology (DBT) travel grant award 2013** for attending TERMIS International Conference in Shanghai, China.
- **Department of Science and Technology (DST) travel grant award 2012** for attending TERMIS World Congress in Vienna, Austria.
- **Research highlights of our work in leading International, National Newspapers, Magazines and News Channels:** BBC India, Scientific American, New Scientist, Rajya Sabha TV, The Hindu, The Times of India, Anandabazar Patrika, Nature India, The Telegraph, India Today, The Caravan, Zee News, Deccan Herald, Financial Express, Science Daily, Dainik Sambad, Ganashakti, Nanotechnology Online and Faculty F1000 Prime.
- **Cover Page articles (10)** in "**PNAS**", "**ACS-NANO**", "**AFM**", "**JMC-B**", "**ACS Applied Biomaterials**", "**Integrative Biology**", "**Macromolecular Bioscience**" and "**Biotechnology and Bioengineering**" for work on silk based tissue engineering.
- **Indo-Swiss exchange programme student award with full scholarship 2006-07**, to work with **Prof. Jeffrey Alan Hubbell's** group at EPFL, Switzerland.
- Qualified CSIR-UGC-JRF (Dec' 2004 and June' 2005) **All India National Eligibility Test (NET)** examination and was qualified for prestigious **SPM examination** (2005) (Shyama Prasad Mukherjee Scholarship).
- **Qualified Graduate Aptitude Test in Engineering (GATE- 2004)** with All India Rank of 282.
- Qualified **All India Entrance for Masters in Biotechnology** conducted by **JNU**, 2003.

Technology Transferred to Industry:

1) **Antimicrobial formulation as hand sanitizer:** Successfully licensed to Industry i.e. M/S Stanvac Med in 2020**.**
2) **Antimicrobial formulation as disinfectant:** Successfully licensed to Industry i.e. M/S Berger Paints India Ltd. in 2020.
3) **Silk based gel for wound healing:** Successfully licensed to Industry i.e. M/S Stanvac Med in 2020.
4) **Silk based liquid spray for wound healing:** Successfully licensed to Industry i.e. M/S Stanvac Med in 2020.
5) **Antibacterial protective patch for wound healing:** Successfully licensed to Industry i.e. M/S Stanvac Med in 2020.

Extramural Project Grants (as PI): 05; Completed (as PI): 17; Completed (Co-PI/Co-member): 03

International Collaborations (joint manuscripts/grants/student exchange):

1) **Prof. Ali Khademhosseini**, UCLA, USA: On "Silk Based Cardiac Patch".
2) **Prof. David L. Kaplan**, Tufts University, USA: On "Silk Based Bioartificial Pancreas".
3) **Prof. My Hedhammar**, KTH, Sweden: On "Silk- Spider Silk Wound Healing Patches and Bioartificial Skin"
4) **Prof. David Vorp**, Pittsburg University, USA: On "Silk Based Blood Vessels"
5) **Prof. Keiji Numata**, RIKEN University, Japan: On "Spider Silk Biophysical Characterization"
6) **Prof. Nam Joon Cho**, NTU, Singapore: On "Silk Based Skin Repair Model"

7) **Prof. Jonathan Knowles**, University College London, UK: On "Silk Based Bone/Osteoarthritis Mitigation"
8) **Prof. Daniele Noel**, INSERM France: On "Silk Based Osteochondral Model"
9) **Prof. Stephen Badylak**, McGowan Institute, Pittsburg University: On "Silk Based Liver Regeneration/Disease Model"
10) **Prof. Su Ryon Shin**, Harvard Medical School, Brigham and Women's Hospital, Boston USA: On "Silk Based Cardiac Patch".
11) **Prof. Lorenzo Moroni,** University of Maastricht, The Netherlands: ON "Silk Based 3D Bioprinting of Tissue".
12) **Prof. Qiang Lu,** Soochow University, Suzhou, China: On "Silk Based Tissue Engineering Technolgies".
13) **Prof. Chis Holland,** University of Sheffield, UK: On "Silk hydrogel gelation and mechanism"

Students Guided at IITG:

1) **01 INSPIRE Faculty** (as Mentor)
2) **09 Post-Doc students** (Completed/ongoing as Principle Guide)
3) **14 PhD students** (Completed/ongoing as Principle Thesis Guide)
4) **19 MTech students** (Completed/ongoing as Principle Thesis Guide)
5) **11 BTech students** (Completed/ongoing as Principle Thesis Guide)
6) **30 Summer/Winter trainees**
7) **25+ JRF & SRF students under various extramural funded projects.**

Manuscripts published in peer reviewed International Journals:
(Total publications = 142, IF= Impact Factor, Total cumulative impact factor = 755+, total citations = 5550+ with "h- index" of 39, *Corresponding Author)

1. Deepika Arora, Bibhas K. Bhunia; G. Janani and **Biman B Mandal**. Bioactive three-dimensional silk composite in vitro tumoroid models for high throughput screening of anticancer drugs. ***J. Colloid and Interface Science*** (Accepted 2021) **IF 7.48**

2. Ankit Gangrade and **Biman B Mandal***. Development of 3D porous silk scaffold for in vitro evaluation of injectable hydrogels potential in preventing stomach cancer growth and recurrence. ***ACS Biomaterials Science & Engineering*** (Accepted 2020) **IF 4.511**

3. Vinod Morya, Shanka Walia, **Biman B Mandal**, Chinmay Ghoroi and Dhiraj Bhatia. Functional DNA based hydrogels: Development, properties and biological applications. ***ACS Biomaterials Science & Engineering*** (Accepted 2020) **IF 4.511**

4. Junmin Lee^{+}, Shreya Mehrotra^{+}, Elaheh Zare-Eelanjegh^{+}, Raquel Rodrigues, Alireza Akbarinejad, David Ge, Luca Amato, Kiavash Kiaee, YongCong Fang, Aliza Rosenkranz, Wendy Keung, **Biman B. Mandal**, Ronald A Li, Ting Zhang, HeaYeon Lee, Mehmet Remzi Dokmeci, Yu Shrike Zhang, Ali Khademhosseini*, Su Ryon Shin*. A Heart-Breast Cancer-on-a-Chip Platform for Disease Modeling and Monitoring of Cardiotoxicity Induced by Cancer Chemotherapy. ***Small*** (Accepted 2020). **IF 11.45**

5. Shreya Mehrotra, Bruna A.G. de Melo, Minoru Hirano, Wendy Kung, Ronald A. Li, **Biman B. Mandal***, Su Ryon Shin*. Non-mulberry Silk Based Ink for Fabricating Mechanically Robust

Cardiac Patches and Endothelialized Myocardium-on-a-chip Application. ***Advanced Functional Materials***, 2020;30:1907436. **IF 15.62** (**COVER PAGE**)

6. Eoghan M. Cunnane, Katherine L. Lorentz, Aneesh K. Ramaswamy, Prerak Gupta, **Biman B. Mandal**, Fergal J. O'Brien, Justin S. Weinbaum and David A. Vorp. Extracellular Vesicles Enhance the Remodeling of Cell-Free Silk Vascular Scaffolds in Rat Aortae. ***ACS Appl. Mater. Interfaces*** 2020, 12, 24, 26955–26965. **IF 8.45**

7. Ankit Gangrade, Basveshwar Gawali, Praveen Kumar Jadi, Vegi G. M. Naidu and **Biman B. Mandal***. Photo-Electro Active Nanocomposite Silk Hydrogel for Spatiotemporal Controlled Release of Chemotherapeutics: An *in vivo* approach towards suppressing solid tumor growth. ***ACS Appl. Mater. Interfaces***, 2020, 12, 25, 27905–27916. **IF 8.45**

8. Prerak Gupta, Katherine L. Lorentz, Darren G. Haskett, Eoghan M. Cunnane, Aneesh K. Ramaswamy, Justin S. Weinbaum, David A. Vorp* and **Biman B. Mandal***. Bioresorbable silk grafts for small diameter vascular tissue engineering applications: *In vitro* and *in vivo* functional analysis. ***Acta Biomaterialia***, 2020;105:146-158. **IF 6.63**

9. Charanya Ramachandran*, Prerak Gupta, Swatilekha Hazra and **Biman B Mandal***. In vitro culture of human corneal endothelium on silk fibroin films for tissue regeneration. ***Trans. Vision Sci. Tech***, 2020;9:12. **IF 2.39**

10. Ila Verma, Ashim Malakar, Abhijit Gogo, K. Anki Reddy, Manishekhar Kumar, **Biman B. Mandal**, G. Krishnamoorthy. Pyridyl substitution control dynamics and shape dependence of fluorescent aggregates**. *J. Photochem. Photobiol. A: Chemistry***, 2020;392:112405. **IF 3.26**

11. Satyajit Mahata, Araghni Bhattacharya, Jadi Praveen Kumar, **Biman B. Mandal**, Vadivelu Manivannan. Naked-eye detection of Pd^{2+} ion using a highly selective fluorescent heterocyclic probe by "*turn-off*" response and *in-vitro* live cell imaging. ***J. Photochem. Photobiol. A: Chemistry***, 2020;394:112441. **IF 3.26**

12. Joseph Christakiran Moses, Triya Saha, and **Biman B. Mandal***. Chondroprotective and osteogenic effects of silk-based bioinks in developing 3D bioprinted osteochondral interface. ***Bioprinting***, 2020;17: e00067.

13. Ashutosh Bandyopadhyay, **Biman B. Mandal***. 3D Printed Silk-based Biomimetic Tri-layered Meniscus for Potential Patient Specific Implantation. ***Biofabrication***, 2020: 12 (1); 015003. **IF 7.23 [01 Citation]**

14. Dimple Chouhan and **Biman B Mandal***. Silk biomaterials in wound healing and skin regeneration therapeutics: From bench to bedside. ***Acta Biomaterialia***, 2020:103;24-51. **IF 6.63**

15. Ashish A Prabhu, Jadi P. Kumar, **Biman B. Mandal***, Venkata V Dasu*. High cell density cultivation for enhanced production of recombinant human interferon gamma (rhIFN-γ) using Glucose/Methanol carbon source and exploring the antitumor activity for potential biomedical applications. ***Biotechnology and Applied Biochemistry*** (Accepted 2020). **IF 1.55**

16. Bruna A. G. de Melo, Yasamin A. Jodat, Shreya Mehrotra, Michelle A. Calabrese, Tom Kamperman, **Biman B. Mandal**, Maria H. A. Santana, Eben Alsberg, Jeroen Leijten, Su Ryon Shin. 3D Printed Cartilage-like Tissue Constructs with Spatially Controlled Mechanical Properties. ***Advanced Functional Materials***, 2019: 29:1906330. **IF 15.62** (**COVER PAGE**)

17. Yogendra P. Singh, Ashutosh Bandyopadhyay, **Biman B. Mandal***. 3D Bioprinting using Cross-Linker Free Silk-Gelatin Bioink for Cartilage Tissue Engineering. ***ACS Applied Materials & Interfaces*****,** 2019;11: 33684-33696. **IF 8.45 [03 Citations]** (Research highlighted in Scientific American and documentary prepared by BBC India)

18. Junmin Lee, Vijayan Manoharan, Louis CheungΓ, Seungkyu Lee, Byung-Hyun Cha, Peter Newman, Razieh Farzad, Shreya Mehrotra, Kaizhen Zhang, Fazal Khan, Masoumeh Ghaderi, Yi-Dong Lin, Saira Aftab, Pooria Mostafalu, Mario Miscuglio, Joan Li, **Biman B. Mandal**, Mohammad Asif Hussain, Kai-tak Wan, Xiaowu (Shirley) Tang, Ali Khademhosseini, Su Ryon Shin. Nanoparticle-based hybrid scaffolds for deciphering the role of multi-modal cues in cardiac tissue engineering. ***ACS NANO***, 2019: 13 (11); 12525-12539. **IF 13.90** (**COVER PAGE**)

19. Guru Janani, Shivanshi Kumar, **Biman B. Mandal***, Fiber-Reinforced Silk Composite for Enhanced Urokinase Production Using High-Density Perfusion Culture and Bioactive Molecule Supplementation. ***ACS Biomaterials Science & Engineering*** 2019;5(11):6137-6151. **IF 4.511**

20. Nandana Bhardwaj, Yogendra P. Singh, **Biman B. Mandal***. Silk fibroin scaffolds based 3D co-culture model for modulation of chondrogenesis without hypertrophy via reciprocal crosstalk and paracrine signaling. ***ACS Biomaterials Science & Engineering***, 2019; 5(10): 5240-5254. **IF 4.511**

21. Ashutosh Bandyopadhyay, Suvro Kanti Chowdhury, Souradeep Dey, Joseph Christakiran Moses and **Biman B. Mandal***. Silk – A promising biomaterial opening new vistas towards affordable healthcare solution. ***Journal of the Indian Institute of Science***, 2019;1-43. **IF 0.742 [01 Citation]**

22. Jadi Praveen Kumar and **Biman B. Mandal***. The Inhibitory Effect of Silk Sericin against Ultraviolet-induced Melanogenesis and Its Potential use in Cosmeceutics as an Anti-Hyperpigmentation Compound. ***Photochemical & Photobiological Sciences,*** *2019; 18(10): 2497-2508.* ***IF 2.40***

23. Guru Janani, Manishekhar Kumar, Dimple Chouhan, Joseph Moses, Ankit Gangrade, Sohenii Bhattacharjee, **Biman B. Mandal***. An insight into silk-based biomaterials: From physico-chemical attributes to recent biomedical applications. ***ACS Applied Bio Materials*****,** 2019; 2(12) :5460-5491. **[03 Citations]**

24. Ankit Gangrade and **Biman B. Mandal***. Injectable Carbon Nanotube Impregnated Silk Based Multifunctional Hydrogel for Localized Targeted and On-Demand Anticancer Drug Delivery. **ACS *Biomaterials Science and Engineering*** 2019:5; 2365-2381. **IF 4.51 [03 Citations]**

25. Dimple Chouhan, Namit Dey, Nandana Bhardwaj, **Biman B. Mandal***. Emerging and innovative approaches for wound healing and skin regeneration: Current status and advances. ***Biomaterials*** 2019:216; 119267. **IF 10.27 [06 Citations]**

26. Dimple Chouhan, Piyali Das, Naresh Thatikonda, Samit K. Nandi, My Hedhammar, **Biman B. Mandal***, Silkworm silk matrices coated with functionalized spider silk accelerate healing of diabetic wounds. ***ACS Biomaterials Science & Engineering***, 2019, 5(7), 3537-3548. **IF 4.511 [02 Citations]**

27. Piyali Das, Yogendra Pratap Singh, **Biman B. Mandal*,** Samit Kumar Nandi*. Tissue-derived decellularized extracellular matrices toward cartilage repair and regeneration. ***Methods in Cell Biology*** 2019:157;185-221.

28. Dimple Chouhan, Tshewuzo-u Lohe, Naresh Thatikonda, VGM Naidu, My Hedhammar, **Biman B. Mandal***. Silkworm silk scaffolds functionalized with recombinant spider silk containing a fibronectin motif promotes healing of full-thickness burn wounds. ***ACS Biomaterials Science & Engineering*** 2019:5; 4634-4645. **IF 4.51 [02 Citations]**

29. Joseph Christakiran Moses, Mainak Dey, K. Bavya Devi, Mangal Roy, Samit K. Nandi and **Biman B. Mandal***. Synergistic effects of silicon/zinc doped brushite and silk scaffolding in augmenting the osteogenic and angiogenic potential of composite biomimetic bone grafts. ***ACS Biomaterials Science & Engineering*** 2019:5;1462-1475. **IF 4.51 [02 Citations] (**Special highlight in "The Hindu" and **COVER PAGE)**

30. Nabanita Saha, Rushita Shah, Prerak Gupta, **Biman B. Mandal**, Radostina Alexandrova, Maja Dutour Sikiric, Petr Sáha, PVP-CMC hydrogel: An excellent bioinspired and biocompatible scaffold for osseointegration. ***Materials Science and Engineering: C***, 95 (2019) 440-449. **IF 4.959 [09 Citations]**

31. Shreya Mehrotra, Joseph Christakiran Moses, Ashutosh Bandyopadhyay, **Biman B. Mandal***. 3D printing/bioprinting based tailoring of in vitro tissue models: Recent advances and challenges. ***ACS Applied Bio Materials*** 2019:2; 1385-1405. **[05 Citations]** (**COVER PAGE**)

32. Shreya Mehrotra, Dimple Chouhan, Rocktotpal Konwarh, Manishekhar Kumar, Jadi Praveen Kumar and **Biman B. Mandal***. A comprehensive review on silk at nanoscale for regenerative medicine and allied applications. ***ACS Biomaterials Science & Engineering*****,** 2019:5;2054-2078. **IF 4.51 [06 Citations]**

33. Piyali Das, Yogendra Pratap Singh, Siddhartha Narayan Joardar, Bikash Kanti Biswas, Rupnarayan Bhattacharya, Samit Kumar Nandi, **Biman B. Mandal***. Decellularized Caprine Conchal Cartilage toward Repair and Regeneration of Damaged Cartilage. ***ACS Applied Bio Materials*** 2019:2; 2037-2049. **[02 Citations]**

34. Arpita Shome, Adil M Rather, Aindrila Ghosal, Bibhas K Bhunia, **Biman B Mandal***, Uttam Manna*. Rational Chemical Engineering in Natural Protein Derived Functional Interface. ***ACS Sustainable Chemistry & Engineering*** 2019:7;7502-7509. **IF 6.97**

35. Praveen Kumar Jadi, **Biman B Mandal***. Inhibitory Role of Silk Cocoon Extract on Elastase, Hyaluronidase and UV Radiation-Induced Matrix Metalloproteinases Expression in Human Dermal Fibroblast and Keratinocytes. ***Photochem. Photobiol. Sci.***, 2019:**18**;1259-1274. **IF 2.4 [05 Citations]**

36. Dimple Chouhan, Shreya Mehrotra, Omkar Majumder and **Biman B. Mandal***. Magnetic actuator device assisted modulation of cellular behavior and tuning of drug release on silk platform. ***ACS Biomaterials Science & Engineering*** 2019:5;92–105. **IF 4.51 [09 citations]**

37. Jadi Praveen Kumar and **Biman B. Mandal***. Silk sericin induced pro-oxidative stress leads to apoptosis in human cancer cells. ***Food & Chemical Toxicology*****,** 2019;123:275-287. **IF 3.77 [07 citations]**

38. Bibhas K. Bhunia and **Biman B. Mandal***. Exploring gelation and physico-chemical behavior of in-situ bioresponsive silk hydrogels for disc degeneration therapy. ***ACS Biomaterials Science & Engineering***, 2019;5:870–886. **IF 4.51 [06 Citations]**

39. Prerak Gupta, Joseph Christakiran Moses and **Biman B Mandal***. Surface patterning and innate physico-chemical attributes of silk films concomitantly govern vascular cell dynamics. ***ACS Biomaterials Science & Engineering***, 2019;5:933–949. **IF 4.51 [02 Citation]**

40. Khushwant Singh, Ankit Gangrade, Achintya Jana, **Biman B. Mandal** and Neeladri Das. Design, synthesis, characterization and antiproliferative activity of organoplatinum compounds bearing 1,2,3-triazole ring. ***ACS Omega*** 2019;4:835–841. **IF 2.58 [05 Citations]**

41. Nabanita Saha, Rushita Shah, Prerak Gupta, **Biman B. Mandal**, Radostina Alexandrova, Maja Dutour Sikiric, Petr Saha. PVP - CMC Hydrogel: An excellent bioinspired and biocompatible scaffold for osseointegration. ***Materials Science and Engineering C*** 2019;95:440-449. **IF 4.95 [04 citations]**

42. Bibhas K. Bhunia, David Kaplan and **Biman B Mandal***. Silk-based multilayered angle-ply annulus fibrosus construct to recapitulate form and function of the intervertebral disc. **PNAS,** 2018;115: 477-482. **IF 9.58 (**Special highlight in "The Hindu" National newspaper and Rajya Sabha TV) **[23 citations]**

43. Manishekhar Kumar, Prerak Gupta, Sohenii Bhattacharjee, Samit K. Nandi and **Biman B. Mandal***. Immunomodulatory injectable silk hydrogels maintaining functional islets and promoting anti-inflammatory M2 macrophage polarization. **Biomaterials**, 2018;187:1-17. **IF 10.27 (**Special highlight in "The Hindu", "Down To Earth", "SciSoup", "Indian Science Journal", "Research Stash", "Biotechtimes.org", "Scroll.in" etc) **[17 citations]**

44. Dimple Chouhan, Tshewuzo-u Lohe, Pavan Kumar Samudrala and **Biman B. Mandal***. In situ forming silk fibroin hydrogel promotes skin regeneration in full thickness burn wounds. **Advanced Healthcare Materials** 2018;7:e1801092. **IF 6.27** (Special Highlight in Nature India) **[19 citations]**

45. Dimple Chouhan, Naresh Thatikonda, Linnea Nilebäck, Mona Widhe, My Hedhammar and **Biman B. Mandal***. Recombinant spider silk functionalized silkworm silk matrices as potential bioactive wound dressings and skin grafts. **ACS Applied Materials and Interfaces**, 2018;10:23560-23572. **IF 8.45** (Special highlight in "Nature India", "The Hindu", "New Scientist" and "The Caravan") **[15 citations]**

46. Joseph Christakiran Moses, Samit K. Nandi and **Biman B Mandal***. Multifunctional cell instructive silk-bioactive glass composite reinforced scaffolds towards osteoinductive, proangiogenic and resorbable bone grafts. **Advanced Healthcare Materials** 2018; 7:e1701418. **IF 6.27** (Special highlight in "The Hindu" National newspaper) **[15 citations]**

47. Yogendra Pratap Singh, Joseph Christakiran Moses, Bibhas K. Bhunia, Samit K. Nandi and **Biman B. Mandal*.** Hierarchically structured seamless silk scaffolds for osteochondral interface tissue engineering. **Journal of Materials Chemistry B,** 2018;**6**:5671-5688. **IF 5.04 [09 citations] COVER PAGE & EDITORS CHOICE article**

48. Adil Rather, Arpita Shome, Suresh Kumar, Bibhas K. Bhunia, **Biman B Mandal**, Hemant Srivastava and Uttam Manna. Alkali Metal-ion Assisted Michael Addition Reaction in Controlled Tailoring of Topography in Superhydrophobic Polymeric Monolith. **Journal of Materials Chemistry A,** 2018;**6**: 17019-17031. **IF 10.73 [04 citations]**

49. Bibhas K. Bhunia and **Biman B. Mandal***. Modulation of extracellular matrix by annulus fibrosus cells on tailored silk based angle-ply intervertebral disc construct. **Materials and Design**, 2018;158:74-87. **IF 5.77 [04 citations]**

50. Dimple Chouhan, Janani Guru, Bijayashree Chakraborty, Samit Nandi and **Biman B Mandal***. Functionalized PVA-Silk blended nanofibrous mats promote diabetic wound healing via regulation of extracellular matrix and tissue remodeling. **Journal of Tissue Engineering and Regenerative Medicine** 2018;12:e1559-1570. **IF 3.3 [24 citations]**

51. Sudesna Chakravarty, Bedanta Gogoi, **Biman B Mandal**, Nandana Bhardwaj and Neelotpal Sen Sarma. Silk fibroin as a platform for dual sensing of vitamin B12 using photoluminescence and electrical techniques. **Biosensors and Bioelectronics** 2018; 112:18-22. **IF 9.51 [05 Citation]**

52. Yogendra Pratap Singh, Joseph Christakiran Moses, Nandana Bhardwaj and **Biman B. Mandal***. Injectable hydrogels: a new paradigm for osteochondral tissue engineering. **Journal of Materials Chemistry B,** 2018;**6**:5499-5529. **IF 5.04 [15 citations]**

53. Jadi Praveen Kumar, Shamshad Alam, Abhishek Jain, Kausar Ansari and **Biman B. Mandal***. Protective activity of silk sericin against UV radiation-induced skin damage by downregulating oxidative stress. **ACS Applied Bio Materials**, 2018;1:2120–2132. **[07 citations]**

54. Adil M. Rather, Arpita Shome, Bibhas K. Bhunia, Aparna Panuganti, **Biman B Mandal**, Uttam Manna. Simultaneous and controlled release of two different bioactive small molecules from nature inspired single material. **Journal of Materials Chemistry B** 2018;**6**:7692-7702. **IF 5.04 [01 Citation]**

55. Saundray Raj Soni, Nimmy Kumari, Bibhas K. Bhunia, Biswatrish Sarkar, **Biman B. Mandal*** and Animesh Ghosh*. *In vitro* and *in vivo* evaluation of pirfenidone loaded acrylamide grafted pullulan-poly(vinyl alcohol) interpenetrating polymer networks. **Carbohydrate Polymers** 2018:202;288-298. **IF 6.04 [01 Citation]**

56. Saundray Raj Soni, Bibhas Bhunia, Nimmy Kumari, Subhashis Dan, Sudipta Mukherjee, **Biman B. Mandal*** and Animesh Ghosh*. Therapeutically effective controlled release formulation of pirfenidone from non-toxic biocompatible carboxymethyl pullulan-poly(vinyl alcohol) interpenetrating polymer networks. **ACS Omega** 2018;3:11993–12009. **IF 2.58 [02 Citation]**

57. Saundray Raj Soni, Nimmy Kumari, Bibhas K. Bhunia, Biswatrish Sarkar, **Biman B. Mandal*** and Animesh Ghosh*. Synthesis and characterization of a non-cytotoxic and biocompatible acrylamide grafted pullulan – Application in pH responsive controlled drug delivery. **International Journal of Biological Macromolecules** 2018;120:753-762. **IF 4.78 [02 Citation]**

58. Sourav Bhowmick, Achintya Jana, Khushwant Singh, Prerak Gupta, Ankit Gangrade, **Biman B. Mandal** and Neeladri Das. Coordination driven Self-assembly of Ionic Irregular Hexagonal Metallamacrocycles via an Organometallic Clip and their Cytotoxicity Potency. **Inorganic Chemistry** 2018:57;3615–3625**. IF 4.85 [08 citations]**

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1. Joseph Christakiran M, Ankit Gangrade and **Biman B. Mandal**. Carbon Nanotubes and their Polymer Nanocomposites. "Nanomaterials and Polymer Nanocomposites". Invited Book Chapter Edited by Niranjan Karak. Elsevier 2019:145-175. ISBN 9780128146156.
2. Manishekhar Kumar, G. Janani, Magali J. Fontaine, David L. Kaplan, **Biman B. Mandal**. Silk-based Encapsulation Platforms to Enhance Pancreatic Cell Function, "Transplantation, Bioengineering and Regeneration of the Endocrine Pancreas". Invited book chapter, Elsevier, Editor - Prof. Giuseppe Orlando, Wake Forest School of Medicine 2019:329-337. ISBN 9780128148334.
3. Nandana Bhardwaj**,** Dimple Chouhan, **Biman B Mandal**. 3D functional scaffolds for skin tissue engineering in "Functional 3D tissue engineering scaffolds". Edited by Y. Deng and J. Kuiper. Woodhead Publisher (Elsevier), USA, 2018; 345-365. (ISBN: 9780081009796).
4. P. Bhattacharjee, P Gupta, MJ Christakiran, SK Nandi, **Biman B Mandal**. Silk-based matrices for bone tissue engineering applications. "Nanostructures for the engineering of cells, tissues, and organs" 2018;439-472. (ISBN: 9780128136652).
5. Yogendra Pratap Singh, Shreya Mehrotra, Jadi Praveen Kumar, Bibhas Kumar Bhunia, Nandana Bhardwaj, **Biman B. Mandal**. Tissue Engineering Therapies for Ocular Regeneration. "Biomaterials & Nanotechnology for Tissue Engineering" Edited by S. Swaminathan, K. Uma Maheswari and S. Anuradha. CRC Press (Taylor and Francis Group), 2017:173-210 (ISBN no: 978-1-4987-4373-0)
6. CS Krishna Murthy and **Biman B. Mandal**. Biomaterials based on natural and synthetic polymer fibers. Trends in Biomaterials. Edited by G.P. Kothiyal and A. Srinivasan (Pan Stanford Publishing, Singapore); 2016:121-157. (ISBN no: 978-981-4613-98-9)
7. Salma Jasmine and **Biman B. Mandal**. Types and properties of non-mulberry silk biomaterials for tissue engineering applications in "Silk biomaterials in tissue engineering and regenerative medicine". Edited by Prof. S. C. Kundu (Woodhead Publishing group, India); 2014:275-298. (ISBN: 9780857096999).
8. **Biman B Mandal** and David L. Kaplan. (Biologic Biomaterials: Silk) Biomaterials: Principles and Practices. Edited by Joyce Y. Wong, Joseph D. Bronzino and Donald R. Peterson. (CRC press, Taylor & Francis group), 2013:7-1 to 7-20. ISBN No: 978-1-4398-7251-2

Expert Member:

1. Serving as external **PhD thesis expert** to various IIT's, IISER's, AIIM's, Central Govt. Universities and International Universities.
2. Serving as **Expert Member** on Mulberry Sericulture by Central Silk Board, CSRTI-Berhampore and helping in project/progress evaluation.
3. **Expert member** to various DBT/DST/ICMR proposals.

Member of Professional bodies/Scientific organizations:

1. **NASI –** National Academy of Sciences, India (M.N.A.Sc)
2. **TERMIS –** Tissue Engineering and Regenerative Medicine International Society.
3. **BMES –** Biomedical Engineering Society, USA.

4. **SBAOI –** Society for Biomaterials and Artificial Organs, India (Life member)
5. **STERMI –** Society for Tissue Engineering and Regenerative Medicine, India (Life member)
6. **SIRMB –** Society for Interdisciplinary Research in Materials and Biology, India (BOG member)
7. **ISCA –** The Indian Science Congress Association (Life member)
8. **BRSI --**The Biotech Research Society of India (Life member)
9. **APA --** Asian Polymer Association (Life Member, Executive Committee Member)
10. **ISNM -- Indian Society of Nanomedicine** (Life Member)
11. **SfRBM –** Society for Redox Biology and Medicine (Member)

Reviewer for Journals:

- Advanced Functional Materials/ Small/ Advanced Materials/ Biomaterials/ Tissue Engineering/ Scientific Reports/ ACS Biomaterials Science & Engineering/ European Cells and Materials/ Acta Biomaterialia/ Advanced Healthcare Materials/ Journal of Tissue Engineering and Regenerative Medicine/ PLOS ONE/ Journal of Biomedical Nanotechnology/Polymer International/ Macromolecular Bioscience/Applied Surface Science/ Biotechnology and Bioengineering/ Biotechnology Progress/Journal of Biomaterials Applications/Current Science/Tumor Biology/ACS Sustainable Chemistry & Engineering/Regenerative Medicine Research/PINSA/Stem Cell Research and Therapy/Cellular Physiology and Biochemistry/ ACS Applied Bio Materials etc.

Visiting Faculty:

- **University College London (UCL),** London, UK 2015.
- **KTH, School of Biotechnology**, AlbaNova University Centre, Stockholm, Sweden 2014, 2016
- **Justus- Liebig University,** Gissen, Germany 2014
- **Nanyang Technological University** (NTU), Singapore 2012.
- **Guwahati University,** Department of Bioengineering, India 2015.

Editorial Board Member:

- Journal of the Indian Institute of Science
- Biomedical Materials
- Trends in Biomaterials and Artificial Organs (TIBAO)
- Frontiers in Bioengineering and Biotechnology
- Frontiers in Materials
- Frontiers in Molecular Biosciences
- Journal of Biomaterials Applications (Associate Editor)
- Current Tissue Engineering
- Journal of Biotechnology and Bioengineering
- Applied Nanomedicine
- Bioscience and Engineering
- Advances in Genetic Engineering and Biotechnology

Conference/Symposium/Workshop organized:

- 30th SBAOI Annual Meeting, 12th STERMI Annual Meeting & International Virtual Conference on Biomedical Materials Innovation (ICBMI-2020), December 06-09, 2020 (Online).

- 6th National Workshop on NEMS/MEMS and Theranostics Devices (NWNTD-2020), December 1-3, 2020 (Online).
- BIRAC BIG-15 grant funding & Bio-entrepreneurship Workshop, May 15, 2019.
- International Conference on Functional Nanomaterials (ICFNM-2019), February 22-25, 2019, IIT BHU (Convener)
- INSA Annual General Meeting, October 17-18, 2016, IIT Guwahati (Convener).
- Five day AICTE supported QIP workshop on "Advances in Biomedical Engineering", February 25 to March 01, 2015, IIT Guwahati (Coordinator).
- 2nd Symposium on "Advances in Sustainable Polymers", January 21-22, 2015, IIT Guwahati (Coordinator).
- IIT Guwahati – Kyoto Institute of Technology Japan, Joint Symposium on Biobased Materials, January 20, 2015, IIT Guwahati (Co-organizer).
- 1st Symposium on "Advances in Sustainable Polymers", January 6-11, 2014, IIT Guwahati (Coordinator).
- National conference on "Recent Advances in Cancer Biology and Therapeutics", December 05, 2014, Biosciences and Bioengineering Department, IIT Guwahati (Member)

Plenary/Invited/Popular Lectures Delivered:

1. Invited Talk at Japan-India YNU Symposium 2020 titled "Science, Technology and Innovations for SDGs in India and Japan", Yokohama National University, Japan, 27-28 December, 2020.
2. Invited Talk at TEQIP III Short Term Course on "Nanostructured Materials and their Applications in Nanotechnology (NAMAAN-2020, IITG, October 26 – 30, 2020
3. Invited Talk at Smart Materials for Sustainable Technology (SMST-2020), Goa, Feb 22-25, 2020.
4. Invited Talk at All Indian Cell Biology Conference (AICBC-2019), IISER Mohali, Dec 18-21, 2019.
5. Invited Talk at 6th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN2019), IIT Guwahati, 18-21 December 2019.
6. Keynote Lecture and Co-Chair at BioTERM-2019 organized by Department of Biosciences and Bioengineering, IIT Kanpur, November 27-30, 2019.
7. Invited Talk at NatFOS 2019, November 06-08, 2019, Jaipur.
8. Invited Talk and Guest of Honor at West Bengal State Student-Youth Science Fair-2019, November 08, 2019, Kolkata.
9. Invited Talk at Biological Engineering Society Conference (BESCON-2019), IIT Madras, October 18-19, 2019.
10. Invited Talk and Co-Chair at International Conference on Advances in Polymeric Materials & Human Healthcare, APA-STERMI 2019, Goa, October 16-18, 2019.
11. Invited Talk at 7th edition of Reflux, the Annual Symposium of the Department of Chemical Engineering, IIT Guwahati, September 28, 2019.
12. Invited talk Elsevier Connect Forum in collaboration with Jadavpur University, Kolkata, September 19, 2019.
13. Invited Talk at Institute of Life Sciences (ILS), Bhubaneswar, September 13, 2019.
14. Invited Talk at BSSE, IISC Bangalore, August 25, 2019
15. Popular Science Lecture to Undergraduate students at Jagadis Bose National Science Talent Search, (JBNSTS), Kolkata, March 29, 2019.
16. Popular Science Lecture at IIT Guwahati, Research Conclave 2019.

17. Popular Science Lecture to Top 1% 10+ students of West Bengal at Jagadis Bose National Science Talent Search, (JBNSTS), Kolkata, March 17, 2019.
18. 4th Annual Conference organized by Assam Endocrine Society hosted by Department of Endocrinology, Gauhati Medical College, March 15-16, 2019, Kaziranga, Assam.
19. Indian Biophysical Society International Conference, IISER Kolkata, March 15-17, 2019
20. Indo-Egyptian symposium meeting, BSBE Department, IIT Bombay, January 30-31, 2019
21. Invited Talk at 1st Indian Materials Conclave and 30th Annual General Meeting of Materials Research Society of India (MRSI), February 12-15, 2019.
22. Invited Talk at National Symposium on "From Genes to Network: Recent trends in Cell Signaling", December 14-15, 2018, Amity University, Haryana.
23. Invited Talk at International conference on Biomedical Engineering and Technology: Roadway from Laboratory to Market", December 20-21, 2018, Department of Biomedical Engineering, NIT Raipur.
24. Popular Lecture conducted by The National Academy of Sciences, India (NASI), NER Chapter, November 24, 2018, St. Edmund's College, Shillong.
25. Invited Talk and Co-Chair at International Conference on Advances in Polymer Science & Technology (APA-2018), November 1-3, 2018, Kathmandu, Nepal.
26. Invited Talk and Rapporteur at 3rd Annual Conference of ISNM "Nanobioteck-2018", 24th-27th October 2018. IIT Delhi and AIIMS, New Delhi.
27. Invited talk at 5th TERMIS World Congress- 2018, Kyoto Japan, September 4-7, 2018.
28. Invited Talk at 4th Annual Conference 2018, Research Society for the Study of Diabetes in India, Assam Chapter, August 25-26, 2018, Radisson Blue, Guwahati, Assam.
29. Invited Talk at International Symposium of Functional Nanomaterials (ISFM), April 13-15, 2018, Chandigarh University, Chandigarh.
30. Invited Popular Talk to school kids under Dean Outreach Initiative, Feb 06, 2018, IIT Guwahati.
31. Plenary Lecture at CME on Arthritis, Joint disorders and Tissue Engineering at Department of Orthopedics NEIGRIHMS Shillong, Feb 02, 2018.
32. 4th BSSE Anuual Symposium, IISC Bangalore, Jan 25, 2018
33. Invited Talk at RBAT IV, International Conference, Dept. of Biochemistry, University of Kerala, Jan 24, 2018
34. 2nd NanoBioteck International Conference, Trivandrum, December 08, 2017
35. Invited Talk and Co-Chair at Asian Biomaterials Congress (ABMC), Trivandrum, October 25-27, 2017.
36. UK-India Research Links Workshop organized by British Council and Newton Bhabha fund, April 20-23, 2017.
37. Invited Talk at Annual conference, Indian Society for Dental Research (ISDR), AIIMS, Delhi, October 02, 2017
38. Invited Talk at Science Day, IASST, Guwahati, March 03, 2017
39. Invited talk at UGC Refresher course, Guwahati University, March 23, 2017
40. Invited talk at Research conclave, IIT Guwahati, March 2017
41. Invited Talk at ABSMSNW International Conference, IIT BHU, 19-23 February 2017
42. Invited talk at TE-QIP, NIT Raipur, January 13, 2017
43. Invited Talk and Co-Chair at Nanobiotek Conference, AIIMS, November 25, 2016
44. Invited Talk TE-QIP, CIF, IIT Guwahati, March 30, 2016.
45. Invited Talk at Research Conclave, IIT Guwahati. March 19, 2016.
46. Invited Talk at Ishan Vikas 2015, IIT Guwahati, December 09, 2015.
47. Invited Talk at Recent Advances in Formulation Techniques & Tissue Engineering 2015, BIT Mesra, Ranchi, India, November 16, 2015.

48. Invited Talk at Advances in Polymer Science & Technology (APST-2015) National conference, IASST, Guwahati, India, March 13, 2015.
49. Invited Talk at Advances in Biomedical Engineering, QIP programme, February 26, 2015, IIT Guwahati.
50. Invited Talk at Micro-Manufacturing for Biomedical Applications, QIP programme, February 23, 2015, IIT Guwahati.
51. Invited Talk at IIT Guwahati – Kyoto Institute of Technology Japan, Joint Symposium on Biobased Materials, January 20, 2015, IIT Guwahati.
52. Invited Talk at Smart Materials and Their Applications in Nanotechnology, QIP programme, December 23, 2014, IIT Guwahati.
53. Invited Talk at Sophisticated Instruments in Interdisciplinary Research, TEQIP programme, November 25, 2014, IIT Guwahati.
54. Invited Talk at KTH, School of Biotechnology, AlbaNova University Centre, Stockholm, Sweden, October 27, 2014 (Invited by Prof. My Hedhammar)
55. Invited Talk at International Silk Conference, Fudan and Soochow University, Shanghai, China, October 8-12, 2014.
56. Invited Talk at UGC-NRCM Workshop on Biomaterials, Department of Materials Engineering, IISC, Bangalore, May 23-25, 2014 (Invited by Prof. Ashok. M. Raichur).
57. Invited Talk at Justus –Liebig- University, Giessen, Germany on March 11, 2014 (Invited by Professor Ralph Schermuly).
58. Invited Talk at National School on Sustainable Polymers & First Symposium on Advances in Sustainable Polymers (ASP-14), January 06, 2014, IIT Guwahati.
59. Invited Talk at 2nd International conference on Medical materials, devices and regenerative medicine (MMDRM -2014), Kathmandu, Nepal, January 11-13, 2014.
60. Invited Talk at Molecular Tools in Medical Biotechnology Investigation, QIP programme, December 02, 2013, IIT Guwahati.
61. Invited Talk at DUPONT Knowledge Centre, September 20, 2013, Hyderabad.
62. Invited Talk at Advanced School in Biomedical Nanotechnology, Sastra University, March 25-29, 2013 Thanjavur.
63. Invited Talk at MIBISEM-2013 conference, North Bengal University (NBU), February 25-26, 2013 Siliguri.
64. Invited Talk at Nanyang Technological University (NTU), Singapore December 15-28 2012 (Invited by Prof. Nam-Joon Cho, School of Biological Sciences/Materials sciences/HealthCare Sciences)
65. Invited Talk at Healthcare India, February 20-23, 2012, International conference, New Delhi.
66. Invited Talk at ICMPAR 2012, International conference, March 29-31, 2012 Rajasthan.
67. Invited Talk at BIND 2012, International conference, IISC, December 9-11, 2012 Bangalore
68. Invited Talk at Recent Advancements in Microfluidics-2011, Short term course, IIT Guwahati.
69. Invited Talk at MIT, Boston 2011, Department of Material Science and Engineering (Invited by Prof Christine Ortiz)

Scholarships/Fellowships Awarded to Students (as PI/Guide):

1. Yogendra Pratap Singh has been awarded **Newton Bhabha PhD Placement Programme 2017-18** by Department of Biotechnology, Government of India and British Council, UK to carry out research work with Dr. Chris Holland at The University of Sheffield, UK for a period of 4 months (Oct 2018 to Jan 2019).

2. Yogendra Pratap Singh has been awarded **Raman-Charpak fellowship 2017-18** by Indo-French Centre for the Promotion of Advanced Research (IFCPAR/CEFIPRA) to carry out research with Prof. Daniele Noel at the Institute for Regenerative Medicine and Biotherapy (IRMB, INSERM U1183), Montpellier, France for a period of 6-months (Feb to Aug 2018).

3. Prerak Gupta - **Student Scientist Award** at TERMIS–Americas, Charlotte, NC, USA. (Cash award 400 USD)

4. **DST-Inspire Faculty** awarded to Dr. Rajiv Borah, Institute Post-doctoral Fellow under the supervision of Dr. Biman B. Mandal, in January-2018 Call.

5. Janani G has been awarded **"Fulbright Nehru Doctoral Research Fellow" (Aug 2018-May 2019),** visited University of Pittsburgh for 9 months, award financed by United States India Education Foundation (USIEF) and Institute of International Education (IIE) New York.

6. Manishekhar Kumar was awarded **Fulbright Nehru Doctoral Research Fellowship (Aug 2015-May 2016)** and visited Tufts University, U.S.A. for his research entitled 'Bioartificial Pancreas' under the supervision of Dr. David Kaplan, financed by United States India Education Foundation (USIEF) and Institute of International Education (IIE) New York.

7. Prerak Gupta was awarded **Fulbright Nehru Doctoral Research Fellowship (Aug 2017-May 2018)** and visited University of Pittsburgh, U.S.A. for his research entitled 'Bioengineered silk based small diameter vascular grafts' under the supervision of Dr. David A. Vorp, financed by United States India Education Foundation (USIEF) and Institute of International Education (IIE) New York.

8. Shreya Mehrotra was awarded **Fulbright Nehru Doctoral Research Fellowship (September 2017-May- 2018)** and visited MIT-Harvard Health Science and Technology Division, U.S.A for her research entitled ' *Engineered Silk-Based Matrices as a Biomimetic Approach for Cardiac Repair* ' under the supervision of Dr. Ali Khademhosseini and Dr. Su Ryon Shin, financed by United States India Education Fund (USIEF) and Institute of International Education (IIE) New York.

9. Dimple Chouhan - **Student Travel Assistance Fund** awarded by IIT Guwahati for participation in 'International conference on advances in polymer science and technology*, Nepal'*, Nov 01-03, 2018. (Cash award 20,000 INR).

10. Dimple Chouhan, **Biman B. Mandal**, "Smart and affordable wound dressings for treatment of chronic diabetic foot ulcers" presented the work in '**Talent Search Contest on Innovative Research Ideas Leading to Entrepreneurial Venture in Biotechnology and Allied Areas'** organized by Guwahati Biotech Park, Assam, April 5th 2018. **(4th prize with a cash award of 15,000 INR).**

11. Team (Silk-Bots) led by Yogendra Pratap Singh, Bibhas Bhunia, Shreya Mehrotra, Souradeep Dey and Ashutosh Bandyopadhyay presented the work on "3D Bioprinting" in **TechExpo 2018** organized during Techniche 2018 at IIT Guwahati during 30th August to 2nd September 2018. (**Best project from IIT Guwahati**).

12. Team members – Bibhas Bhunia, Shreya Mehrotra, Souradeep Dey and Ashutosh Bandyopadhyay, presented the model on "3D Bioprinted Human Tissues" at Research Conclave 2019, organized at IIT Guwahati during 14th to 17th March, 2019. (**3rd Prize in Model Presentation**).

13. **Mr. Surojeet Das** (MTech student, 2014) received **Gandhian Young Technological Innovation Award (GYTI- 2014)** given by Dr. R.A. Mashelkar at IIM Ahmedabad, an initiative by SRISTI and NIF for our silk hydrogel work.

Selected Conference Participations/Posters/Presentations:

1. Bibrita Bhar, Dimple Chouhan, Bijayshree Chakrabarti, Samit Kumar Nandi and **Biman B. Mandal**. Silk based natural formulation for wound healing and skin regeneration. ***International conference on smart materials for sustainable technology (SMST 2020)***, 22nd – 25th February, 2020, Goa, India.

2. Chitra Jaiswal, Jadi Praveen Kumar, Tarishi Gupta, Joseph Christakiran Moses and **Biman B. Mandal**. Injectable bioresorbable silk hydrogel system for localized breast cancer therapy. ***International conference on smart materials for sustainable technology (SMST 2020)***, 22nd – 25th February, 2020, Goa, India.

3. Ankit Gangrade and **Biman B. Mandal**. Silk fibroin nanoparticle embedded injectable silk hydrogel for sustained delivery of anticancer drug. ***International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2019),*** 18th-21st December, 2019, IIT Guwahati, India.

4. Shreya Mehrotra, Su Ryon Shin, **Biman B. Mandal**. 3D printed functional and vascularized cardiac constructs fabricated using h-ipscs encapsulated non- mulberry silk based bioink. **International conference on Biomaterial based therapeutic engineering and regenerative medicine (BiTerm)**, 28th November – 1st December, 2019, IIT Kanpur, India.

5. Bibhas Kumar Bhunia, Souradeep Dey, Ashutosh Bandyopadhaya, **Biman B. Mandal**. Fabrication of 3D-printed biomimetic constructs to recapitulate form and function of annulus fibrosus tissue. ***1 st Departmental retreat (Biotech Express)*** organized by Department of Biosciences and Bioengineering (BSBE), IIT Guwahati on 21 st December 2019, IIT Guwahati, India.

6. Bibhas Kumar Bhunia, Souradeep Dey, Ashutosh Bandyopadhaya, **Biman B. Mandal**. 3D Printing of Annulus Fibrosus Anatomical Equivalents Recapitulating Angle-ply Architecture for Intervertebral Disc Replacement. Young Scientist Conference (YSC) in ***India International Science Festival (IISF)*** Kolkata. 5th to 8th November 2019, Kolkata, India.

7. G. Janani, Smriti Priya, and **Biman B. Mandal**. Modeling liver microarchitecture in vitro using 3D bioprinting for personalized drug toxicity and screening applications. ***International Conference on Advances in Polymeric Materials & Human Healthcare***, 16th -18th October 2019, Goa, India

8. Ankit Gangrade, Basveshwar Gawali, Jadi Praveen Kumar, VGM Naidu and **Biman B. Mandal**. Near-infrared and Electric Field Multi-responsive Silk Nanocomposite Hydrogel for Localized and Synergistic Tumor Therapy. ***Nanobioteck 2019***, Organized by Indian Society of Nanomedicine

(ISNM) in partnership with the Department of Biotechnology (DBT), Govt. of India. 21st – 23rd November 2019, New Delhi, India.

9. Joseph Christakiran Moses, Triya Saha and **Biman B. Mandal**. Chondroprotective and osteoinductive silk based bioinks for 3D bioprinting stem cell laden biomimetic osteochondral interface. ***International conference on Biomaterial based therapeutic engineering and regenerative medicine (BiTerm)***, 28th November – 1st December, 2019, IIT Kanpur, India.

10. Prerak Gupta, Katherine L. Lorentz, Darren G. Haskett, Eoghan M. Cunnane, Aneesh Ramaswamy, Justin S. Weinbaum, David A. Vorp, **Biman B. Mandal**. "*In vitro* and *in vivo* evaluation of bi-layered tubular silk scaffolds for vascular tissue engineering applications". ***ICFNM-2019, IIT BHU, Varanasi***, India; February 22-25, 2019. **(1st prize in oral presentation)**

11. Bibhas K. Bhunia, **Biman B. Mandal**, "Exploring in situ gelling and physicochemical behavior of bioresponsive silk hydrogel for nucleus pulposus tissue engineering". Poster presented at ***International Conference on Functional Nanomaterial (ICFNM)*** 2019 organized by Department of Physics, Indian Institute of Technology (BHU) Varanasi, Feb 22-25, 2019. (**Best Poster Award**)

12. Ashutosh Bandyopadhyay and **Biman B. Mandal**. "Rapid Prototyping of Biomimetic Silk based Functional 3D Constructs for Meniscus Tissue Engineering"**,** ***Research Conclave, IIT Guwahati***, March 14-17, 2019. (Poster presentation)

13. Prerak Gupta, Katherine L. Lorentz, Darren G. Haskett, Eoghan M. Cunnane, Aneesh Ramaswamy, Justin S. Weinbaum, David A. Vorp, **Biman B. Mandal**. "Functional *in vivo* performance of adipose stem cells seeded small diameter silk vascular grafts". ***Research Conclave 2019, IIT Guwahati, India;*** March 14-17, 2019. (**1st prize in poster presentation**)

14. Shreya Mehrotra, Su Ryon Shin, **Biman B. Mandal**. "Evaluation of Silk as a Bioink Component for 3D Printing of Mechanically Robust Hierarchical Cardiac Tissues*"*. ***Research conclave- 2019, IIT-Guwahati,*** March 14-17, 2019. (**2nd Prize in Poster Presentation).**

15. Joseph Christakiran Moses, Triya Saha and **Biman B. Mandal**. "Silk based bioinks for 3D bioprinting of hierarchically relevant osteochondral interface" ***Research conclave, IIT-Guwahati,*** March 14-17, 2019. (**Awarded 3rd prize for poster presentation**).

16. Sohenii Bhattacharjee, Joseph Christakiran M., Manishekhar Kumar and **Biman B. Mandal.** "Macrophage polarization in response to silk matrices". ***Research Conclave, IIT Guwahati,*** 2019. (Poster presentation)

17. Bibrita Bhar, Dimple Chohan and **Biman B. Mandal**. "Harnessing regenerative properties of naturally derived silk biomaterials to develop smart wound care matrices", ***Research Conclave, IIT Guwahati,*** March 14-17, 2019. (Poster presentation)

18. Bibhas K. Bhunia, **Biman B. Mandal**. "Design, fabrication and behavioral study of in situ forming silk hydrogel for nucleus pulposus tissue engineering". ***Research conclave, IIT Guwahati,*** March 14-17, 2019. (Oral presentation)

19. Ankit Gangrade, and **Biman B. Mandal**. "Site-Specific On-Demand Delivery of Anticancer Drug Using Multi-Responsive Silk Based Nanocomposite Hydrogel." ***Research Conclave, IIT Guwahati,*** March 14-17, 2019. (Poster presentation).

20. Ashutosh Bandyopadhyay and **Biman B. Mandal**. "Rapid Prototyping of Biomimetic Silk based Functional 3D Constructs for Meniscus Tissue Engineering", ***International Conference on Functional Nanomaterials (ICFNM-2019),*** *IIT (BHU),* February 22-25, 2019.

21. Yogendra Pratap Singh, Ashutosh Bandyopadhyay, **Biman B. Mandal**. "3D Bioprinting using Cross-Linker Free Silk-Gelatin Bioink for Cartilage Tissue Engineering*"*. ***International Conference on Functional Nanomaterials (ICFNM-2019), IIT BHU***. Feb 22-25, 2019.

22. Dimple Chouhan, **Biman B. Mandal**, "Silk fibroin hydrogel as an affordable alternative solution for treatment of third degree burn wounds", ***International conference on advances in polymer science and technology, Nepal***, Nov 01-03, 2018. **(1st prize in oral presentation).**

23. Ankit Gangrade, Rajiv Bora, and **Biman B. Mandal**. "NIR/Electric field responsive silk nanocomposite hydrogel for localized on-demand anticancer therapeutics delivery." ***Nanobioteck 2018,*** *All India Institute of Medical Sciences (AIIMS, New Delhi), Organized by Indian Society of Nanomedicine (ISNM), 24-27th October 2018.* (Poster presentation)

24. Yogendra Pratap Singh, Ashutosh Bandyopadhyay, **Biman B. Mandal**. "Self-Gelling Silk Gelatin Bioink for 3D Bioprinting of Cartilage Tissue*"*. ***20th White Rose Biomaterials and Tissue Engineering Group (BiTEG 2018), University of Sheffield, UK***. 17th December 2018. (Oral presentation)

25. Yogendra Pratap Singh, Joseph C. Moses, Bibhas K. Bhunia, Samit K. Nandi, **Biman B. Mandal**. "Seamless biphasic silk construct for the repair of osteochondral defect". ***Advanced Functional Polymers for Medicine (AFPM), Montpellier, France,*** May 16-18, 2018. (Poster presentation)

26. G. Janani, Smriti Priya and **Biman B. Mandal**. "Bioprinted 3D Liver Model for Drug Toxicity Studies", ***Regenerative Engineering Symposium: Converging Engineering, Life Sciences & Translational Medicine, Pittsburgh, USA*****.** October 27-28 2018, (Oral Presentation).

27. Deepika Arora, Bibhas K. Bhunia, Janani G and **Biman B. Mandal**. Bioactive silk assistive 3D tumoroids for pre-clinical anticancer drug evaluation, Indo-Japan Bilateral Symposium on Future Perspective of Bioresource Utilization in North-Eastern Region (IJBS 17), IIT Guwahati, February 1-4, 2018. (**BEST ORAL PRESENTATION AWARD**).

28. Yogendra P. Singh, Joseph Christakiran M, Bibhas K. Bhunia, Samit K. Nandi and **Biman B. Mandal**. Seamless biphasic silk construct for the repair of osteochondral defect, Advanced Functional Polymers for Medicine (AFPM), Montpellier, France, May 16-18, 2018. (Poster).

29. Jadi Praveen Kumar and **Biman B. Mandal**. Protective effect of silk sericin against UVA and UVB-induced photo-damage and photo-aging, Indo-Japan Bilateral Symposium on Future Perspective of Bioresource Utilization in North-East India, IIT Guwahati, Guwahati, India, February 1-4, 2018. (**BEST POSTER AWARD**).

30. Janani G, Samit K. Nandi and **Biman B. Mandal**. Bioactive silk based in vitro liver construct assisting hepatocyte clusters towards functional liver recapitulation, Research Conclave 2018, IIT Guwahati, March 8-11, 2018. (**BEST POSTER AWARD**).

31. Manishekhar Kumar, Samit K. Nandi, David L. Kaplan, and **Biman B. Mandal**. Immuno-informed islet-encapsulating silk scaffolds mediate M2 macrophage polarization and enhance insulin production, Research Conclave 2018, IIT Guwahati, March 8-11, 2018. (**BEST POSTER AWARD**).

32. Bibhas K. Bhunia and **Biman B. Mandal**. Engineered disc-like angle-ply construct to recapitulate form and function of annulus fibrosus, Indo-Japan Bilateral Symposium on Future Perspective of Bioresource Utilization in North-Eastern Region (IJBS 18), February 1-4, 2018. (**BEST POSTER AWARD**).

33. Dimple Chouhan and **Biman B. Mandal**. Exploring silk fibroin based nanofibrous matrix as skin substitute material, Research Conclave 2018, March 8-11, 2018. (**BEST POSTER AWARD**).

34. Joseph Christakiran M and **Biman B. Mandal**. Cell instructive silk-bioactive glass composite scaffolding matrices towards osteoinductive, proangiogenic and resorbable bone grafts, Research conclave 2018, IIT Guwahati, India, March 8-11, 2018. (Poster).

35. Bibhas K. Bhunia and **Biman B. Mandal**. Tailoring mechanical properties of silk based engineered disc to modulate matrix deposition of annulus fibrosus cells, Research Conclave 2018, March 8-11, 2018. (Oral).

36. Jadi Praveen Kumar and **Biman B. Mandal**. Oxidative stress induced by silk sericin triggers apoptosis in human cancer cell lines, Research conclave, IIT Guwahati, Guwahati, India, March 8-11, 2018. (Poster).

37. Ankit Gangrade and **Biman B. Mandal**. Localized and targeted anticancer drug delivery using nano hybrid injectable silk hydrogel, Research Conclave 2018, IIT Guwahati, March 8-11, 2018. (Poster).

38. Tarishi Gupta, Deepika Arora, Janani G and **Biman B. Mandal**. Minimally invasive silk hydrogel for anti-cancer drug delivery and tissue regeneration, Research Conclave 2018, IIT Guwahati, March 8-11, 2018. (Poster).

39. Tarishi Gupta, Deepika Arora, Janani G and **Biman B. Mandal**. Minimally invasive silk hydrogel for anti-cancer drug delivery and tissue regeneration in a breast cancer model. International Symposium on Functional Materials (ISFM), IIT Kanpur, Punjab University, Chandigarh, April 13-15, 2018. (Oral Presentation).

40. Manishekhar Kumar, Samit K. Nandi, David L. Kaplan, **Biman B. Mandal**. Immunomodulatory bioartificial pancreas for sustained insulin production in diabetic patients, TERMIS - EU - 2017, Davos, Switzerland, June 26-30, 2017. (Oral Presentation).

41. Bibhas K. Bhunia, Manishekhar Kumar and **Biman B. Mandal**. Development of Silk-based Angle-ply Construct for Annulus Fibrosus Tissue Engineering, TERMIS - EU - 2017, Davos, Switzerland, June 26-30, 2017. (Poster).

42. Prerak Gupta and **Biman B. Mandal**. Surface topography of silk films influence the functional behavior of vascular cells. TERMIS – Americas, Charlotte, NC, USA; December 3-6, 2017. (Poster).

43. Shreya Mehrotra and **Biman B. Mandal**. *In vitro* fabrication of functional anisotropic 3D constructs using silk-cardiomyocyte monolayers. TERMIS - Americas, Charlotte, NC, USA; December 3-6, 2017. (Poster).

44. Yogendra P. Singh, Mimi Adhikary, Nandana Bhardwaj, Bibhas K. Bhunia, Shreya Mehrotra and **Biman B. Mandal**. Bioinspired three-dimensional construct with silk fiber reinforcement for regeneration of load bearing soft tissues. TERMIS - Americas, Charlotte, NC, USA; December 3-6, 2017. (Poster).

45. Joseph Christakiran M, Prerak Gupta and **Biman B. Mandal**. Osteoinductive and proangiogenic bioactive glass silk composite scaffolds towards resorbable and vascularized bone grafts. TERMIS - Americas, Charlotte, NC, USA; December 3-6, 2017. **(Selected for Top 10 SYIS posters).**

46. Joseph Christakiran M, Philip J. T. Reardon, Rocktotpal Konwarh, Jonathan C. Knowles and **Biman B. Mandal**. Hierarchically structured electrospun silk-bioactive glass composites for osteochondral interface tissue engineering, 6th Asian Biomaterial Congress, Trivandrum, Kerala, India, October 25-27, 2017. (Poster).

47. Yogendra Pratap Singh, Mimi Adhikary, Nandana Bhardwaj, Bibhas Kumar Bhunia and **Biman B. Mandal****. A robust silk fiber-reinforced composite for cartilage tissue engineering, Research Conclave 2017, Indian Institute of Technology Guwahati, March 16-19, 2017. (Poster)

48. Prerak Gupta, Manishekhar Kumar, Nandana Bhardwaj, Jadi Praveen Kumar, C.S.Krishnamurthy, Samit Kumar Nandi and **Biman B. Mandal****. Mimicking form and function of native small diameter vascular conduits using mulberry and non-mulberry patterned silk films. Poster presented at Research Conclave 2017, Indian Institute of Technology Guwahati. March 16-19, 2017. (**BEST POSTER AWARD**)

49. Omkar Majumder, **Biman B. Mandal****. 3D Dynamic Culture Systems for maturation of Tissue engineered Constructs, Research Conclave 2017, Indian Institute of Technology Guwahati. March 16-19, 2017. **(**Model presentation**)**

50. Dimple Chouhan, Bijayshree Chakraborty, Samit K. Nandi and **Biman B. Mandal****. Silk fibroin based functionalized nanofibrous mats for treating diabetic foot ulcers, Research conclave 2017, Indian Institute of Technology Guwahati, March 16-19, 2017. (Poster)

51. Jadi Praveen Kumar and **Biman B. Mandal****. Exploring anticancer properties of silk sericin extracted from the cocoons of north-east silk varieties. 3rd International conference on Perspectives

of cell signaling and molecular medicine. J.C. Bose Institute, Kolkata. January 8-10, 2017. (Poster)

52. Jadi Praveen Kumar, Rocktotpal Konwarh and **Biman B. Mandal**.** Preparation of novel carbonaceous nanoparticle using yoghurt drink (lassi) for anticancer drug delivery application. International Conference on Advances in Biological Systems and Materials Science in NanoWorld. Indian Institute of Technology, Banaras Hindu University, Varanasi. February 19-23, 2017. (Oral)

53. Jadi Praveen Kumar, Rocktotpal Konwarh, and **Biman B. Mandal**.** Exploring the intrinsic fluorescence properties of fibroin and sericin, extracted from silk varieties endemic to NorthEast India. Research Conclave, Indian Institute of Technology Guwahati, Guwahati. March 16-19, 2017. (Poster).

54. Jadi Praveen Kumar, Rocktotpal Konwarh, Manishekhar Kumar, Ankit Gangrade and **Biman B. Mandal**. Green technology derived carbon nanoparticles for anticancer drug delivery, International Conference on Advanced Nanomaterials and Nanotechnology (ICANN), IIT Guwahati, Guwahati, India, December 18-21, 2017. (Poster).

55. Ankit Gangrade and **Biman B. Mandal**. Dual-stimuli responsive minimally invasive injectable silk hydrogel loaded with carbon nanotubes for localized anticancer drug delivery, International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2017), IIT Guwahati, December 18-21, 2017. (Poster).

56. Shreya Mehrotra, Samit Kumar Nandi, **Biman B. Mandal****. Stacking of silk-cardiomyocyte monolayers as a biomimetic approach for cardiac tissue engineering. Research Conclave 2017, Indian Institute of Technology Guwahati. March 16-19, 2017. (**BEST POSTER AWARD**)

57. Shreya Mehrotra, Nandana Bhardwaj, Samit Kumar Nandi, **Biman B. Mandal****. Biomimetic mulberry and non-mulberry silk cell sheets for cardiac patch applications. International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM 2016), Indian Institute of Sciences, Bangalore. December 11-15, 2016. (**BEST POSTER AWARD**)

58. Manishekhar Kumar, Samit K. Nandi, David L. Kaplan, **Biman B. Mandal****. Silk-based macrocapsules for islet-like spheroid formation and sustained insulin production, Research Conclave 2017, Indian Institute of Technology Guwahati. March 16-19, 2017. (Poster)

59. Manishekhar Kumar, Deepika Arora, **Biman B. Mandal****. Silk-based bio-artificial pancreas for sustained insulin production in diabetic patients. Proposal presented in Assam Biotech Conclave, organised by Guwahati Biotech Park. January 5-6, 2017. (Oral)

60. Ankit Gangrade and **Biman B. Mandal****. Folic Acid Functionalized Carbon Nanotubes for Cancer Targeted Drug Delivery, Nanobioteck 2016, All India Institute of Medical Sciences

(AIIMS, New Delhi), Organized by Indian Society of Nanomedicine (ISNM), November 24-26, 2016. (**BEST POSTER AWARD**)

61. Ankit Gangrade and **Biman B. Mandal****. Targeted Delivery of Anticancer Drug using Functionalized Carbon Nanotubes, Research Conclave 2017, Indian Institute of Technology Guwahati, March 16-19, 2017. (Poster)

62. Janani G., **Biman B. Mandal****. "A 3D silk scaffold based culture system for enhanced functionality of hepatocytes", Poster presented at Research Conclave 2017, Indian Institute of Technology Guwahati, March 6-19, 2017. (Poster)

63. Shivanshi Kumar, Janani G., **Biman B. Mandal****. Enhanced urokinase production from HT-1080 cells on silk based scaffolds, Poster presented at Research Conclave 2017, Indian Institute of Technology Guwahati, March 16-19, 2017. (Poster)

64. Bibhas K. Bhunia and **Biman B. Mandal****. Affordable Bio-artificial Disc for Low Back Pain Management, Proposal presented in Assam Biotech Conclave, organized by Guwahati Biotech Park. January 5-6, 2017. (**BEST ORAL PRESENTTAION AWARD**)

65. Bibhas K. Bhunia and **Biman B. Mandal****. Development of Bio-artificial Disc for Low Back Pain Management, Workshop- Innovation Management & Product Commercialization, Indian Institute of Advanced study in Science and Technology, March 3rd, 2017. (Oral)

66. Saket Kumar Singh, Bibhas Kumar Bhunia, Nandana Bhardwaj, Sween Gilotra, **Biman B. Mandal****. Reloadable Silk-Hydrogel Hybrid Scaffolds for Sustained and Targeted Delivery of Molecules, Poster presented at Research Conclave 2017, Indian Institute of Technology Guwahati, March 6-19, 2017. (**BEST POSTER AWARD**)

67. Bibhas K. Bhunia and **Biman B. Mandal****. A Novel Strategy To Develop Silk Based Multilayered Disc-Like Angle-Ply Construct To Recapitulate Form And Function Of Annulus Fibrosus, International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM 2016), Indian Institute of Science, Bangalore, December 11-15, 2016. (Poster)

68. Janani G., **Biman B. Mandal****. "Silk scaffolds for high efficiency bioartificial liver" Oral presentation in SCICON '16 International conference on advanced materials, AMRITA Vishwa Vidyapeetham University, Dec 19-21, 2016. (Oral)

69. Yogendra Pratap Singh, Dimple Chouhan, Manishekhar Kumar, Bibhas Kumar Bhunia, Prerak Gupta, **Biman B Mandal****. Silk based affordable tissue grafts and healthcare products. Indian Institute of Technology Guwahati-Technology Incubation Centre (IITG-TIC 2016), Indian Institute of Technology Guwahati. **(2nd BEST AWARD)**

70. Yogendra Pratap Singh, Nandana Bhardwaj and **Biman B. Mandal****. Potential of Agarose/Silk

Fibroin Blended Hydrogel for In Vitro Cartilage Tissue Engineering, International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM 2016), Indian Institute of Science, Bangalore, December 11-15, 2016. (Oral)

71. Joseph Christakiran M, Philip J. T. Reardon, Rocktotpal Konwarh, Jonathan C. Knowles, **Biman. B. Mandal****. Biomimetic Electrospun Silk-Bioactive Glass Composites for Osteochondral Interfacial Tissue Engineering, Research Conclave 2017, Indian Institute of Technology Guwahati, March 16-19, 2017. (Poster)

72. Dimple Couhan, Samit K. Nandi and **Biman B. Mandal****. Non-mulberry silk fibroin based smart nanofibrous wound dressing for chronic cutaneous ulcers (TERMIS-EU Meeting, 28 June - 1 July 2016).

73. Prerak Gupta, Manishekhar Kumar, Nandana Bhardwaj, Jadi Praveen Kumar, C. S. Krishnamurthy, Samit K. Nandi and **Biman B. Mandal****. Bioengineered silk vascular grafts for coronary artery bypass surgery (TERMIS-EU Meeting, 28 June - 1 July 2016).

74. Yogendra Pratap Singh, Joseph Christakiran M, Bibhas Kumar Bhunia and **Biman B Mandal****. Bi-phasic silk scaffolds for osteochondral tissue engineering (TERMIS-EU Meeting, 28 June - 1 July 2016)**.**

75. Mimi Adhikary, Prerak Gupta, Manishekhar Kumar, Salma Jasmine, Nandana Bhardwaj, Dimple Chouhan and **Biman B. Mandal**.** Hydroxyapatite-silk fiber-silk fibroin tri-composite scaffolds for bone tissue engineering (TERMIS-EU Meeting, 28 June - 1 July 2016).

76. Dimple Chouhan, Bijayshree Chakraborty, Samit K. Nandi and **Biman B. Mandal****. Nonmulberry silk fibroin based functionalized nanofibrous mats as potential wound dressing material. International conference on Biomaterials, Biodiagnostics, Tissue Engineering, Drug delivery and Regenerative medicine (BiTERM 2016). Indian Institute of Technology Delhi. April 15-17, 2016. (**BEST POSTER AWARD).**

77. Yogendra P. Singh, Mimi Adhikary, Salma Jasmine and **Biman B. Mandal****. Silk fibre reinforced silk scaffolds for cartilage tissue engineering. International conference on Biomaterials, Biodiagnostics, Tissue Engineering, Drug delivery and Regenerative medicine (BiTERM 2016). Indian Institute of Technology Delhi. April 15-17, 2016. (**BEST POSTER AWARD).**

78. Prerak Gupta, Manishekhar Kumar, Nandana Bhardwaj, Jadi Praveen Kumar, CS Krishnamurthy and **Biman B. Mandal****. Bioengineered silk grafts for small diameter blood vessel replacement. International conference on Biomaterials, Biodiagnostics, Tissue Engineering, Drug Delivery and Regenerative Medicine (BiTERM 2016). Indian Institute of Technology Delhi. April 15-17, 2016.

79. Biman B. Mandal** and Manishekhar Kumar. Silk-based Macro Encapsulates for Sustained Insulin Release. Oral presentation in 4th TERMIS World Congress**,** Boston, USA. September 10, 2015.

80. Prerak Gupta and **Biman B. Mandal****. Bioengineered silk vascular grafts for bypass surgery. Research Conclave 2016. Indian Institute of Technology Guwahati. March 17-20, 2016.

81. Dimple Chouhan and **Biman B. Mandal****. Exploring silk fibroin based nanofibrous matrix as skin substitute material. Research Conclave 2016. Indian Institute of Technology Guwahati. March 17-20, 2016.

82. Bibhas K. Bhunia and **Biman B. Mandal****. Bioengineered silk construct: A prospective solution to intervertebral disc degeneration. Research Conclave 2016. Indian Institute of Technology Guwahati. March 17-20, 2016.

83. Shreya Mehrotra and **Biman B. Mandal****. Silk based Biomimetic approach for cardiac tissue engineering. Research Conclave 2016. Indian Institute of Technology Guwahati. March 17-20, 2016.

84. Yogendra P. Singh and **Biman B. Mandal****. Silk/agarose hydrogel for cartilage tissue engineering. Research Conclave 2016. Indian Institute of Technology Guwahati. March 17-20, 2016.

85. M Janani G and **Biman B. Mandal****. Exploring silk fibroin scaffolds in liver tissue engineering. Research Conclave 2016. Indian Institute of Technology Guwahati. March 17-20, 2016.

86. Manishekhar Kumar and **Biman B. Mandal****. Novel silk macro-encapsulates for prolonged islet viability and sustained insulin release for Type 1 diabetes. Poster presented in Advances in Polymer Science & Technology (APST-2015) National conference, IASST, Guwahati, India, March 13, 2015. **(BEST POSTER AWARD)**

87. Jadi Praveen Kumar and **Biman B. Mandal****. Antioxidant Potency of North-East Indian Silkworm Cocoon Based Sericin: Effect of Extraction Protocols. Poster presented in Advances in Polymer Science & Technology (APST-2015) National conference, IASST, Guwahati, India, March 13, 2015. **(BEST POSTER AWARD)**

88. Prerak Gupta, Manishekhar Kumar, Jadi Praveen Kumar and **Biman B. Mandal****. Small diameter tissue engineered blood vessel. Poster presented in Advances in Polymer Science & Technology (APST-2015) National conference, IASST, Guwahati, India, March 13, 2015.

89. Dimpal Chouhan and **Biman B. Mandal****. Mulberry and non-mulberry silk fibroin based electrospun mats as skin-substitute materials. Poster presented in Advances in Polymer Science & Technology (APST-2015) National conference, IASST, Guwahati, India, March 13, 2015.

90. Manishekhar Kumar and **Biman B. Mandal****. Silk Based Bio-Artificial Pancreas. Poster presented in International Conference on Polymeric Biomaterials, Bioengineering & Biodiagnostics-2014 organized by ENEA, Rome, Italy and IIT Delhi under the auspices of Asian Polymer Association. October 27-30, 2014.

91. Garima Singh,Manishekhar Kumar and **Biman B. Mandal****. Silk based injectable hydrogel as potential cell delivery matrix. Poster presented in Advances in Polymer Science & Technology (APST-2015) National conference, IASST, Guwahati, India, March 13, 2015.

92. Shreya Mehrotra and **Biman B. Mandal****. Silk based biomaterials for cardiac tissue engineering. Poster presented in 2nd symposium on Advances in sustainable polymer (ASP-15), IIT Guwahati, India, January 21-22, 2015.

93. Manishekhar Kumar and **Biman B. Mandal****. Silk Based Pancreatic Tissue Engineering. Poster presented in 2nd symposium on Advances in sustainable polymer (ASP-15), IIT Guwahati, India, January 21-22, 2015.

94. Rocktotpal Konwarh and **Biman B. Mandal****. Magnetic-field Responsive And Free Radical Scavenging Electrospun Silk Fibroin Mats. Poster presented in 2nd symposium on Advances in sustainable polymer (ASP-15), IIT Guwahati, India, January 21-22, 2015.

95. Prerak Gupta, Manishekhar Kumar, Jadi Praveen Kumar, Salma Jasmine and **Biman B. Mandal****. A novel approach to fabricate silk-based small diameter vascular grafts. Poster presented in 2nd symposium on Advances in sustainable polymer (ASP-15), IIT Guwahati, India, January 21-22, 2015.

96. Jadi Praveen Kumar and **Biman B. Mandal****. Mulberry and Non-Mulberry Silk Sericin Blended Polymer Matrices for Tissue Engineering Applications. Poster presented in 2nd symposium on Advances in sustainable polymer (ASP-15), IIT Guwahati, India, January 21-22, 2015.

97. Biman B Mandal**. Indian Silk: From Textiles to Tissue Engineering. Oral talk in International Silk Conference, Fudan and Soochow University, Shanghai, China, October 8-12, 2014.

98. Biman B Mandal**. Silk Matrix Based Tissue Engineering. Oral talk in Healthcare India, February 20-23, 2012, International conference, New Delhi.

99. Biman B Mandal**. Silk: A promising Biomaterial for Tissue Engineering. Oral talk in MIBISEM-2013 conference, North Bengal University (NBU), February 25-26, 2013 Siliguri, India.

100. **Biman B. Mandal****. Role of tissue architecture towards functionality: A silk study. Oral talk at 2nd International conference on Medical materials, devices and regenerative medicine (MMDRM -2014), Kathmandu, Nepal, January 11-13, 2014.

101. Saket K. Singh and **Biman B. Mandal****. Hydrogel infused 3D silk scaffolds for controlled drug release. Oral talk at TERMIS AP International conference, Shanghai-Wuzhen, China, October 23-26, 2013.

102. Nandana Bhardwaj, Dipali Devi, Nam-Joon Cho, **Biman B. Mandal****. Development of silk fibroin-Keratin 3D scaffolds as a dermal substitute for skin tissue engineering. Oral talk at TERMIS AP International conference, Shanghai-Wuzhen, China, October 23-26, 2013.

103. Saket K. Singh and **Biman B. Mandal****. Cytocompatible silk scaffold-hydrogel matrix for controlled drug release. Poster at International Conference on Design of Biomaterial, BIND-12, IISC Bangalore, December 9-11, 2012.

104. **Biman B Mandal**, A. Grinberg, E. S. Gil, B. Panilaitis, David L. Kaplan. High strength silk protein scaffolds for bone repair. 3rd TERMIS World Congress 2012, Vienna, Austria, September 05-08, 2012.

105. J. Rnjak-Kovacina, L. S. Wray, **Biman B. Mandal**, E. S. Gil, A. S. Weiss, David L. Kaplan. Versatile biomaterial scaffold platform for critical-sized tissue construct. 3rd TERMIS World Congress 2012, Vienna, Austria, September 05-08, 2012.

106. Lindsay S. Wray, Jelena Rnjak-Kovacina, **Biman B. Mandal**, Xiao Hu, David L. Kaplan. Versatile biological scaffolding platform for building critically-sized tissue constructs containing nutrient delivery conduits. The 7th Symposium on Biologic Scaffolds for Regenerative Medicine, Napa Valley, CA.

107. **Biman B. Mandal**, S. H. Park, E. S. Gil, David L. Kaplan. Hierarchical silk scaffolds for Intervertebral disc engineering. Oral talk at TERMIS AP, 2011, Singapore, August 3-5, 2011.

108. **Biman B. Mandal** and David Kaplan. Hierarchical silk laminates for tissue formation. Poster presented at BMES conference, Austin, Texas, USA, October 6-9, 2010.

109. L. W. Tien, E. S. Gil, S. H. Park, **Biman B. Mandal** and David L. Kaplan. Patterned silk film scaffolds for lamellar bone tissue engineering. Poster, BMES conference, Austin Texas, USA, October 6-9, 2010.

110. **Biman B. Mandal**, S. H. Park, E. S. Gil and David Kaplan. Multilayered silk scaffolds for meniscus tissue engineering. Oral talk at TERMIS EU 2010, Ireland, June 13-17, 2010.

111. E. S. Gil, **Biman B. Mandal**, S. H. Park, J. Merchant, F. Omenetto and David Kaplan. Corneal Tissue Engineering Using Patterned and Porous Silk Films. Poster presented at 2nd Termis World Conference, Seoul, Korea, August 31- September 3, 2009.

112. C. Acharya, R. Dash, **Biman B. Mandal**, J. Kundu, N. Bharadwaj, S. Nayak, S. Talukdar, M. Dewan and B. Kundu and S. C. Kundu. Non-mulberry Silk Proteins: Advanced Natural Biomaterial for Tissue Engineering and Drug Delivery. Oral presentation at 2nd Termis World Conference, Seoul, Korea, August 31- September 3, 2009.

113. **Biman B. Mandal** and S.C. Kundu**.** Self assembled silk sericin/poloxamer nanoparticles as nanocarriers of hydrophobic and hydrophilic drugs for targeted delivery. Invited lecture at 3rd Indo-Australian Conference on Biomaterials, Implants, Tissue engineering and Regenerative Medicine, Australia, January 14-16, 2008.

114. **Biman B. Mandal** and S. C. Kundu. Silk proteins fibroin and sericin of non-mulberry tropical tasar silkworm *Antheraea mylitta* as potential biopolymers for tissue engineering. Oral and poster presented at International conference on Biomaterials and Tissue Engineering for Biotechnological Applications (BTEB 2008), IIT Kharagpur, India, November 22-24, 2008.

115. **Biman B. Mandal**, Chitrangada Acharya, Rupesh Dash, Joydip Kundu and S. C. Kundu. Non-mulberry silk fibroin protein as biomaterial. Presented as an invited lecture at International conference on "Fibrous proteins", Australia, March 31-April 2, 2008.

116. **Biman B. Mandal**, Anjana S. Priya and S. C. Kundu. Novel silk protein sericin-gelatin 2D films and 3D scaffolds: Fabrication, characterization and optimization for potential tissue engineering applications. Oral presentation at International Conference on Cellular and Molecular Bioengineering, Singapore, December 10-12, 2007.

117. Chitrangada Acharya, Rupesh Dash, **Biman B. Mandal,** Joydip Kundu, S. C. Kundu. Presented as an invited lecture at International workshop on Cell based tissue engineering using natural polymers (Silk: Medical applications), Gwangju Institute of Science and Technology, Gwangju, Korea, November 28-29, 2007.

118. Chitrangada Acharya, Rupesh Dash, **Biman B. Mandal,** Joydip Kundu, S. C. Kundu. Silk protein matrices for cell-based biomedical applications. Presented as an invited lecture at

International conference on "Future trends in composite materials and processing", IIT Kanpur, India, December 12-14, 2007.

119. Participated in 7Th Indo-US Flow Cytometry Workshop on "Proliferation, Apoptosis and Signal Transduction", School of Biotechnology, JNU, New Delhi, February, 10-14, 2007.

120. Participated in International Conference on "Animal models in Stem Cells", EPFL, Switzerland, December 15, 2006.

121. Participated in National Conference on "Biomaterial, Tissue Engineering and Medical Diagnostics- 2006" at IIT Delhi, February 24-26, 2006.

Date: January 20, 2021 (Dr. Biman B Mandal)
Place: IIT Guwahati