

# Curriculum Vitae

## Dr. Md Ershad

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**Google Scholar Site:** <https://scholar.google.co.in/citations?user=bZ1fHXIAAAAJ&hl=en>

**Total No. of Citations= 360 h-index= 11; i10-index= 13 (Google Scholar)**

**Total No. of Citations= 235 h-index= 8 (SCOPUS)**



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

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

### **SUBJECT OF INTEREST:**

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

### **EDUCATIONAL QUALIFICATIONS:**

| Degree | Specialization                                            | Institution                     | Year | CGPA/%                     |
|--------|-----------------------------------------------------------|---------------------------------|------|----------------------------|
| Ph.D.  | Advance Materials<br>(Interdisciplinary Research)         | IIT (BHU), Varanasi             | 2018 | <b>9.2 / 10<br/>(CGPA)</b> |
| M.Tech | Ceramic Engineering /<br>Material Science &<br>Technology | IIT (BHU), Varanasi             | 2013 | <b>7.5 / 10<br/>(CGPA)</b> |
| B.Tech | Mechanical Engineering                                    | Integral University,<br>Lucknow | 2011 | <b>71.90%</b>              |

### **TECHNICAL SKILLS:**

- ✓ **Materials Characterization:** XRD, SEM, FTIR, TEM, Microhardness Testing, UTM
- ✓ **Biomedical Materials:** Bioactive Glasses, Glass Ceramics, Biomaterials for Bone Implantation
- ✓ **Manufacturing & Design:** Additive Manufacturing (3D Printing), AutoCAD, CATIA
- ✓ **Mechanical & Thermal Analysis:** Mechanical Testing, Tribology, Thermal Analysis
- ✓ **Software & Data Analysis:** Origin, ANSYS, MS Office, PowerPoint
- ✓ **Research & Academic Skills:** Scientific Writing, Patent Drafting, Research Methodology, Technical Documentation
- ✓ **Experimental Techniques:** Sintering, Powder Processing, Glass Synthesis, In-vitro Bioactivity Analysis

## AWARDS AND ACHIEVEMENTS:

- Received the **IIM–Springer Award (2nd Prize)** for Best Oral & Poster Presentation at **NMD-ATM 2017, BITS Pilani**, under the Ministry of Steel, Govt. of India.
- Received a Certificate of Appreciation from **NIF–India (DST, Govt. of India)** for serving as a Reviewer in the **INSPIRE–MANAK** Program (2023–2026).
- Qualified **GATE (Mechanical Engineering)** in **2011, 2012, and 2013**.
- Completed **2-week FDP on ANSYS** by E&ICT Academy, **IIT Kanpur** (June 2020).
- Session Chair in **ICAMMTS-2026** during March 27–28, 2026 at GNIT Noida.
- Member of **NAAC** committee at Swami Vivekananda University, Kolkata.
- Served as **Technical Committee Member** for **ICEDC-2023, 2024 & 2025**, at Swami Vivekananda University, Kolkata.
- Member of **faculty recruitment drives** at **IIT Kanpur, IIT (BHU) Varanasi, and MNNIT Allahabad** representing Swami Vivekananda University 2023.

## 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

## THESIS WORK / ACADEMIC PROJECTS:

- **Ph.D.Thesis** on the Topic “**Physico-Mechanical properties of rare-earth oxides substituted bioactive soda lime phosphosilicate glasses and glass ceramics**” under the joint guidance of **Prof. Ram Pyare** (Supervisor), Department of Ceramic Engineering., **IIT (BHU) Varanasi**, India.
- **M.Tech. Dissertation** on the Topic “**Physico-chemical properties of 45S5 bioglass<sup>®</sup> substituted with Fe<sub>2</sub>O<sub>3</sub> & TiO<sub>2</sub>**” 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 joint guidance of **Mr. Mohd. Suhail and Mr. C. Prajapati**, Department of Mechanical Engineering, Integral University, Lucknow, India.

## DOCTORAL THESIS GUIDED:

| Title of Thesis                                                                       | Name of Students | Year of Registration | Role as a Supervisor/ Co- Supervisor | Current Status |
|---------------------------------------------------------------------------------------|------------------|----------------------|--------------------------------------|----------------|
| Biocompatibility and Mechanical behaviour of Advanced Materials for Bone Implantation | Priyam Mondal    | 2021                 | Dr. Md Ershad (Co- Supervisor)       | Awarded (2026) |

## RESEARCH PAPERS IN INTERNATIONAL/ NATIONAL JOURNALS:

1. **Md Ershad**, Ranjan Kumar, and Priyam Mondal. Effect of La<sub>2</sub>O<sub>3</sub> on the physicommechanical behavior of calcium fluoroaluminosilicate glass. Emerging Materials Research. 2025 Dec 1;14(4):325-31. . (SCI I.F-1.2).
2. **Md Ershad\***, Akher Ali, Niraj Singh Mehta, Rajesh Kumar Singh, Santosh Kumar Singh, and Ram Pyare “Mechanical and biological response of (CeO<sub>2</sub> + La<sub>2</sub>O<sub>3</sub>) 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).

3. **Md Ershad\***, Vikash Kumar Vyas, Sunil Prasad, Akher Ali, and Ram Pyare “Effect of  $\text{Sm}_2\text{O}_3$  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**, 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).
5. 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).
6. **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).
7. **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)
8. **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).
9. 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).
10. Niraj Singh Mehta, Praveen Kumar Sahu, **Md Ershad**, Vipul Saxena, Ram Pyare and Manas Ranjan Majhi. “Effect of  $\text{ZrO}_2$  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).
11. 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).
12. 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).
13. 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).
14. 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).
15. 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).
16. 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.

17. 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)
18. 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)
19. 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.
20. 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)
21. 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-ZrO<sub>2</sub> Powders”, *Oriental Journal of Chemistry*.ISSN:0970-020- 2017, Vol.33, No. (3) Pg. 1286-1296. (Scopus)
22. 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.
23. Sunil Prasad., Vikas Kumar Vyas., Kumari Deepa Mani, **Md Ershad** and Ram Pyare.” Study of in vitro bioactivity and characterization of HA-TiO<sub>2</sub> based 45S5 biocomposites”. *International Journal of Recent Scientific Research*. Vol. 7, Issue, 5, pp. 10808-10814, May 2016.

#### **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. **Ranjan Kumar, Md Ershad et.al.** (2024). Solar energy utilization in electric vehicles. 10.1201/9781003596745-56. (Scopus)
3. **Md Ershad et.al.** (2024). An investigation into the performance characteristics of a rear-supported V-cone flowmeter. 10.1201/9781003596745-56. (Scopus)
4. **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]
5. **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].
6. **Md Ershad et.al**, Mechanical performance and biocompatibility of hydroxyapatite-gadolinium oxide (HA-Gd<sub>2</sub>O<sub>3</sub>) 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.
7. **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.

### PATENT (PUBLISHED):

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 Cooler”, **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.
7. **Md Ershad et.al** “Automatic Food Serving Machine” **Indian Patent**, Application no 202531004917A Dated 21/01/2025.
8. **Md Ershad et.al** “Bioglass Composite for Bone replacement” **Indian Patent**, Application no 202531016530A Dated 25/02/2025.
9. **Ranjan Kumar, Md Ershad et.al** “Bioglass Composite for Bone replacement Bioglass Composite for Bone Healing” **Indian Patent**, Application no 202531016529A Dated 25/02/2025.

### INTERNATIONAL/ NATIONAL CONFERENCES AND WORKSHOPS:

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 14<sup>th</sup> -15<sup>th</sup>, 2016 at Swissotel 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 La<sup>3+</sup>/Al<sup>3+</sup> doping on mechanical and biological properties of 45S5 based bioactive glass and glass ceramics” during November 11<sup>th</sup> -14<sup>th</sup>, 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 2<sup>nd</sup> -4<sup>th</sup>, 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 CeO<sub>2</sub> doping on mechanical and biological properties of 45S5 based bioactive glass and glass ceramics” on February 19<sup>th</sup> -23<sup>rd</sup>, 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 Sm<sub>2</sub>O<sub>3</sub> substitution on mechanical and biological properties of 45S5 bioactive glass and glass-ceramics” from July 11<sup>th</sup> -15<sup>th</sup>, 2017 at the department of Physics **Savitribai Phule Pune University, Pune**, India.

6. **Oral presentation** at the **ANRF-sponsored** 4th ICEDC 2026 on “Mechanical Enhancement of Bioactive Glass via Dual Aluminum and Gadolinium Incorporation for In Vivo Performance from December 27<sup>th</sup> -28<sup>th</sup>, 2026 at Swami Vivekananda University, Kolkata.
7. Presented **Poster presentation** on the topic “Structural and bioactivity effect on (45S5 HA-ZrO<sub>2</sub>) biocomposite for bone tissue implantation” on the Institute Day from February 25<sup>th</sup> - 26<sup>th</sup>, 2017 at the department of Swatantra Bhawan **IIT (BHU) Varanasi**, India.
8. Presented **Poster presentation** on the topic “Effect of CeO<sub>2</sub> and La<sub>2</sub>O<sub>3</sub> doping on Mechanical & Biological properties of 45S5 bioactive glass and glass-ceramics” on the Institute Day during February 25<sup>th</sup> -26<sup>th</sup>, 2017 at Swatantra Bhawan **IIT (BHU) Varanasi**, India.
9. Presented **Poster presentation** 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 25<sup>th</sup> -26<sup>th</sup>, 2017 at Swatantra Bhawan **IIT (BHU) Varanasi**, India.
10. Presented **Poster presentation** on the topic “Bioactivity and mechanical behavior of cobalt oxide doped bioactive glass and glass-ceramic” on the Institute Day from February 26<sup>th</sup> -27<sup>th</sup>, 2015 at Swatantra Bhawan **IIT (BHU) Varanasi**, India.
11. Attended **National Workshop** on “Advanced Ceramic in the field of “Nanotechnology for Electro-Ceramic” held on March 27<sup>th</sup> -28<sup>th</sup> 2015 organized by the department of Ceramic Engineering **IIT (BHU) Varanasi**, India.
12. Attended **workshop** Thermal Analysis (**THERMANS-2016**) held on January 21<sup>st</sup> -22<sup>nd</sup>, 2016 organized by the Department of Physics **IIT (BHU) Varanasi**, India.
13. Attended **author workshop** held on February 10<sup>th</sup>, 2014 jointly organized by **Springer** and **IIT (BHU) Varanasi**, India.
14. Attended the 2nd **National workshop** on “Advanced Ceramic and Nontechnology (Theme- Electro Ceramic)” held on December 4<sup>th</sup> -5<sup>th</sup>, 2015 at the department of Ceramic Engineering **IIT (BHU) Varanasi**, India.

#### SUMMER TRAININGS:

- Industrial Training on “**Study of Bogie of Wagon**” from June 21<sup>st</sup> to July 16<sup>th</sup>, 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 15<sup>th</sup> to July 11<sup>th</sup>, 2009 at Rashtriya Ispat Nigam Limited, **Vizag Steel Plant** Visakhapatnam (A.P), India.

#### ACADEMIC REFERENCES:

1. **Prof. Akhlesh Lakhtakia**  
(Professor)  
Department of Engineering Science  
and Mechanics  
**Pennsylvania State University, USA**  
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2. **Dr. K. Annapurna**  
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Place: Kolkata

*Md. Enshad*