

CURRICULUM VITAE

Name: Dr. Howa Begam
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Mobile no: 7001875830
Email: howabegam@gmail.com
Date of birth: 30.05.1983



ACADEMIC QUALIFICATION:

Degree	Specialization	University	Score	Year of passing
Ph.D. (Engineering)	Biomaterial	Jadavpur University	--	2016
M.E	Bio-Medical Engineering	Jadavpur University	74.51%	2009
B.tech	Bio-Medical Engineering	West Bengal University of Technology	79.9%	2007
Diploma	Medical Laboratory Technology	West Bengal State Council of Technical Education	79.00%	2004
Higher secondary	Science	West Bengal Council of Higher Secondary Education	51.5%	2001
Secondary	General	West Bengal Board of Secondary Education	73.38%	1999

PH.D THESIS:

Title: Study on the development and physical, mechanical and biological characterisation of fine grained, doped hydroxyapatite.

Supervisors: (i) Dr. Abhijit Chanda, Department of Mechanical Engineering, Jadavpur University, Kolkata, India

(ii) Dr. Samit Kumar Nandi, Department of Veterinary Surgery & Radiology West Bengal University of Animal and Fishery Sciences, Kolkata, India.

M.E. THESIS:

Title: Colloidal processing of nano hydroxyapatite synthesized by different novel routes and slip casting to fabricate different dense body useful for exotic biomedical applications.

Supervisors: (i) Dr. Abhijit Chanda, Department of Mechanical Engineering, Jadavpur University, Kolkata, India.

(ii) Dr. Biswanath Kundu, Bioceramic and Coating Division, Central Glass and Ceramic Research Institute, Kolkata, India.

WORK EXPERIENCE:

Nature of experience	Organization	Designation	Duration	Subjects taught
Teaching	JIS College of Engineering, Kalyani, Nadia	Asst. professor	3 years	Biomaterials, Medical Imaging, Biomedical Instrumentation, Power electronics and Control System
Teaching	NIT Raipur	Temporary faculty	4 years	Biomaterials, Biochemistry, Basic clinical Science, Microbiology
Training	Pilot Plant & Process Development Center, Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh	Trainer	16 days, 9 th june, 2019 to 24 th june, 2019	Synthesis of bioceramic (pure and doped hydroxyapatite, tricalcium phosphate) materials, slip casting

Post-Doctoral Research experience:

Title of project: Development of injectable bone substitute using biphasic calcium phosphate/biopolymer composite loaded with platelet rich plasma for bone defect

Name of funding agency: ICMR (file no 5/3/8/62/ITR-F/2020 dated 19.03 2020)

Host institute: Center for Healthcare Science and Technology, Indian Institute of Engineering Science and Technology, Shibpur Howrah

Duration: 03 years (2020-2023)

UG MAJOR PROJECT GUIDED

SL no	Title	Year
1	Nano-sized HAp coating using electrophoretic deposition	2017
2	Preparation and characterization of sodium alginate bead for drug delivery system	2017
3	Effect of dopant on Chitosan/Hap composite film	2018
4	Effect of titania dopant on the property of hydroxyapatite	2019
5	Preparation of film using PVA and Chitosan and study of effect of crosslinking agents (glutaraldehyde & sulphuric acid) on their properties	2019

PROFESSIONAL MEMBERSHIPS:

Type of membership	Organization	Membership number	Year
Life membership	Biomedical Engineering Society of India	L975	2011
Life membership: associate member	Institute of Engineers	AM100661-7	2012
Life membership	Society for Tissue Engineering & Regenerative Medicine (India)	LM143	2018
Community associate	American Chemical Society	32729909	2021

TRAINING AND WORKSHOP ATTENDED:

Sl no	Name of Training/workshop	Organization	Duration
1	AICTE Training And Learning (ATAL) Academy Online Elementary FDP on Novel Materials: Advances and Application	National Institute of Technology, Raipur India	24/09/2021 to 28/09/2021
2	STTP on Applications of nanotechnology & nanoscience in science, engineering & technology	Priyadarshini Institute of Engineering & Technology, Nagpur, India	2-7 th August, 2021
3	International Webinar on Impact of Digital Revolution on Pharma & Healthcare	IEST Shibpur	January 29 – February 02, 2021
4	STTP on Application of MATLAB in mathematics, science and engineering	St. Vincent Pallotti College of Engineering And Technology, Nagpur, India	15-17 th September, 2020
5	Webinar on Digital pathology	Manipal Institute of Technology, MAHE, Manipal, India	7 th august, 2020
6	Webinar on artificial intelligence in healthcare	Manipal Institute of Technology, MAHE, Manipal, India	25 th July, 2020
7	Faculty Development Programme on transformation to the digital mode of education	National Institute of Technology, Raipur India	26 th May, 2020 to 1 st June, 2020
8	<i>Short term training program: Advances in Materials, Processing and Characterization</i>	National Institute of Technology, Raipur India	26 th -30 th August, 2019
9	<i>Short term training program: Biosensor and signal processing</i>	National Institute of Technology, Raipur India	22 nd -23 rd December, 2016
10	<i>Workshop: Animal cell culture and Biomaterial Characterization</i>	National Institute of Technology, Rourkela, India	28 th February-5 th March, 2016

11	<i>Workshop: Metallurgy for Non-Metallurgists</i>	Indian Institute of Technology Varanasi, India	8 th - 10 th December,2015
12	<i>Workshop: Advances in healthcare engineering</i>	College of Engineering and Management, Kolaghat, West Bengal	2 nd -4 th January, 2014
13	<i>Workshop: X-ray Diffraction</i>	Bangladesh Council of Scientific and Industrial Research, Dhaka, Bangladesh	22-28 January, 2013
14	<i>Workshop: Tissue Engineered Scaffold: Fabrication and characterization</i>	National Institute of Technology, Rourkela, India	30 th -31 st March, 2012
15	<i>Refresher course: Recent trends in Biomedical Engineering</i>	Jadavpur University, India	11 th -30 th June, 2012
16	<i>Training: Faculty Development Programme</i>	JIS College of Engineering, Kalyani, Nadia, India	5 th June, 2010
17	<i>Training: Faculty Development Programme</i>	JIS College of Engineering, Kalyani, Nadia, India	16 th August, 2011

LIST OF PUBLICATIONS:

Journal publications

1. Howa Begam, Shalini Dasgupta, Subhadip Bodhak, Ananya Barui, Cobalt doped biphasic calcium phosphate ceramics for bone regeneration applications: Assessment of in vitro antibacterial activity, biocompatibility, osteogenic and angiogenic properties, *Ceramics International* (2024) *Ceramics International* 50 (2024) 13276–13285, <https://doi.org/10.1016/j.ceramint.2024.01.240> (**impact factor: 5.2**)
2. Howa. Begam, Somali Mandal, Abhijit Chanda and Ananya Barui, "Preparation and characterization of zinc doped biphasic-calcium phosphate for biomedical application," *2022 IEEE Conference on Interdisciplinary Approaches in Technology and*

Management for Social Innovation (IATMSI), Gwalior, India, 2022, pp. 1-5, doi: 10.1109/IATMSI56455.2022.10119318.

3. Sharwan Parihar, Howa Begam. "Extraction of Nano Hydroxyapatite from Goat Bone for Biomedical Application." *CSVТУ International Journal of Biotechnology, Bioinformatics and Biomedical* 5, no. 2 (2020): 23-27.
4. Anushika, Prakhar Sharma, Alok Trivedi, Howa Begam, Synthesis and characterization of pure and titania doped hydroxyapatite, *Materials today proceedings*, Volume 16, Part 2, 2019, Pages 302-307
5. Howa Begam, Samit Kumar Nandi, Abhijit Chanda, Biswanath Kundu, Effect of bone morphogenetic protein on Zn-HAp and Zn-HAp/collagen composite: A systematic in vivo study, *Research in Veterinary Science* 115 (2017) 1–9 (impact factor: **1.504**)
6. Howa Begam, Biswanath Kundu, Abhijit Chanda, Samit Kumar Nandi, MG63 osteoblast cell response on Zn doped HAp with various surface features, *Ceramics International* 43 (2017) 3752–3760 (impact factor: **2.758**)
7. Howa Begam, Samit Kumar Nandi, Biswanath Kundu, Abhijit Chanda, Strategies for delivering bone morphogenetic protein for bone healing, *Materials Science and Engineering C* 70 (2017) 856–869 (impact factor: **3.420**)
8. Howa Begam, Somali Mandal, Abhijit Chanda, Jayanta Mukherjee, Samit Kumar Nandi, Effect of zinc doping on the biological properties of biphasic calcium phosphate ceramics in orthopedic animal model, *Trans. Ind. Ceram. Soc.*, vol. 73, no. 4, pp. 284-292 (2014). (impact factor: **0.548**)
9. Howa Begam, Sarmita Sinha, Samit Kumar Nandi, Abhijit Chanda, Effect of temperature on the rheological behavior, slip casting rate and densification of Calcium

Hydroxyapatite slurry, Trans. Ind. Ceram. Soc., vol. 73, no. 4, pp. 312-317 (2014)
(impact factor: **0.548**)

10. Pranabesh Sasmal, Howa Begam, Extraction of type-I collagen from sea fish and synthesis of Hap/collagen composite, Procedia Materials Science 5 (2014) 1136 – 1140
11. Promita Bhattacharjee, Howa Begam, Abhijit Chanda, Samit Kumar Nandi, Animal trial on zinc doped hydroxyapatite: A case study, Journal of Asian Ceramic Societies 2 (2014) 44–51.
12. Brihat Chettri, Samit Kumar Nandi, Abhijit Chanda, Howa Begam, Bone Ingrowth to Insulin like Growth Factor-1 Loaded Zinc Doped Hydroxyapatite Implants: an *In Vivo* Study. 1: 234. doi:10.4172/scientificreports.234, 2012.

Book Chapter:

1. Sanchari Giri, Rajdeep Ganguly, Howa Begam," Applications of calcium phosphate nanoparticles in drug delivery system", Futuristic Trends in Chemical Material Sciences & Nano Technology Volume 3 Book 3,IIP Series, Volume 3, May, 2024, Page no.115-131, e-ISBN: 978-93-5747-683-6, DOI: <https://www.doi.org/10.58532/V3BECM3CH8>
2. Howa Begam, Sayantika Sanyal, Ananya Barui, and Samit Kumar Nandi, Materials from natural resources for the application of bone tissue engineering, Interaction of nanomaterials with living cells. DOI: 10.1007/978-981-99-2119-5
3. Shradha Sharma, Howa Begam, Ananya Barui, Application of antiviral activity of polymer, Advances in Biomedical Polymers and Composites Materials and Applications 2023, Pages 591-61, <https://doi.org/10.1016/B978-0-323-88524-9.00011-5>
4. Howa Begam, Subhasis Roy, Prasenjit Mukherjee, Abhijit Chanda, Biswanath Kundu, Samit Kumar Nandi, Bone Morphogenic Proteins and Bioceramic Scaffolds in Orthopedics, Innovative Bioceramics in Translational Medicine II, Book Series: Springer

Series in Biomaterials Science and Engineering, Editors: Prof. Andy H. Choi, Prof. Besim Ben-Nissan, Publisher: Springer Singapore, January 2022, DOI: 10.1007/978-981-16-7439-6_9

5. Yash Chopra, Rajesh Kumar, Howa Begam, Effect of Temperature and Titania Doping on Structure of Hydroxyapatite. In: Rizvanov A.A., Singh B.K., Ganasala P. (eds) Advances in Biomedical Engineering and Technology. Lecture Notes in Bioengineering. Springer, Singapore, 2020, pp-277-284 https://doi.org/10.1007/978-981-15-6329-4_24
6. Shubham Sen, Rashmi Agrawal, Howa Begam, Preparation and Characterization of Cellulose Nano Crystal/PVA/Chitosan Composite Film for Wound Healing Application. In: Rizvanov A.A., Singh B.K., Ganasala P. (eds) Advances in Biomedical Engineering and Technology. Lecture Notes in Bioengineering. Springer, Singapore, 2020, pp-285-293, https://doi.org/10.1007/978-981-15-6329-4_25

Conference proceedings:

1. Development of calcium phosphate based novel Injectable Bone Substitute for bone regeneration application, proceedings of Bioactive Glass, Ceramics & Composites in Healthcare: Current Technological Trends BIOCOM 2022 December 20th 2022, CSIR-Central Glass & Ceramic Research Institute, Kolkata
2. Application of biphasic calcium phosphate in bone graft: a review, Proceedings of National Conference on Emerging Materials and Nanotechnology (NCEMN 19') 6th-7th September, 2019, National Institute of Technology Raipur, CG, India.
3. Preparation and characterization of cellulose nano crystal/PVA/Chitosan composite film for wound healing application, Proceedings of 1st International conference on Biomedical Engineering Science and Technology: Roadway from laboratory to market (ICBEST 2018), 20-21 December, 2018, National Institute of Technology Raipur, CG, India

4. Effect of temperature and titania doping on structure of hydroxyapatite, Proceedings of 1st International conference on Biomedical Engineering Science and Technology: Roadway from laboratory to market (ICBEST 2018), 20-21 December, 2018, National Institute of Technology Raipur, CG, India
5. Electrophoretic-deposition of titania doped hydroxyapatite on stainless steel for Biomedical application, Proceedings of the 1st International Conference on Mechanical Engineering Jadavpur University Kolkata India January 4 – 6, 2018
6. Synthesis and characterization of pure and titania doped hydroxyapatite, International conference on advances in materials, manufacturing and applied sciences (ICAMMAS 17), 30-31 march, 2017, Sai Ram institute of Technology, Chennai, India
7. Hydroxyapatite/polymer biocomposite scaffold as drug carrier, proceedings of International conference on nanotechnology for better living (NBL 2016), 25-29 May, 2016, NIT Srinagar, India
8. Synthesis and processing of zinc doped Hydroxyapatite using slip casting technique, proceedings of 10th All India People's Technology Congress, Page no: 56, Rajabazar Science College, University of Calcutta, 6-7 February, 2015.
9. Colloidal processing and slip casting of fine grained zinc doped hydroxyapatite, Proceedings of MMDRM 2014, Kathmandu, Nepal.
10. Fabrication and detailed characterization of Zn²⁺ doped HAp/ β -TCP biphasic ceramic for biomedical applications, Proceedings of MMDRM 2014, Kathmandu, Nepal.
11. Development and characterization of porous Zn²⁺ doped hydroxyapatite loaded with IGF-I, proceedings of International symposium for Research Scholar (ISRS 2012), page no: 58, Indian Institute of Technology, Madras, India on 13-15 December, 2012.
12. Scope of Bi-phasic Calcium Phosphate material in bone repair : A review, Proceedings of International Conference On Advances in Mechanical & its Interdisciplinary Areas (ICAMEI-2012) ISBN: 978-93-82062-79-0, College of Engineering and Management, Kolaghat, India on 27-28th December, 2012.
13. Development and characterization of Plasma sprayed/Zn doped Hydroxyapatite coatings on titanium substrate., Proceedings of International Conference On Advances in Mechanical & its Interdisciplinary Areas (ICAMEI-2012) ISBN: 978-93-82062-79-0, College of Engineering and Management, Kolaghat, India on 27-28th December, 2012.

14. A comparative study on different synthesis techniques of nano hydroxyapatite, proceedings NANOSIM 2012, JIS College of Engineering
15. Synthesis and Characterization of Nano-grained Hydroxyapatite through Slip Casting Technique, Proceedings of 2010 International Conference on Systems in Medicine and Biology 16-18 December 2010, IIT Kharagpur, India

ANY OTHER INFORMATION:

1. **Award:** a. Senior Research Fellowship awarded by Council of scientific and Industrial Research (CSIR), tenure: 2012-2016
b. Post doctoral fellowship awarded by Indian Council of Medical Research (ICMR), 2020
2. Best Poster Paper Award (2nd position): National Conference on Emerging Materials and Nanotechnology, NIT Raipur, 6-7th September, 2019
3. Reviewer of (i) Journal of food science and technology, Springer nature (ii) Materialia, Elsevier (iii) BMC Musculoskeletal Disorders, Springer nature
4. Invited speaker: (i) International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021), BCSIR, Dhaka, Bangladesh.
(ii) IEEE seminar organized by EMB society in association with Dept. of Biomedical Engineering, Netaji Subhash Engineering College, Kolkata, 18th January, 2023.
5. Resource person for webinar on " Application of calcium phosphate bioceramic in bone implant" on 21st June, 2021, Centurion University of Technology and Management, Odisha
6. **Google scholar citation:** 397, h-index:8, h10-index: 8

DECLARATION

I hereby declare that the above written particulars are true to the best of my knowledge and belief.

Date: 07/05/2024

Place: Kolkata

Howa Begam.

(HOWA BEGAM.)