



Dr. Santanu Dhara

Professor, School of Medical Science and Technology

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Education:

- Graduation and Master’s Degree: Vidyasagar University, 1995 and 1997;
- Received Ph.D. degree: 26th Feb, 2005, from Materials Science Centre, Indian Institute of Technology, Kharagpur, India

Thesis Title: Rheology of aqueous alumina slurries and their use in gelation forming of dense and porous alumina shapes and structures

- ✓ Qualified in Graduate Aptitude Test in Engineering (GATE) with 92.1 percentile
- ✓ Qualified in National Eligibility Test (NET) with CSIR category.

Department/Institute/University: School of Medical Science and Technology

Date of Birth: 31st October, 1974

Post-Doctoral Fellowship Mentor: Prof. Bo. Su, University of Bristol

PhD Mentor: Prof. Parag Bhargava, IIT Bombay

Position and Employment:

Sl.	Institution Place	Position	From (Date)	To (date)
1.	I.I.T., Kharagpur	Professor	26/02/2018	Till date
2.	Judge Business School University of Cambridge (UK)	BIRAC Fellow IGNITE Program	6/07/2014	19/07/2014
3.	I.I.T., Kharagpur	Associate Professor	13/01/2012	26/02/2018
4.	I.I.T., Kharagpur	Assistant Professor	01/06/2007	13/01/2012
5.	DMRL, Hyderabad (DRDO)	Scientist ‘C’	07/08/2006	24/05/2007
6.	University of Bristol (UK)	Research Assistant	01/04/2005	31/07/2006
7.	University of Birmingham (UK)	Research Fellow	24/05/2004	31/03/2005

Honors/Awards:

- ✓ Received 2022-IIM-Materials Technology Startup Award IIM, ATM, Hyderabad Chapter, 2022 (Founder of Amnivor Medicare Pvt. Ltd.)
- ✓ For best idea pitching in Innovation, Design and Entrepreneurship (IDE) Bootcamp organized by Ministry of Education’s Innovation Cell (MIC) & All India Council for Technical Education (AICTE) - June 2023
- ✓ Faculty Excellence Award by IIT KGP, 2022

- ✓ Received CII best IP profile for IIT Kharagpur among different academic organizations in India in 2021-22 during the tenure of PIC-IPR and IR
- ✓ SBAOI – Best PhD Thesis Awards Committee member
- ✓ TIFAC: Technology status and forecast of bioprinting technology
- ✓ Evaluation Committee: BIRAC
- ✓ Cover page image in Materials Today (December, 2017) by winning microscopy competition organized by Zeiss
- ✓ Leadership/Scientist Award for TERMIS-AM 2016 Conference by Two students (Mr. K. Kapat and Dr. B. Das) and TERMIS-AM 2017 Dr. P Dadhich
- ✓ Awarded gold medal in the DST-Lockheed Martin India Innovation Growth Programme (IIGP) 2016, a PAN India Innovators' Competition held at Federation House (FICCI), Tansen Marg, New Delhi for 'Simple low cost processing of metallic foam for diverse applications'
- ✓ BIRAC SRISTI GYTI award at organized at Rastrapati Bhawan, New Delhi in March'2016 for 'a simple cost effective titanium foam for skeletal tissue reunion'
- ✓ Selected among Top 8 Business plan in the 'Honourable Mention category at TERMIS World Congress 2015 held at Boston, USA on 8-11 September 2015
- ✓ Awarded gold medal in the 2015 DST - Lockheed Martin India Innovation Growth Programme (Joint initiative of the DST, FICCI, Lockheed Martin Corporation; Indo-US Science and Technology Forum, Stanford Graduate School of Business and University of Texas)
 - 'Bone grafts designed via biomimetic approach from natural origin materials'
 - 'Development of X – ray visible polymers for non – invasive imaging applications'
- ✓ For best concept note 'Bone graft Designed via Biomimetic Approach from Natural Origin Materials' under 'Health Tech Innovations – 2015' organized by DeitY, SAMEER in technical collaboration with NHRSC & ICMR under theme 'Technology Innovations in Treatment of Disease' organized on 9th-10th January, 2015
- ✓ BIRAC SRISTI GYTI award 2015 at Rastrapati Bhawan for contribution entitled 'Development of X-ray visible polymers via in situ iodination–crosslinking for non-invasive real time imaging' on 8th March, 2015
- ✓ BIRAC fellowship for Entrepreneurial learning under Ignite program at University of Cambridge in 2014
- ✓ EPSRC fellowship UK 2004-2006
- ✓ Fast Track Scheme for Young Scientists (FAST) funded by DST, Govt. India (2010)
- ✓ Highlighted in the MRS Bulletin News, 30 [9] 628 (2005) for 'Synthesis of Nano Crystalline Alumina Using Egg White'
- ✓ Awarded a silver medal for excellent technology based innovations 'Protein Coagulation Casting of Ceramics' at Incubiz (Anveshan III) organized by IIM Ahmedabad in March 2005
- ✓ Selected to present in the student's session at the Annual Indian Ceramic Society Conferences held at Hyderabad (January 2001) and Jaipur (January 2002), respectively
 - 'Challenges and opportunities in ceramic manufacturing via gelcasting'

- ‘Direct casting of ceramic foams–microstructure and processing relationships’
- ✓ Best posters and presentations awards in eight occasions

Technical Consultancy:

- Delivery of hydroxyapatite palette to ITC Ltd.
- Design, development of sample holders and characterization of IOL lenses for cataract surgery – SAP and PAP
- Involved in consultancy project of IIT Kharagpur - ARCI, Hyderabad
- Fabricated and supplied specialized ceramic crucibles (dimensions – 3 mm I.D., 5 mm O.D., 5 mm Height) for thermal analysis applications to M/s Jay Crucibles

Research Students:

- Doctoral degree awarded – Thirty students under single guidance or joint guidance
- Guided ten PG students and four UG students for their final year project and thesis.
- Twenty-three PhD students are working for their doctoral dissertation

Member of Organizations:

- Society for Polymer Science, India (life member)
- STERMI (life member)
- SBAOI (life member)
- The American Ceramic Society (2004-2005)
- The Indian Ceramic Society (2001-2003)
- Powder Matrix, UK (2004-2007)
- TERMIS

Invited Lectures:

- Recycling of Biowaste Materials for Orthopaedic application at Workshop on Biomechanics, Implants and Related Medical Devices, IEST, Shibpur, 14-15th Feb 2017
- Customized manufacturing of Organizing Chair, EMCA-2017, March 15-17, 2017, NIT Durgapur, WB, INDIA
- ‘Materials and strategies for Health Care’ an invited lecture in Jadavpur University (2012).
- ‘Nano-technology in Medicine’ School of Pharmaceutical Science, S’O’A University, Bhubaneswar (2011).
- “Introduction to Bio-Medical Science for Diagnosis and Rehabilitation” at P. K. College, Contai (2011).
- “Future perspective of Bone Tissue Engineering”, Materails-10 at Physics, NIT Durgapur (2010).
- “Recent Trends in Hard Tissue Engineering’ MR10 at Metallurgical and Materials Engg., IIT Mumbai (2010).

- ‘Current State of the Art in Hard Tissue Engineering for better Osteo-integration’ national workshop on Ceramics as Biomaterials at NIT Rourkela (2010).
- ‘Development of Bioactive Scaffold for Tissue Engineering, at New Delhi, Indo-Australian Workshop on New Biomedical Devices (2009)
- ‘Development of Wound Dressing System’, at New Delhi, Indo-Australian Workshop on New Biomedical Devices (2009).
- “Rheological Characterization of Colloidal Slurries” Short Term Course on Advanced Ceramics Processing & Characterization organized by NIT, Rourkela (2008).
- “Advanced Processing of Ceramics via Colloidal Slurry”, Short Term Course on Advanced Ceramics Processing & Characterization organized by NIT, Rourkela (2008)
- “Advanced Shape Forming of Ceramics”, International Conference on High Tech. Alumina organized by CGCRI, Kolkata on 28 Feb. to 1st March’ 2008.
- ‘Protein Coagulation Casting of Ceramics’, DMRL Hyderabad 2005

Teaching:

- MM61316 (3-1-0) BIOMATERIALS
- MM69322 (0-0-3) BIOMATERIALS LAB
- MM61314 (3-0-0) TRANSLATIONAL HEALTH RESEARCH (partly)
- MM61514 (3-1-0) Molecular Imaging (partly)
- MM73337 (3-1-0) Advanced Biomaterials with Laboratory practical
- MM60022 (3-1-0) Nanomaterials and Device in Medicine

Achievements:

- Developed at least six platform technologies in various domain of materials processing for healthcare
- Three technologies are in pilot scale studies towards commercialization
- Entrepreneurship learning at Judge Business School at University of Cambridge
- Ten students completed their doctoral work under single and joint guidance
- Formed a startup for in-house collagen production from biowaste and funded by BIRAC; Now TATA STEEL providing fund for large scale manufacturing and certification

Total Publications: 250; **Scopus Citations:** 65388; **h – index:** 46;

Google Citation: 8087; **h –index:** 53, **i10-index:** 151

Book chapters: 20. **Research Papers, Reports:** 231. **General articles:** 2

Others (Invited Articles): 4. **National Journal:** 10

Patents: 40 (US; PCT)

Patents:

1. Venkata Sundeep Seesala, Santanu Dhara, ‘Design for ceramic dental implant with trabecular porous surface’ Design patent No. 352875-001
2. ‘Multimodal air filtering unit for working environment, and filtration testing thereof’ Pravin Vaidya, S Dhara, Tapas Bandhyopadhyay, Nandita Kedia, Arindam Maondal, Zahiruddin Quazi, Santi Mandal, Indian Application No. 202233020810, 2022
3. “Smart breathing air purifier and its application in personal protective

- equipment” P Vaidya, S Dhara, Sangeeta Das Bhattacharya, Tapas Bandhyopadhyay, Patent Application No. 202131007893, 2021
4. ‘Design for ceramic dental implant with trabecular porous surface’ Venkata Sundeeep Seesala, Santanu Dhara, Design patent No. 352875-001
 5. “A Green Body Composition and Functional Gradient Material Prepared Thereof” Venkata Sundeeep Seesala, Santanu Dhara, Indian Patent filed with Application No.: 201931022298 dated June 5, 2019, PAA 2942
 6. “A Green Body Composition and Functional Gradient Material Prepared Thereof”, Venkata Sundeeep Seesala, Santanu Dhara, International Filing: PCT International Application No. PCT/IB2019/059435, Dated November 4, 2019
 7. A Microfluidic Bioreactor Device for Vascular Bone Modelling and a Method thereof – B. Das, V. S. Seesala, S Dhara, Indian Patent Application No. 2018310119077 dated 22nd May, 2018
 8. High throughput Isolation of Collagen type II from Capra Hircus Biowaste and its application thereof Indian Patent submitted 2018 (PAA2799)
 9. Bioactive titanium and/or alloy based nanostructures, P. K. Srivas, K. Kapat, S. Dhara, 201711023608 filed on 5th July, 2017 (Jointly by DRDO and IIT Kharagpur)
 10. Long term cell tracking with inherent reactive oxygen species scavenging using biomass derived carbon nanodots (CNDs) and application thereof: Bodhisatwa Das, Prabhash Dadhich, Santanu Dhara (Filed: Patent Application no: 439/KOL/2015)
 11. ‘Preparation of porous structures with controlled and continuous variation by additive manufacturing’, Sumanta Mukherjee, P Saha, S Dhara, Application No. 201631013286 dated April 15, 2016 (Indian Patent. TEMP/E-1/11918/2016-KOL)
 12. ‘Fiber-Cell construct/Tissue Analogues Comprising Cell Laden unit and Process for Manufacturing thereof’ P. Ghosh, Arun Prabhu R., S. Dhara, Indian Patent. 278/Kol/2015
 13. ‘Net Shape Forming via Plastic Dough Processing of Polymer-Metal Powder Blend and applications thereof’, P. K. Srivas, K. Kapat, S. Dhara, US Patent Application No. 14/939, 605 dt. 24th Nov, 2015
 14. ‘Acetabular cup implant and a method for additive manufacturing of the same based on Geodesical dome approach with continuous radially graded porosity’, Sumanta Mukherjee, P Saha, S Dhara, Application no. 201631025559, 2015.
 15. ‘Hybrid composite scaffold preparation and application thereof’, P. Dadhich, B. Das, S. Dhara, Indian Patent. 983/KOL/2014
 16. ‘Radiopaque surgical suture, mesh, stent and glue with antimicrobial property’, H. Singh Pawar, N. K. Francis, P. Ghosh, S. Dhara, Indian patent.1342/KOL/2014
 17. ‘Net Shape Forming via Plastic Dough Processing of Polymer-Metal Powder Blend and applications thereof’, P. K. Srivas, K. Kapat, S. Dhara, Indian Patent Application No. 1173/KOL/2014 dt. 24th Nov, 2015
 18. ‘Chitosan based biodegradable materials for biomedical applications’, P. Ghosh, M. Das, S. Dhara, Indian patent. 566/KOL/2013
 19. ‘A process for fabrication of customized ceramic products by CNC machining of green ceramics compacts using diamond impregnated tool’, S. Mohanty, S. Dhara, Indian Patent. 588/KOL/2012
 20. ‘A composition for consolidation of dense ceramic compacts’, S. Dhara, D. Ghosh and P. Bhargava, Indian Patent. 479/KOL/2003.
 21. ‘Compositions and process for consolidation of porous bodies’, S. Dhara, M. Pradhan and P. Bhargava, Indian Patent. 331/Cal/02
 22. ‘A composition for use in gelation forming of ceramics and a process for the preparation thereof’ S. Dhara and P. Bhargava, Indian Patent. 595/Cal/2000

Technology developed:

- Protein Coagulation Casting of Ceramics for dense and porous ceramics, nanopowder synthesis (PhD thesis) – Silver medal Incubiz (Anveshan III) organized by IIM Ahmedabad in 2005
- Plastic Dough processing of metal powders for dense and porous Metal – Gold medal from DST - Lockheed Martin India Innovation Growth Programme in 2016; BIRAC SRISTI award in 2016
- Radio-opaque antimicrobial polymers for biomedical applications -Gold medal from DST - Lockheed Martin India Innovation Growth Programme in 2015; BIRAC SRISTI award in 2015
- Isolation of collagen and formulation of superabsorbent wound dressing – Technology modified for pilot scale manufacturing under Amnivor Medicare Pvt. Ltd. by BIG funding (DBT)
- Large scale manufacturing of nanofibers- 2017
- Recycling of mineral based biowastes for direct printed customized 3D printed bone graft - Gold medal from DST - Lockheed Martin India Innovation Growth Program in 2015
- Placenta derived ECM matrices for tissue regeneration – 2016-2017
- Microwave based rapid synthesis of carbon nano-dots and their derivative for live cell imaging and therapeutic – 2014-2017

Current status of Students after graduation:

After graduation from BMTE, several candidates joined as faculty in the premier institutes –

1. Dr. Falguni Pati, Head, Department of Biomedical Engineering at IIT Hyderabad, IIT Hyderabad
2. Dr. Ananya Barui, Assistant Professor, Center of Healthcare Science and Technology, IEST Shibpur
3. Dr. Pallab Datta, Assistant Professor, Department of Pharmaceutics, National Institute of Pharmaceutical Education and Research, Kolkata
4. Dr. Soumi Dey Sarkar, R&D, Himalaya, L'Oréal, Unilever
5. Dr. Saralashrita Mohanty, Scientists at National Institute of Science Education and Research, Department of Atomic Energy, Govt. of India
6. Dr. Paulomi Ghosh, Assistant Professor, Institute of Health Sciences, Presidency University, Cincinnati Children Hospital
7. Dr. Sanal P Sebastian, Scientist at MG University, India
8. Dr. Prabhash Dadhich, Wake forest University, CellfBio LLC
9. Dr. Pallabi Pal, University of California, Irvine
10. Dr. Bodhisatwa Das, Assistant Professor, DBME, Indian Institute Of Technology Ropar, India
11. Dr. Kaushik Kapat, Assistant Professor (Medical Devices), NIPER Kolkata
12. Dr Pavan Kumar Srivas, Scientist at Glidewell Dental, US
13. Dr. Sumanta Mukherjee, Assistant Professor, BIT Sindri
14. Dr. Aditya Parekh, Faculty
15. Dr. Arun Prabhu, Harvard Medical school
16. Dr. Kamakshi Bankoti, Harvard University
17. Dr. Sayanti Datta, University of Illinois at Chicago
18. Dr. Pritiprasanna Maity, Medical University of South Carolina
19. Dr. Preetam Guha Ray, ETH Zürich (Eidgenössische Technische Hochschule Zürich)
20. Dr. Abir Datta, University College London, Department of Ortho and MSK Science
21. Dr. Basil Mathai, School of Mechanical Engineering, University of Leeds
22. Dr. Venkatesh Sundeep Seesala, R&D, TATA Steel Ltd
23. Dr. Arpita Roy, University of California, Los Angeles
24. Dr. Gourav Dinesh Kulkarni, Instituto de Micro y Nanotecnología, CSIC

25. Dr. Krishna Chaitanya Sunku Reddy, Digident, India
26. Dr. Trina Roy
27. Dr. Rahul Talukdar
28. Dr. Lakshmi Mukundan
29. Dr. Ragavi Rajasekharan
30. Dr. Atul Ojha

Journal Publications:

1. Sunka, K.C., Byram, P.K., Paikkattil, N., Chaudhuri, B.R. and Dhara, S., 2024. "A Novel Intralamellar Semi-bioresorbable Keratoprosthesis - Part B: Surface Functionalization and Physico-chemical Characterization Towards Site-specific Cellular Activity" *Journal of Applied Polymer Science*, 141(28), p.e55644. Impact Factor: 2.7
2. Sunka, K.C., Byram, P.K., Paikkattil, N., Chaudhuri, B.R. and Dhara, S., 2024. A novel intralamellar semi-bioresorbable keratoprosthesis—Part A: Design conception, material perspective, and device manufacturing. *Journal of Applied Polymer Science*, 141(28), p.e55644. Impact Factor: 2.7
3. Pandey, A.K., Nath, T.K. and Dhara, S., 2024. Effect of reaction temperatures on optical properties of clove buds derived carbon dots for targeting nucleolus. *Journal of Industrial and Engineering Chemistry*. Impact Factor: 5.9
4. Sunka, K.C., Ghosh, A., Ganguly, P., Chaudhuri, B.R. and Dhara, S., 2024. A new approach of aspheric intralamellar keratoprosthesis optic design made with poly (2-hydroxy ethylmethacrylate) hydrogel. *Biomedical Physics & Engineering Express*, 10(4), p.045035. Impact Factor: 1.3
5. Hadem, H., Ojha, A.K., Mitra, A., Rajasekaran, R., Vaidya, P.V., Dhara, S., Das, S. and Das, K., 2024. Mixed alkali effect on the mechanical, thermal and biological properties of 58S bioactive glass. *Ceramics International*. Impact Factor: 5.1
6. Prabhakar, P., Mukherjee, S., Kumar, A., Rout, R.K., Kumar, S., Verma, D.K., Dhara, S., Rao, P.S., Maiti, M.K. and Banerjee, M., 2024. In Silico, In Vitro and Ex Vivo Evaluation of the Antihyperglycaemic, Antioxidant and Cytotoxic Properties of *Coccinia grandis* L. Leaf Extract. *Food Technology and Biotechnology*, 62(2), pp.188-204.
7. Ojha, A.K., Rajasekaran, R., Hansda, A.K., Choudhury, P., Biswas, A., Sharma, S., Chaudhuri, P.P., Dogra, N., Goswami, R., Chaudhury, K. and Dhara, S., 2024. Biochemical and immunomodulatory insights of extracellular matrix from decellularized human whole cervix: recellularization and in vivo ECM remodeling interplay. *Biofabrication*, 16(3), p.035014. Impact Factor: 8.2
8. Palai, D., De, A., Prasad, P.S., Roy, T., Mukherjee, S., Dhara, S., Das, S. and Das, K., 2024. Feasibility Insights of the Green-Assisted Calcium-Phosphate Coating on Biodegradable Zinc Alloys for Biomedical Application: In Vitro and In Vivo Studies. *ACS Applied Materials & Interfaces*, 16(19), pp.24274-24294. Impact Factor: 8.7
9. Hadem, H., Mitra, A., Ojha, A.K., Rajasekaran, R., Satpathy, B., Das, D., Mukherjee, S., Dhara, S., Das, S. and Das, K., 2024. Electrophoretic Deposition of 58S Bioactive Glass-Polymer Composite Coatings on 316L Stainless Steel: An Optimization for Corrosion, Bioactivity, and Cytocompatibility. *ACS Applied Bio Materials*, 7(5), pp.2966-2981. Impact Factor: 4.6
10. Dhar, D., Ghosh, S., Mukherjee, S., Dhara, S., Chatterjee, J. and Das, S., 2024. Assessment of chitosan-coated zinc cobalt ferrite nanoparticle as a multifunctional theranostic platform facilitating pH-sensitive drug delivery and OCT image contrast

- enhancement. *International Journal of Pharmaceutics*, 654, p.123999. **Impact Factor: 5.3**
11. Dixit, K., Bora, H., Chakrabarti, R., Saha, B., Dogra, N., Biswas, S., Sengupta, T.K., Kaushal, M., Rana, S., Mukherjee, G. and Dhara, S., 2024. Thermoresponsive keratin-methylcellulose self-healing injectable hydrogel accelerating full-thickness wound healing by promoting rapid epithelialization. *International Journal of Biological Macromolecules*, 263, p.130073. **Impact Factor: 7.7**
 12. Das, M., Dixit, A., Jana, A., Karthik, R., Sreeram, P.R., Bora, H., Dhara, S., Panda, S.K. and Tiwary, C.S., 2024. Enhanced toughness and strength of 3D printed carbide-oxide composite for biomedical applications. *Journal of the Mechanical Behavior of Biomedical Materials*, 150, p.106290. **Impact Factor: 3.3**
 13. Byram, P.K., Mukherjee, M., Rahaman, M., Bora, H., Kaushal, M., Dhara, S. and Chakravorty, N., 2024. Bioactive self-assembling silk fibroin–sericin films for skin tissue engineering. *Biomedical Materials*, 19(2), p.025009. **Impact Factor: 3.9**
 14. Maji, P., Neethirajan, J., Chaitanya Sunka, K., Aziz, B., Dhara, S., Ghosh, B. and Naskar, K., 2024. Thermoresponsive Shape Memory Behavior of an Acylated Nanofibrillar Cellulose-Reinforced Thermoplastic Elastomer Composite. *ACS Applied Polymer Materials*, 6(2), pp.1362-1375. **Impact Factor: 4.7**
 15. Venkata Sundeep Seesala, Ragavi Rajasekaran, Atul Kumar Ojha, Arjun Mahato, Roja Rani Korrayi, Bodhisatwa Das, Satya Prasad Venugopal, Shibayan Roy, Santanu Dhara, “A novel functional gradient hydroxyapatite coating for zirconia-based implants”, *Surface and Coatings Technology*, 469, 25, 2023. **Impact Factor: 5.4**
 16. Sunka, K.C., Byram, P.K., Paikkattil, N., Chaudhuri, B.R. and Dhara, S., 2024. A novel intralamellar semi-bioresorbable keratoprosthesis—Part A: Design conception, material perspective, and device manufacturing. *Journal of Applied Polymer Science*, 141(28), p.e55644. **Impact Factor: 2.7**
 17. Pandey, A.K., Nath, T.K. and Dhara, S., 2024. Effect of reaction temperatures on optical properties of clove buds derived carbon dots for targeting nucleolus. *Journal of Industrial and Engineering Chemistry*. **Impact Factor: 5.9**
 18. Sunka, K.C., Ghosh, A., Ganguly, P., Chaudhuri, B.R. and Dhara, S., 2024. A new approach of aspheric intralamellar keratoprosthesis optic design made with poly (2-hydroxy ethylmethacrylate) hydrogel. *Biomedical Physics & Engineering Express*, 10(4), p.045035. **Impact Factor: 1.3**
 19. Hadem, H., Ojha, A.K., Mitra, A., Rajasekaran, R., Vaidya, P.V., Dhara, S., Das, S. and Das, K., 2024. Mixed alkali effect on the mechanical, thermal and biological properties of 58S bioactive glass. *Ceramics International*. **Impact Factor: 5.1**
 20. Prabhakar, P., Mukherjee, S., Kumar, A., Rout, R.K., Kumar, S., Verma, D.K., Dhara, S., Rao, P.S., Maiti, M.K. and Banerjee, M., 2024. In Silico, In Vitro and Ex Vivo Evaluation of the Antihyperglycaemic, Antioxidant and Cytotoxic Properties of *Coccinia grandis* L. Leaf Extract. *Food Technology and Biotechnology*, 62(2), pp.188-204.
 21. Ojha, A.K., Rajasekaran, R., Hansda, A.K., Choudhury, P., Biswas, A., Sharma, S., Chaudhuri, P.P., Dogra, N., Goswami, R., Chaudhury, K. and Dhara, S., 2024. Biochemical and immunomodulatory insights of extracellular matrix from decellularized human whole cervix: recellularization and in vivo ECM remodeling interplay. *Biofabrication*, 16(3), p.035014. **Impact Factor: 8.2**
 22. Palai, D., De, A., Prasad, P.S., Roy, T., Mukherjee, S., Dhara, S., Das, S. and Das, K., 2024. Feasibility Insights of the Green-Assisted Calcium-Phosphate Coating on Biodegradable Zinc Alloys for Biomedical Application: In Vitro and In Vivo

- Studies. ACS Applied Materials & Interfaces, 16(19), pp.24274-24294. **Impact Factor: 8.7**
23. Hadem, H., Mitra, A., Ojha, A.K., Rajasekaran, R., Satpathy, B., Das, D., Mukherjee, S., Dhara, S., Das, S. and Das, K., 2024. Electrophoretic Deposition of 58S Bioactive Glass-Polymer Composite Coatings on 316L Stainless Steel: An Optimization for Corrosion, Bioactivity, and Cytocompatibility. ACS Applied Bio Materials, 7(5), pp.2966-2981. **Impact Factor: 4.6**
 24. Dhar, D., Ghosh, S., Mukherjee, S., Dhara, S., Chatterjee, J. and Das, S., 2024. Assessment of chitosan-coated zinc cobalt ferrite nanoparticle as a multifunctional theranostic platform facilitating pH-sensitive drug delivery and OCT image contrast enhancement. International Journal of Pharmaceutics, 654, p.123999. **Impact Factor: 5.3**
 25. Dixit, K., Bora, H., Chakrabarti, R., Saha, B., Dogra, N., Biswas, S., Sengupta, T.K., Kaushal, M., Rana, S., Mukherjee, G. and Dhara, S., 2024. Thermoresponsive keratin-methylcellulose self-healing injectable hydrogel accelerating full-thickness wound healing by promoting rapid epithelialization. International Journal of Biological Macromolecules, 263, p.130073. **Impact Factor: 7.7**
 26. Das, M., Dixit, A., Jana, A., Karthik, R., Sreeram, P.R., Bora, H., Dhara, S., Panda, S.K. and Tiwary, C.S., 2024. Enhanced toughness and strength of 3D printed carbide-oxide composite for biomedical applications. Journal of the Mechanical Behavior of Biomedical Materials, 150, p.106290. **Impact Factor: 3.3**
 27. Byram, P.K., Mukherjee, M., Rahaman, M., Bora, H., Kaushal, M., Dhara, S. and Chakravorty, N., 2024. Bioactive self-assembling silk fibroin-sericin films for skin tissue engineering. Biomedical Materials, 19(2), p.025009. **Impact Factor: 3.9**
 28. Maji, P., Neethirajan, J., Chaitanya Sunka, K., Aziz, B., Dhara, S., Ghosh, B. and Naskar, K., 2024. Thermoresponsive Shape Memory Behavior of an Acylated Nanofibrillar Cellulose-Reinforced Thermoplastic Elastomer Composite. ACS Applied Polymer Materials, 6(2), pp.1362-1375. **Impact Factor: 4.7**
 29. Atul Kumar Ojha, Ragavi Rajasekaran, Armaan Kunwar Hansda, Apoorva Singh, Abir Dutta, Venkata Sundeep Seesala, Samir Das, Nantu Dogra, Sunita Sharma, Ritobrata Goswami, Koel Chaudhury, Santanu Dhara, "Biodegradable multi-layered silk fibroin-PCL stent for the management of cervical atresia: In vitro cytocompatibility and extracellular matrix remodeling in vivo", ACS Applied Materials & Interfaces, accepted 2023. **Impact Factor: 9.5**
 30. Rahul Gautam Talukdar, Ceby Mullakkara Saviour, Santanu Dhara, Sanjay Gupta, "Biomechanical analysis of functionally graded porous interbody cage for lumbar spinal fusion", Comput Biol Med, 18;164:107281, 2023. **Impact Factor: 6.698**
 31. Dutta, Abir, Kaushik Mukherjee, Venkata Sundeep Seesala, Kaushik Dutta, Ranjan Rashmi Paul, Santanu Dhara, and Sanjay Gupta. "Comparative evaluation of a patient-specific customised plate designs and screws for partial mandibular reconstruction." Medical Engineering & Physics 111, 103941, 2023. **Impact Factor: 2.356**
 32. Mukundan, Lakshmi M., Hema Bora, Ragavi Rajasekaran, Santanu Dhara, and Santanu Chattopadhyay. "Shell-sheddable antibiotic nanohybrid through drug-mediated surface-initiated polymerization: an overcoat approach for modulated burst release." Journal of Materials Science 58, no. 7, 3094-3116, 2023. **Impact factor: 4.2**
 33. Mukherjee, Sumanta, Santanu Dhara, and Partha Saha. "Design and Additive Manufacturing of Acetabular Implant with Continuously Graded Porosity." Bioengineering 10, no. 6, 675, 2023. **Impact factor 5.046**

34. Prabhakar, Pawan, Sayan Mukherjee, Ankit Kumar, Suraj Kumar, Deepak Kumar Verma, Santanu Dhara, Mrinal Kumar Maiti, and Mamoni Banerjee. "Optimization of MAE for Carica papaya phytochemicals, and its in silico, in vitro, and ex vivo evaluation: For functional food and drug applications." *Food Bioscience*, 102861, 2023
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27. Nano-microfibrous scaffold for burn-wound healing- 27th European Conference on Biomaterials ESB2015, The Royal City of Krakow, Poland, held on 30th August 2015 to 3rd September 2015
28. Fabrication Of Fluorescent Nanofibers For Monitoring Wound Healing In vivo - 4th TERMIS World Congress, at Boston, MA, US, held on September 8-11, 2015
29. Bone Grafts Designed Via Biomimetic Approach from Natural Origin Materials at TERMIS World Congress (2015) held in Boston, USA, 8 - 11 September 2015
30. Bone grafts designed via bio-mimetic approach from natural origin materials, At Health Tech Innovations 2015, held at IIT Mumbai, 9-10 January, 2015
31. Delivered invited lecture in workshop organized State Council of Science and Technology with the sponsorship of West Bengal DST at B.M.T. Sikhaniketan on 30th January, 2015
32. Heat-chill method of preparation for self-assembled amphiphilic block copolymer micellar nanoparticles for drug delivery in International conference on functional materials (Poster Presentation) IIT Kharagpur, February 5 - 7 (2014)
33. Electrospun polycaprolactone/collagen nanofiber composite for skin tissue engineering presented in Second International Conference on Medical Materials, Devices and Regenerative Medicine (MMDRM) Feb, 2014, Kathmandu, Nepal
34. Nano/microfibrous chitosan/collagen composite for skin tissue engineering, presented in International Conference on Functional Materials (ICFM-2014), IIT Kharagpur, Feb, 2014
35. Reconstruction of Customized Mandible using Alumina Fiber Reinforced Polymer Composite by 3D imaging, Rapid Tooling and Molding, MMDRM, Nepal, January, 2014
36. Nano Silver Substituted Hydroxyapatite, Gelatin, Alginate and SPION Composite Fibrous scaffolds for Bone tissue Engineering in TERMIS AM 2014 (Washington DC 16th December, 2014)
37. Development of Bioactive 3D Scaffold with Nano/Micro Hierarchy for Bone Tissue Engineering through Combinatorial Approach at International Conference on Soft Materials, held at MNIT, Jaipur, 06-10 October, 2014
38. Nano-Micro Architectural Hybrid Composite Scaffold for Bone Tissue Engineering at 26th Annual Conference of the European Society for Biomaterials (ESB-2014) held at University of Liverpool, UK, 31 August-3 September 2014.
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45. Phosphorylated Alumina Fibrous Scaffolds for Bone Tissue Engineering at TERMIS-AP 2013 at Wu-Zhen, Sanghai, China, October, 2013
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49. Self-assembled PEG-PCL-PEG nanoparticles for insulin delivery *in 3rd*FAPS Polymer Congress and MACRO IISc Bangalore, May 15-18 (2013)
50. Biodegradable PEG-PCL-PEG nanoparticles for celecoxib drug delivery *in* ICRRM IIT Kharagpur, March 6 - 9 (2013)
51. Thermo-responsive Biodegradable PEG-PCL-PEG Based Hydrogel for Insulin Deliveryin ICMAT MRS Singapore 30th June to 5th July (2013)
52. Phosphorylated Polymeric Fibrous Scaffolds: A Novel Approach towards Bioactivity in Bone Tissue Engineering-invited talk at International Conference on Designing of Biomaterials (Bind 12) organized by IISC Bangalore, 2012
53. Direct Laser Microgrooving of Ti6Al4V as a Surface Modification Method for Biological Implants presented at International Conference (PSAM) organized by IIT Guahati, 2012
54. Laser Microgrooving of Ti6Al4V and its Effect on Viability Human Osteoblast-like MG63 Cells- presented at International conference (AIMTDR'12) organized by Jadavpur University, 2012
55. Synthesis, Characterization and In Vitro Biocompatibility study of Patterned Calcium Phosphate Fibrous Scaffold from Sea Shell presented at Bind 12 at IISC Bangalore, International Conference on Designing of Biomaterials (2012)
56. Single Step Sintered Calcium Phosphate Fibres from Avian Egg Shell, presented at International Conference on Ceramics, organized by Govt. Engineering College Bikaner & Ceramic Electrical Research & Development Centre, Bikaner (ICC 2012)
57. Reconstruction of mandible using 3D imaging, rapid tooling and molding, at Bind 12 at IISC Bangalore, International Conference on Designing of Biomaterials.
58. 2,5-dimethoxy-2,5-dihydrofuran cross-linked chitosan for bone tissue engineering application at TERMIS World Congress, Vienna, September, 2012
59. Multiscale Fibrous Scaffolds for Skin Tissue Engineering at TERMIS World Congress, Vienna, September, 2012

60. 'Omics in Bone Tissue Engineering', International Conference on OMICS MEETS DISEASE and 3rd annual meeting of Proteomics Society (India) jointly organized by Saha Institute of Nuclear Physics (SINP), Indian Institute of Chemical Biology (IICB) and University of Calcutta at SINP Auditorium Complex, Salt Lake, Kolkata on 15-18 December, 2011
61. 'Electrospinning of Partially Phosphorylated Hydrogel Polymers Designed to Promote Rapid Mineralization and Osteoblast-like- Cells Adhesion', Accepted for Oral Presentation at Materials Research Society 2011 Fall Meeting, at Boston. USA during November 28-December 02, 2011
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63. 'Biocompatibility evaluation of Fish scale Collagen intermingled Chitosan based nano-fibers for Skin Tissue Engineering Application', at Materials Research Society Fall Meeting Boston, USA, November, 2011
64. 'Fabrication of custom specific dental crown through green stage machining of ceramics', International Conference on Biomaterials and Implants: Prospects and Possibilities in the New Millennium (BIO 2011) at CGCRI, Kolkata, 2011
65. 'Genipin Cross-linked N Methylene Phosphonic Chitosan Bio-hydrogels', Accepted Abstract for oral Presentation for 3rd International Congress on Biohydrogels to be held in Gould Institute, Florence, Italy, during November 8-12, 2011
66. 'Honey-alginate Matrix for Tissue Engineering Application', Accepted Abstract for oral Presentation for 3rd International Congress on Biohydrogels to be held in Gould Institute, Florence, Italy, during November 8-12, 2011
67. "Development of electrospun nanofibers of partially phosphorylated polymers and evaluation of cellular response by markers of osteogenic maturation", Accepted Abstract for Poster Presentation for International Bone Tissue Engineering Congress to be held in Institute of Innovative Oral Surgery and Medicine, Hannover, Germany during October 12-15 2011
68. "Development of Biocompatible Scaffolds Based on Cross-linking of Phosphorylated Chitosan with Genipin", Accepted Abstract for Poster Presentation for International Conference on Biomaterials and Implants: Prospects and Possibilities in the New Millennium (BIO 2011) at CGCRI, Kolkata to be held during 21-23 July, 2011
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71. Nano/Micro Architecture Chitosan-Collagen scaffolds for Tissue engineered Skin, International Conference on Biomaterials and Implants: Prospects and Possibilities in the new Millennium organized by Central Glass and Ceramic Research Institute in July, 2011
72. Tripolyphosphate treated Chitosan based nano-fibers for Skin Tissue Engineering Applications, International Conference on Surface and Interface of Biomaterials, Japan, July 2011
73. Honey based fibrous scaffold for tissue engineering application, Barui, A., Banerjee, P., K. Das, R., Dhara, S., Chatterjee, J. 2011 Proceedings of the 2011 IEEE/NIHLife

- Science Systems and Applications Workshop, LiSSA 2011 , art. no. 5754161, pp. 83-85
74. A simple and sensitive cytosensor based electrical characterization of in vitro wound healing assay for keratinocytes Mondal, N., Mondal, D., Roychaudhuri, C., Barui, A., Dhara, S., Chatterjee, J. 2011 Proceedings of the 2011 IEEE/NIH Life Science Systems and Applications Workshop, LiSSA 2011 , art. no. 5754152, pp. 47-50
 75. Honey Based Fibrous Scaffold for Tissue Engineering. IEEE/NIH Life Science Systems & Applications Workshop. April 7-8, 2011, Bethesda, Maryland, USA
 76. A Simple and Sensitive Cytosensor Based Electrical Characterization of in vitro Wound Healing Assay for Keratinocytes. IEEE/NIH Life Science Systems & Applications Workshop, Bethesda, Maryland, USA (April 7-8, 2011)
 77. Honey based Fibrous Scaffold for Tissue Engineering Application. International Conference on Biomaterials and Implants: Prospects and Possibilities in the New Millennium (BIO 2011) CGCRI, Kolkata (21-23 July, 2011)
 78. 'Effect of Ionic and Covalent Crosslinking on Physicochemical Properties of Chitosan Fiber', Macro - 11th international conference on Frontiers of Polymers and Advanced Materials, New Delhi, India, 15-17th December, 2010.
 79. 'Development of chitosan-tripolyphosphate fiber for biomedical application', Students' Technology Symposium (TechSym), IEEE pp. 77-81 (2010)
 80. Nanofibrous Chitosan Collagen composite scaffold for biological skin substitute, Bangalore Nano 2010, Bangalore, December 2010
 81. Chitosan Collagen composite scaffold for tissue engineering of skin, TERMIS Asia-Pacific Meeting, Sydney, September 2010
 82. 'Honey based fibrous scaffold for tissue engineering application' International Conference on Cellular and Molecular Bioengineering. 2-4th August, 2010, Nanyang Technological University, Singapore
 83. 'Changes in p63 expression in regenerating epithelium through healing progression' International Conference on Stem Cells and Cancer (ICSCC-2010) 11th-14th December 2010, organized by School of Biotechnology, International Institute of Information Technology (I2IT, Pune)
 84. 'Honey-alginate Fibrous Scaffold for Tissue Engineering Application' XIX International Materials Research Congress, Cancun, Quintana Roo, Mexico, (15-19 August, 2010)
 85. 'Correlating Optical Biopsy with Histopathology of Wounds under Topical Intervention with Honey', Systems in Medicine and Biology (ICSMB2010), IIT KGP (2010)
 86. 'Distinguishing Phyllodes from Fibroadenoma by Immunohistochemical and Swept Source-Optical Coherence Tomography Studies', Systems in Medicine and Biology (ICSMB2010), IIT KGP (2010)
 87. 'Simple Cyto-sensor Based Electrical Characterization of Keratinocytes and Fibroblasts with Prime Molecular Expressions towards Skin Tissue Engineering Applications', Systems in Medicine and Biology (ICSMB2010), IIT KGP (2010)
 88. 'Effect of ionic and covalent cross-linking on physiochemical properties of chitosan fiber', Macro 2010, 15-17 December, New Delhi, India (2010)
 89. 'Electrospinning of Collagen in Aqueous System', Melbourne, Australia (2010).
 90. 'Freeze Dried Fish Scale Collagen: A Potential Matrix for Tissue Engineering and Wound Dressing', International Conference on Biotechnology and Food Science (ICBFS 2010), Bangalore, & World Academic Union (World Academic Press), UK (2010) on Feb. 9-10 (2010)

91. 'Fish Collagen: A Potential Material for Biomedical Application', IEEE EMB Techsym 2010, IIT Kharagpur, & IEEE Explore (2010)
92. 'Development of Chitosan-Tripolyphosphate Fiber for Biomedical Application', IEEE EMB Techsym 2010, IIT Kharagpur, & IEEE Explore (2010)
93. 'Tailoring the microstructure of cellular ceramics for multifunctional composites', International Conference on Multifunctional Composites, 2008
94. "Influence of nature and amount of dispersant on rheology of alumina slurry" presented in 10th International Conference and Exhibition of the European Ceramic on June 17 - 21, 2007 Estrel Convention Center, Berlin
95. "A Simple Fabrication Method for Highly Interconnected Ti Foams for Bone Replacements", presented in 20th European Conference on Biomaterials, at Nantes, France on September, 2006
96. "Biomimetic Apatite/Polycaprolactone Nanofibres for Bone Tissue Engineering Scaffolds" presented in BIOCERAMICS 19, Chengdu, China on October' 2006 organized by the International Society for Ceramics in Medicine (ISCM) at the 19th International Symposium on Ceramics in Medicine
97. "Porous and Bioactive Alumina Ceramics for Bone Grafts and Tissue Engineering Scaffolds" presented in BIOCERAMICS 19, Chengdu, China on October' 2006 organized by the International Society for Ceramics in Medicine (ISCM) at the 19th International Symposium on Ceramics in Medicine
98. "Green Machining of Ceramics using Protein Coagulation Cast Compacts", presented in Shaping III, Limoges, France on May' 2006 organized by European Ceramics Society
99. "A Novel Method for Highly Interconnected Ti Foam for application of bio materials", presented in Shaping III, Limoges, France on May' 2006 organized by European Ceramics Society
100. "Green Ceramic Machining: A Top-Down Approach to Rapid Prototyping of Ceramics"-7th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering held on 22nd-25th MARCH, 2006 in the Hotel Ambassadeur, Juan Les Pins, France
101. "Highly interconnected Ti foam", Powder matrix Revolution Annual Review Meeting held on 7th March' 2006 at Holy well Park, Loughborough, UK
102. "Biomimetic Apatite formation on Polycaprolactone (PCL) for Bone Tissue Engineering" presented in meeting for Biomaterials and Tissue Engineering on 21st June' 2005 at Queen's College, University of London
103. "Highly Inter-connective TiO₂ foam for Orthopedic applications", presented on 4th UK Society for Biomaterials Conference – held on 21 - 22 June 2005
104. "Novel Powder Processing Methods for Highly Interconnected Ti Foam", presented on 4th UK Society for Biomaterials Conference –held on 21 - 22 June 2005
105. "Gelcasting: A novel Ceramic forming technique for the convergence of Top down and Bottom up Approaches", Oral presentation at the 107th Annual Meeting & Exposition of The American Ceramic Society, April 10-13, 2005 at the Marriott Waterfront Hotel in Baltimore, Maryland, USA
106. "Green Machining of Alumina Ceramics", PowdermatriX Revolution Annual Review Meeting which is being held on 22nd February 2005 at Holy well Park, Loughborough, UK
107. "Protein Coagulation Casting: A New Environment Friendly Ceramic Forming Process", at 106th Annual Session of the American Ceramic Society, held on April 18-21, 2004 at the Convention Center and RCA Dome in Indianapolis, Indiana, USA

108. "Influence of sucrose addition on consolidation of ceramic bodies by Protein Coagulation Casting (PCC)", at 106th Annual Session of the American Ceramic Society, held on April 18-21, 2004 at the Convention Center and RCA Dome in Indianapolis, Indiana, USA
109. "Protein Coagulation Casting (PCC): A New Process with Wide Commercial Applicability for Fabrication of Ceramic Components", at Annual Session of the Indian Ceramic Society and International Ceramic Congress, Chennai (January 9 – 11, 2004)
110. "Aqueous consolidation of SiC Ceramics", Annual meeting of the Materials Research Society of India (MRSI), Banaras Hindu University, (Jan 2004) at Banaras
111. "Simplified aqueous gelcasting of silicon carbide ceramics", at Annual Session of the Indian Ceramic Society and International Ceramic Congress, Chennai (January 9 – 11, 2004)
112. Invited talk on "Direct casting technologies: Transcending the barriers in ceramic fabrication", at CMERI, Durgapur symposium on "National Conference on Investment Casting", September 2003
113. "Protein Coagulation Casting – A new forming technique for dense and porous ceramics", MRSI, Kolkata chapter, for Young Scientist Colloquium (September 2003)
114. "Direct casting of ceramic foams" at the International Symposium on "Recent Advances in Inorganic Materials (RAIM-2002)", Materials Research Society of India (MRSI), IIT Bombay (December 2002)
115. "Use of egg white as a gel forming material in synthesis of nano-crystalline alumina"- at the International Symposium on "Recent Advances in Inorganic Materials (RAIM-2002)", Materials Research Society of India (MRSI), IIT Bombay (December, 2002)
116. "Rheological behavior of fresh and aged aqueous alumina gelcasting slurries" - at the International Symposium on "Recent Advances in Inorganic Materials (RAIM-2002)", Materials Research Society of India (MRSI), IIT Bombay (December 2002)
117. "Shape forming of ceramics via gelcasting of aqueous particulate slurries", National Conference on Frontiers in Materials Science and Technology (FMST 02), IIT Kharagpur (February 2002)
118. "Critical aspects in shape forming of ceramics via gelcasting of aqueous particulate slurries", International Conference on Advances in Materials and Materials Processing, IIT Kharagpur (February 2002)
119. "Aqueous gelcasting and its applications in fabrication of complex ceramic components", Annual meeting of the Materials Research Society of India (MRSI), Science City, Calcutta (Jan 2001)
120. "Development of aqueous gelcasting and its application in ceramics forming", at the National Seminar on "Engineering Ceramics: Prospects in the New Millennium", Central Glass and Ceramic Research Institute (CGCRI), Calcutta (November 2000)
121. "Forming of Functionally Graded Ceramic and Composite Shapes by Gelcasting", Symposium on Ceramic Matrix Composites - CCM 99, Materials Research Society of India (MRSI), Sardar Patel University, Vallabh Vidyanagar, Gujarat (December 1999)

Workshop/Symposium Attended:

1. Winter school on “Chemistry of Materials”, organized by JNC SAR, Bangalore on December’ 2006
2. Workshop on “Nano-materic materials: Production, Processing and Prospects” organized by DMRL, Hyderabad on September’ 2006
3. Symposium on “A Forecast of the Future for Biomaterials”, Professor Larry L. Hench Retirement Symposium was held at Imperial College London, on 29 and 30 September 2005
4. Symposium on “Functionally Graded Materials” at NMRL Ambernath, India on 2001

Academic Collaboration: Prof. Bo Su (University of Bristol), Dr. Sourabh Ghosh (IIT Delhi), Dr. Sagar Pal (ISM Dhanbad), Dr. Asit Baran Panda (Central Salt & Marine Chemicals Research), Dr. Himadri Nandan Bar (Non-destructive Testing Group, NML Jamshedpur)

Clinicians collaborator: Dr. Samit Kumar Nandi (Department of Veterinary Surgery and Radiology, West Bengal University of Animal and Fishery Sciences), Dr. K M Mandana (Fortis Hospital, Kolkata), Dr. Debasish Chakraborty (Fortis Hospital, Kolkata), Dr. T K Gahlot (RAJUVAS), Dr. Sabyasachi Roy (Midnapore Medical College and Hospital), Dr. Arun Achar (Bankura Sammilani Medical College), Dr. Bimal Raj, Dr. D. Moulik (Bankura Sammilani Medical College), Dr. Zahir Quazi, DMIMS Wardha

Sponsored Projects:

No.	Project Title	Sanction year	Sponsorer	Sanction Amt (INR)
Principal Investigator				
1	Fabrication of hydroxyapatite discs	16-11-2015 to 16-02-2016	ITC Consultancy	223275.00
2	‘CAD model Design of Ophthalmic Implants samples and testing holders’	23-06-2014 to 22-09-2014	SAP & PAP Consultancy	66675.00
3	Net shape fabrication of dental crown using computer numerical control (CNC) machinery of green ceramics compacts	29-01-2009 to 30-06-2012	DBT (R&D)	4302900.00
4.	"Development of Customized implant via Powder Metallurgy Process" with reference file number IMC/2020/000019.	2023-2028	IMPRINT C2.0	36900000.00
4	Bioprinting of Skeletal Tissue Forwards Customized Phalanx Reconstruction and Regeneration by Tissue Engineering Approach	25-02-2022 To 24-02-2025	ICMR	6817877

5.	Anatomically Analogous Bio-integrating Artificial Cornea	17-05-2022 To 16-05-2024	ICMR	7325670.00
6.	Dense Porous Multilayer Implants for improved osseointegration through tissue ingrowth	17-05-2022 To 16-05-2024	ICMR	1555670.00
7	Customized Bioactive porous Titanium Implants with Improved Tissue- integration and attenuated Aseptic Loosening for Orthopaedic application	24-04-2019 To 23-01-2023	DRDO	7071833.00
8	Development of bioactive 3D scaffold with nano/micro hierarchy for bone tissue engineering through combinatorial approach	01-10-2015 to 30-09-2018	DST (R&D)	4845000.00
9	Development of bio-active scaffold for bone graft through hard tissue engineering	01-06-2011 to 31-05-2014	CSIR (R&D)	1700000.00
10	Simple low-cost bioactive titanium foam via novel route for skeletal tissue reunion	28-04-2016 to 27-04-2018	BIRAC SRISTI (R&D)	1500000.00
11	Development of titanium lattice structured implant for joint replacement	16-04-2014 to 15-04-2017	MHRD (R&D)	6500000.00
12	Direct printing of bioresorbable radiopaque polymeric stent: a novel approach for lumen stricture	16-04-2014 to 15-04-2017	MHRD (R&D)	2900000.00
13	Development of dense and porous titanium components via powder metallurgy route for biomedical applications	19-03-2012 to 18-03-2015	DRDO (R&D)	6783000.00
14	Multi - layer customized skin graft for full thickness wound	24-06-2014 to 25-06-2017	DBT (R&D)	2731000.00
15	Mechanical characterization of ophthalmic implants: a case study	23-06-2014 to 22-09-2014	SAP & PAP (R&D)	402000.00
16	Development Porous Scaffold for Hard Tissue Engineering	Completed	SRIC IITKGP (R&D)	500000.00
17	Development of Ceramic Nanofiber-polymer Resin based Composite for Dental Filler	01-06-2010 to 31-05-2012	DST Fast Track (R&D)	1860000.00
Total value: 93984900.00				
Co-Investigator				
1	Sequence dependent molecular action of zd6474 with paclitaxel and	28-03-2011 to	DBT (R&D)	3150000.00

	radiation in progression and treatment of breast cancer	31-12-2014		
2	Miniature active device for guidance of intracoronary angioplasty wires, catheters & stents	28-03-2014 to 27-03-2017	MHRD (R&D)	8100000.00
3	Micro/nano manufacturing and characterization facility for robotics in nano-scale manipulation	24-02-2015 to 23-02-2018	MHRD (R&D)	100000000.00
4	Isolation and characterization of the active constituents from leaves of three indian medicinal plants and evaluation of sustained delivery system of anti-diabetic bio-active molecules based on chitosan loaded nano/micro beads	06-01-2014 to 05-01-2017	DTE (R&D)	1549130.00
5	Involvement of functional single nucleotide polymorphisms (SNP) of matrix metalloproteinase (MMP) gene promoters in the cell type specific regulation of human mmps: intrinsic genetic characteristics in cancer cell progression	05-03-2013 to 06-09-2016	DBT (R&D)	5257600.00
6	Separation and Electrical Characterization of Biological Cells using Microfluidic Device	Completed	ADA-NPMAS S (R&D)	9200000.00
7	Synthesis, development and in-vitro characterization of bio-inert Yttrium/Ceria coated/stabilized Zirconia toughened Alumina composites for Biomedical	2008-2011	DBT (R&D)	2900000.00
8	Medical Image Analysis and MEMS Based Flow Sensor Development	Completed	Texas Instruments (India) Pvt. Ltd (R&D)	9200000.00
9	Development of porous Interbody cage for Lumbar Spinal Fusion using Biomechanical Analysis and Digital Manufacturing	28-01-2022 To 27-01-2025	DST (SERB)	4807000.00
10	Design and Fabrication of Multimaterial – Multihead 3D Printer for Tissue Phantom development utilizing CT/MRI data	23-05-2022 To 22-05-2024	ICMR	145820.00
Total value				144309550

Project Sanctioned				Agency (status)
1	Design and Fabrication of Customized Composite Scaffolds for Skeletal Tissue Healing using Biological Waste Materials	Approved (PI)	16400000 (INR)	Imprint Fund not received
2	Multilayered Skin Equivalent Model using Biopolymers for Burn Wound Management	Approved (PI)	16410200 (INR)	Imprint Fund not received
3	Functionally Graded Bioactive Titanium Foam as Customized Cancellous Bone Analogue	Approved (Co-PI)	24811200 (INR)	Imprint Fund not received

Graduated PhD Students received degree:

Joint guidance: Dr. Falguni Pati, Dr. Ananya Barui, Dr. Pallab Datta, Dr. Soumi Dey Sarkar, Dr. Sanal P. S., Dr. Aditya Parekh, Dr. Sumanta Mukherjee, Dr. Sayanti Datta, Dr. Kamakshi Bankoti, Dr. Priti Prasanna Maiti, Dr. Arpita Roy, Dr. Basil Mathai, Dr. Abit Datta, Dr. Preetam Guha Roy, Dr. Gaurav Dinesh Kulkarni, Dr. Trina Ray, Dr. Krishna Chaitanya, Dr. Rahul Gautam Talukdar, Dr. Lakshmi M Mukundan, Dr. Ragavi Rajasekharan, Atul Kumar Ojha

Single Guidance: Dr. Saralashrita Mohanty, Dr. Paulomi Ghosh, Dr. Prabhaskar Dadheech, Dr. Pallabi Pal, Dr. Bodhisatwa Das, Dr. Kausik Kapat, Dr. Pavan Srivas, Dr. Arun R. Prabhu, Dr. Venkata Sundeep Seesala,

Masters Students received degree:

Pritiprasanna Maity, Shyamal Mandal, Sujit Hiwale, Chandan Rath, Sankhya Mohapatra, Amit Mehndiratta, Pavan Srivas, Harpreet, Nimmy Francis

Present students working for doctoral work:

Joint Guidance: Krishna Dixit, Pravin Vaidya, Prasanna Kumar Byram, Ankit Porwal, Anurag Kumar Pandey, Sonali Sheeba, Mitali Mishra, Saikat Biswas,

Doctoral Students Outside the institute: Dr. Rajashree Bhadhuri (GNI Dental Sciences and Research, Kolkata)

Single Guidance: Sayan Mukherjee, Sayan Das, Suman Mishra, Samir Das,

B. Tech thesis completed: Avinash, Sankhya Mohapatra, Tanmoy Haldar, Vikas Kumravat

Santanu Dhara