

Curriculum Vitae

Dr. Md Ershad

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CURRENT POSITION: Assistant Professor-Mechanical Engineering Department,
Swami Vivekananda University, Kolkata. **Sept 2022-Present**

TEACHING EXPERIENCE: Assistant Professor-Mechanical Engineering Department,
Gaya College of Engineering, Gaya. **Oct 2019-Aug 2022**

SUBJECT OF INTEREST:

- Additive Manufacturing (3D Printing), Material Science and Technology, Theory of Machine, Strength of Materials, Engineering Graphics and Design, Operation Research, etc.

EDUCATIONAL QUALIFICATIONS:

- **Ph.D. -2018:** **9.2/10** (CGPA)
IIT (BHU) Varanasi.
Thesis: - “Physico-Mechanical properties of rare-earth oxides substituted bioactive soda lime phosphosilicate glasses and glass ceramics”.
- **M.Tech -2013:** Ceramic Engineering / Material Science & Technology: **7.5/10** (CGPA)
IIT (BHU) Varanasi.
- **B.Tech -2011:** Mechanical Engineering: **71.90** (%)
Integral University Lucknow.

AWARDS AND ACHIEVEMENTS:

- Got **IIM-Springer award for best Oral & Poster presentation** (2nd Prize) in Material science and Engineering on 55th National Metallurgists Day (**NMD ATM 2017**) under the aegis of Ministry of Steel, **Government of India** at **BITS Pilani**, India.
- Accomplished 2 weeks of Faculty Development Program (**FDP**) on **ANSYS** organized by E&ICT Academy **IIT Kanpur** from 22 June to 3 July 2020.
- Qualified **GATE (ME)** in 2011, 2012, and 2013.
- Organized **Auto CAD competition** on the occasion of **MECH FEST 2010-11** at Integral University Lucknow India.
- Members Technical Committee of International Conference **ICEDC-2023** organized by Swami Vivekananda University, Kolkata; India on 27-28 Jan 2023.
- Member of faculty recruitment for Swami Vivekananda University in campus placement drive at IIT Kanpur, IIT (BHU) Varanasi, and MNNIT Allahabad.

RESEARCH PAPERS IN INTERNATIONAL/ NATIONAL JOURNALS:

1. **Md Ershad***, Akher Ali, Niraj Singh Mehta, Rajesh Kumar Singh, Santosh Kumar Singh, and Ram Pyare “Mechanical and biological response of (CeO₂ + La₂O₃) substituted 45S5 bioactive glasses for biomedical application”, Journal of the Australian Ceramic Society. “Journal of the Australian Ceramic Society (2020): 1-10. (Springer-SCI I.F-1.9).
2. Akher Ali, **Md Ershad**, Vikash Kumar Vyas, Sumit Kumar Hira, Partha Pratim Manna, B.N. Singh, Shushma Yadav, P. Srivastava, S.P. Singh, Ram Pyare, “Studies on effect of CuO addition on mechanical properties and in vitro cytocompatibility in 1393 bioactive glass scaffold”, Materials Science and Engineering: C, 93,2018, Pages 341-355. (Elsevier-SCI I.F-8.45).
3. **Md Ershad***, Vikash Kumar Vyas, Sunil Prasad, Akher Ali, and Ram Pyare “Effect of Sm₂O₃ substitution on mechanical and biological properties of 45S5 bioactive glass”, Journal of the Australian Ceramic Society 2018. (Springer-SCI I.F-1.9).
4. Akher Ali, **Md Ershad**, Sumit Kumar Hira, Ram Pyare, “Mechanochemical and in vitro cytocompatibility evaluation of zirconia modified silver substituted 1393 bioactive glasses” Boletín de la Sociedad Española de Cerámica y Vidrio, 2020. (Elsevier-SCI I.F-3.48).
5. **Md Ershad***, Hrishikesh, Priyam Mondal, Ranjan Kumar. TEM Analysis and Insights into the Physicomechanical Characteristics of CeLa-Substituted Bio-Glass Ceramics. Journal of Mines, Metals and Fuels. 2023 Dec 30:91-5. (Scopus).
6. **Md Ershad***, Vikash Kumar Vyas, Sunil Prasad, Akher Ali, and Ram Pyare, “Synthesis and characterization of cerium and Lanthanum containing Bioactive Glass, Key Engineering Materials@2017 Trans Tech Publications, Switzerland, Vol.751,pp. 617-628 ISSN: 1662-9795. (Scopus C.S-0.49)
7. **Md Ershad***, Kumar, R., Gupta, N., Mukherjee, A., Ghosh, S., & Mandal, A. (2024). CoO Substituted Borate 1393B3 Glass Scaffold with Enhanced Metallurgical Performance. *Journal of Mines, Metals and Fuels*, 71(12A), 15–20. <https://doi.org/10.18311/jmmf/2023/43176>. (Scopus).
8. Hrishikesh, **Md Ershad***, Kumar R. Examining the Performance Traits of a Rear-Supported V-Cone Flowmeter. *Journal of Mines, Metals and Fuels*. 2023 Dec 30:139-42. (Scopus).
9. Niraj Singh Mehta, Praveen Kumar Sahu, **Md Ershad**, Vipul Saxena, Ram Pyare and Manas Ranjan Majhi. “Effect of ZrO₂ on the sintering behavior, strength and high-frequency dielectric properties of electrical ceramic porcelain insulator” *Materials Research Express* 5 (2018) 015202. (SCI I.F-2.3).
10. Akher Ali, Bhisham N. Singh, Sushma Yadav, **Md Ershad**, Satyendra K. Singh, Sarada P. Mallick, Ram Pyare, CuO assisted borate 1393B3 glass scaffold with enhanced mechanical performance and cytocompatibility: An In vitro study, *Journal of the Mechanical Behavior of Biomedical Materials*, 2020,104231, ISSN 1751-6161. (Elsevier-SCI I.F-4.04).
11. Vikash Kumar Vyas, Arepalli Sampath Kumar, S. P. Singh, Ram Pyare, Akher Ali, Sunil Prasad, **Md Ershad**, Pradeep Srivastava and Sarada Prasanna Mallick, “Assessment of nickel oxide substituted bioactive glass-ceramic on in vitro bioactivity and mechanical properties,” *Boletín de la Sociedad Española de Cerámica y Vidrio*, 69,(12),25 September 2016. (Elsevier-SCI I.F-3.48).
12. Sunil Prasad, Vikas Kumar Vyas, **Md Ershad**, and Ram Pyare, “crystallization and mechanical properties of (45S5-HA) biocomposite for biomedical implantation” *Ceramics-Silikáty* 61 (4), 378-384 (2017). (SCI I.F-1.01).

13. Sunil Prasad, Vikas Kumar Vyas, Pappu Kumar Harijan, **Md Ershad**, and Ram Pyare. (2017) Investigating in vitro bioactivity, magnetic and mechanical properties of iron and cobalt oxide reinforced (45S5-HA) biocomposite. Journal of the Australian Ceramic Society 17. ISSN 2510-1560. (Springer-SCI I.F-1,9).
14. Sunil Prasad, Vikash Kumar Vyas, **Md Ershad**, Ram Pyare, “In vitro bioactivity and physical-mechanical properties of HA based 45S5 io-composites” Key Engineering Materials@2016 Trans Tech Publications, Switzerland, ISSN: 1662-9795, Vol. 702, pp 83-90. (Scopus C.S-0.49).
15. Priyam Mondal, Ranjan Kumar, and **Md Ershad***. (2023). Metallurgical Properties of CeLa Substituted Bio-Glass Ceramics. Journal of Mines, Metals and Fuels, 71(10), 1639–1644. (Scopus)
16. Neeraj Gupta, **Md Ershad***, and Apurba Mandal. (2023). Metallurgical Behavior and Biocompatibility of Boron Trioxide on the Bioactive Glasses. Journal of Mines, Metals and Fuels, 71(11), 2150–2156. (Scopus)
17. Ranjan Kumar, Soumana Biswas, Somnath Das and **Md Ershad** (2023). Experimental Investigation of Welding Parameters On Mild Steel Using Metal Active Gas Welding. Journal of Mines, Metals and Fuels, 71(11), 2078–2083. (Scopus)
18. Vikash K. Vyas, Arepalli S. Kumar, Sunil Prasad, **Md Ershad**, Saryoo P. Singh, and Ram Pyare, “Preparation and Characterization of Cobalt Oxide Doped 45S5 Bioactive Glass-Ceramics”, Innovations in Corrosion and Materials Science, 5, 86-92, 2015.
19. Sandeep Kumar Yadav, Sarthak Ray, **Md Ershad**, Vikash Kumar Vyas, Sunil Prasad, Akher Ali, Sushma Yadav, Manas Ranjan Majhi and Ram Pyare,” Development of Zirconia Substituted 1393 Bioactive Glass for Orthopaedic Application” Oriental Journal of Chemistry. ISSN: 0970-020-2017, Vol. 33, No. (6) Pg. 2720-2730. (Scopus)
20. Sunil Prasad, Vikash Kumar Vyas, Kumari Deepa Mani, **Md Ershad**, and Ram Pyare, “Preparation, In-Vitro Bioactivity and Mechanical Properties of Reinforced 45S5 Bioglass[®] Composite with HA-ZrO₂ Powders”, Oriental Journal of Chemistry.ISSN:0970-020- 2017, Vol.33, No. (3) Pg. 1286-1296. (Scopus)
21. Sandeep Kumar Yadav, Vikash Kumar Vyas, Sarthak Ray, **Md Ershad**, Akher Ali, Sunil Prasad, Manas Ranjan Majhi and Ram Pyare, “In vitro bioactivity and mechanical properties of zirconium dioxide doped 1393 bioactive glass”, International Journal of Scientific & Engineering Research, Volume 8, Issue 3,1321-1330, March-2017, ISSN 2229-5518.
22. Sunil Prasad., Vikas Kumar Vyas., Kumari Deepa Mani, **Md Ershad** and Ram Pyare.” Study of in vitro bioactivity and characterization of HA-TiO₂ based 45S5 biocomposites”. International Journal of Recent Scientific Research. Vol. 7, Issue, 5, pp. 10808-10814, May 2016.
23. Dharmendra Kumar, **Md Ershad***, Ranjan Kumar, Sushma Kumari, & Sandeep Gautam. (2024). Predicting Mosquito Repellent for Smart home system Utilizing Intelligent Machine Learning Model. <https://doi.org/10.5281/zenodo.14551719>. (Scopus)
24. Arnab Das, Ranjan Kumar, Bikash Panja, & **Md Ershad**. (2024). Eco-friendly Ocean Power: Minimizing Environmental Impacts of Marine Energy Technologies. <https://doi.org/10.5281/zenodo.14551500>. (Scopus)

BOOK CHAPTER:

1. **Md Ershad et.al** (2024). Mechanical Behavior of Bioglass Materials for Bone Implantation. *Mechanical Engineering in Biomedical Applications: Bio-3D Printing, Biofluid Mechanics, Implant Design, Biomaterials, Computational Biomechanics, Tissue Mechanics*, 261-275. (Scopus)
2. **Md Ershad et.al**, “Material Classification Based on Structure and Composition” Book Title: “*Elements of Innovation: A Journey into Material Science and Engineering*”, Chapter No:1, pp :10-20, April-2024, [Publisher: Swami Vivekananda University, (Institutional Publisher), Kolkata, India, ISBN: 978-81-964878-5-0]
3. **Md Ershad et.al**, “Mechanical properties of materials with biomedical applications” Book Title: “*Recent Research Advancements in Mechanical Engineering: Material, Design, and production*”, Chapter No:2, pp :26-34, December-2023, [Publisher: Swami Vivekananda University, (Institutional Publisher), Kolkata, India, ISBN:978-81-964878-0-5].
4. **Md Ershad et.al**, Mechanical performance and biocompatibility of hydroxyapatite-gadolinium oxide (HA-Gd₂O₃) composites for bone regeneration applications. In: *Computational Techniques in Modern Engineering Research*. 2024. ISBN:978-93-6233-525-8. doi:10.62906/bs.book.210.
5. **Md Ershad et.al** Synthesis and characterization of cerium-substituted HA composite. In: *Research Methodologies in Engineering and Applied Science*. 2024. ISBN:978-93-6233-705-4.
6. **Md Ershad et.al**. (2024). An investigation into the performance characteristics of a rear-supported V-cone flowmeter. 10.1201/9781003596745-56. (Scopus)

PATENT:

1. **Md Ershad et.al** “Patent on “Fabrication and design of the 360-degree rotating vehicle”, **Indian Patent**, Application no **202331022706A**, Dated 07/04/2023.
2. **Md Ershad et.al** “Plastic- Based Composite for Concrete Production”, **Indian Patent**, Application no **202331055315A**, Dated 08/09/2023.
3. **Md Ershad et.al** “Fabrication and design of the Solar”, **Indian Patent**, Application no **202331057258A**, Dated 29/09/2023.
4. **Md Ershad et.al** “Automatic Electromagnetic Brake Using Ferromagnetic Material Scrap”, **Indian Patent**, Application no **202331057359A**, Dated 13/10/2023.
5. **Md Ershad et.al** “Intelligent Autonomous Wheel-Driven Sprayer System for Precision Agriculture”, **Indian Patent**, Application no **202431028477A**, Dated 19/04/2024.
6. **Md Ershad et.al** “Transformation of Dairy By-Product into Sustainable Biodegradable Material”, **Indian Patent**, Application no **202431028476A**, Dated 19/04/2024.

INTERNATIONAL/ NATIONAL CONFERENCES AND WORKSHOPS ATTENDED:

1. Attended the 9th International Conference on Materials Science and Technology (**MSAT-9 2016**) and presented the **Poster presentation** on the topic “Synthesis and characterization of Cerium and Lanthanum-containing bioactive glass” from December 14th -15th, 2016 at Swisotel Le Concorde **Bangkok, Thailand**.
2. Attended **55th National Metallurgists Day (NMD ATM 2017)** under the aegis of the **Ministry of Steel, Government of India**, and presented the **Oral presentation** on the topic “Effect of La³⁺/Al³⁺ doping on mechanical and biological properties of 45S5 based bioactive glass and glass ceramics” during November 11th -14th, 2017 at **BITS Pilani Goa campus, India**.
3. Attended International Conference on Material Engineering (**ICME 2017**) and presented a **Poster presentation** on the topic of “Effect of Samarium oxide substitution on mechanical behavior and biological properties of bioactive glass and glass-ceramics” during June 2nd -4th, 2017 at **IIT Kanpur, India**.
4. Attended International Conference on Advances in Biological Systems and Material Science in NanoWorld (**ABSMSNW-2017**) and presented a **Poster presentation** on the topic of “Effect of CeO₂ doping on mechanical and biological properties of 45S5 based bioactive glass and glass ceramics” on February 19th -23rd, 2017 at the department of Physics **IIT (BHU) Varanasi, India**.
5. Attended 8th International conference on Advance Material Development & Performance (**AMDP 2017**) and presented a **Poster presentation** on the topic of “Effect of Sm₂O₃ substitution on mechanical and biological properties of 45S5 bioactive glass and glass-ceramics” from July 11th -15th, 2017 at the department of Physics **Savitribai Phule Pune University, Pune, India**.
6. Presented poster on the topic “Effect of CeO₂ and La₂O₃ doping on Mechanical & Biological properties of 45S5 bioactive glass and glass-ceramics” on the Institute Day during February 25th -26th, 2017 at Swatantra Bhawan **IIT (BHU) Varanasi, India**.
7. Presented **poster** on the topic “Study on effect of CuO on Mechanical properties and in-vitro performance in 13-93 bioactive glass ceramics” on the Institute Day during February 25th -26th, 2017 at Swatantra Bhawan **IIT (BHU) Varanasi, India**.
8. Presented **poster** on the topic “Structural and bioactivity effect on (45S5 HA-ZrO₂) biocomposite for bone tissue implantation” on the Institute Day from February 25th -26th, 2017 at the department of Swatantra Bhawan **IIT (BHU) Varanasi, India**.
9. Presented **poster** on the topic “Bioactivity and mechanical behavior of cobalt oxide doped bioactive glass and glass-ceramic” on the Institute Day from February 26th -27th, 2015 at Swatantra Bhawan **IIT (BHU) Varanasi, India**.
10. Attended **National Workshop** on “Advanced Ceramic in the field of “Nanotechnology for Electro-Ceramic” held on March 27th-28th 2015 organized by the department of Ceramic Engineering **IIT (BHU) Varanasi, India**.
11. Attended **workshop** Thermal Analysis (**THERMANS-2016**) held on January 21st -22nd, 2016 organized by the Department of Physics **IIT (BHU) Varanasi, India**.
12. Attended **author workshop** held on February 10th, 2014 jointly organized by **Springer** and **IIT (BHU) Varanasi, India**.
13. Attended the 2nd **National workshop** on “Advanced Ceramic and Nontechnology (Theme-Electro Ceramic)” held on December 4th -5th, 2015 at the department of Ceramic Engineering **IIT (BHU) Varanasi, India**.

14. Presented **poster** on the topic “Destructive & non-destructive behavior of nickel oxide doped bioactive glass & glass-ceramic” on the Institute Day during April 2nd - 3rd, 2016 at Swatantra Bhawan **IIT (BHU) Varanasi**, India.
15. Participated and work as a **volunteer** in the Institute Day from February 26th -27th, 2015 at the department of Ceramic Engineering **IIT (BHU) Varanasi**, India.
16. Participated and work as a **volunteer** in the Institute Day during April 2nd -3rd, 2016 department of Ceramic Engineering **IIT (BHU) Varanasi**, India.

FELLOWSHIPS:

- Ph.D (**SRF**)- MHRD, Government of India 2015-2018
- Ph.D (**JRF**)- MHRD, Government of India 2013-2015
- M.Tech- MHRD, Government of India 2011-2013
- B.Tech- Merit Cum Means Scholarship 2007-2011
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RESEARCH EXPERIENCE:

- M.Tech. Dissertation on the Topic “**Physico-chemical properties of 45S5 bioglass[®] substituted with Fe₂O₃ & TiO₂**” under the guidance of Prof. Ram Pyare (Supervisor), Department of Ceramic Engineering,, **IIT (BHU) Varanasi, India.**
- B.Tech. Project on the Topic “**Solar panel-based air cooler**” under the guidance of Mr. Mohd. Suhail and Mr. C. Prajapati, Department of Mechanical Engineering, Integral University, Lucknow, India.

SUMMER TRAININGS:

- Industrial Training on “**Study of Bogie of Wagon**” from June 21st to July 16th,2010 at Research Design & Standard Organization (**R.D.S.O**), **Ministry of Railway** Manak Nagar, Lucknow (U.P), India.
- Industrial Training on “**Production of Steel**” from June 15th to July 11th, 2009 at Rashtriya Ispat Nigam Limited, **Vizag Steel Plant** Visakhapatnam (A.P), India.

HOBBIES AND INTERESTS:

- Hobbies: Reading Newspapers, Cooking, Cricket.
- Software: Auto CAD, Ansys, PowerPoint, Microsoft office

ACADEMIC REFERENCES:

- | | |
|---|---|
| <p>1. Dr. B. Singh
Sr. Principal Scientist
Polymers, Plastics and Composites
division
CSIR-CBRI Roorkee-India
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Professor
Department of Ceramic Engineering
Indian Institute of Technology (BHU),
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Date: 01/01/2025

Place: Kolkata

Md. Emrof