

## Brief CV

1. **Name:** Rajesh Kumar

**Present Designation:** Scientist- E and Head - **ACSC Group, CBRI**

2. **Date of Birth:** 15.01.1992

3. **Email:** [rajeshkumar.cbri@csir.res.in](mailto:rajeshkumar.cbri@csir.res.in)

4. **Tel.:** 01332-283238



### 5. Brief Introduction

He commenced his journey at CSIR-CBRI, Roorkee, serving as a 'Trainee Scientist' from **Sept.' 2012 to Jan.' 2016**. He then progressed to 'Scientist-C', contributing to R&D from **Jan.' 2016 to Jan.' 2020** for 4 years. Further, as a **Senior Scientist (January 2020 – January 2024)**, he has contributed to advancements in building materials and concrete technology. Currently, he holds the position of '**Principal Scientist**', which he has held since **January 2024**. Additionally, he took on leadership responsibilities as the **Head of Organic Building Materials Division** from Jan. 2022 to March 2023, followed by **Associate Head, ACSC Group** since August 2024 and **Head, ACSC Group** since April 2026 to till date.

He is working in the field of **Civil Engineering**, with a specialization in *Stone Waste, Low Carbon Cement, LC<sup>3</sup> – Limestone Calcined Clay Cement, Lightweight concretes, Wastes utilization, Statistical modelling, Clinker Synthesis, Polymer- cement interaction, Stabilized mud composite, Waterproofing admixtures, and Microstructure & Hydration of cementitious materials*. He did his **B. Tech. (Hons.)** in 'Civil Engineering' in 2012 from '**Madan Mohan Malaviya University of Technology, Gorakhpur (Uttar Pradesh), India**'. He has obtained his **M. Tech. (Distinction)** in the field of '*Building Engineering & Disaster Mitigation*' in 2014 from the '**Academy of Scientific and Innovative Research (AcSIR, Chennai, India)**'. He submitted his **PhD thesis** on 2 February 2026 to the '**Department of Structural Engineering, IIT Delhi**'. His research focuses on low-carbon cement, particularly Limestone Calcined Clay Cement (LC<sup>3</sup>) based cementitious system.

He has made a few contributions to his profession via his intense interest in research and academic endeavors. *He has published 65+ international peer-reviewed SCI/ ESCI/Scopus-indexed papers/ book chapters. He has presented 40+ technical papers and 15+ Expert/Institutional Lectures at various National and International conferences including IITs.* He has participated in over **40** webinars, certificate courses, and training. *He has contributed to the filing of 03 patents, along with transferring of 09 technologies.* He has been the recipient of '**ISDA- Infracon National Awards (IINA) – 2026**' for contributions to research and product development in the areas of low-carbon building materials and waste utilisation, '**Achievement Award for Scientist- 2024**' by CIDC established by Planning Commission (Now NITI Aayog), Govt. of India; **Young Engineers Award: 2022–23** by 'The Institution of Engineers, Govt. of India, **08 Best/ Outstanding Research Paper Awards, 01 Best Technology Award** for contributions in Civil Engineering Research. He has accomplished different R&D projects sponsored by the *Council of Scientific & Industrial Research (CSIR), Department of Science and Technology (DST), Ministry of Environment, Forest, and Climate Change (MoEF&CC), Indo-U.S. Science and Technology Forum (IUSSTF)* etc. along with several Industries sponsored projects (from *M/s. Reliance Industries Limited, India, M/s. Apple Chemie India Pvt Ltd., M/s. Rivashaa Eco Design Solutions P. Ltd., Ahmedabad, Gujarat, India* etc.).

Total articles: **65+ Nos. (Affiliation as CSIR-CBRI, Roorkee, India)**

**Citations: 1200 +**

**h- index: 21**

**i10- index: 32**

**(As on 29.06.2026)**

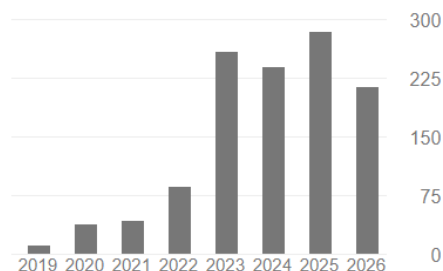
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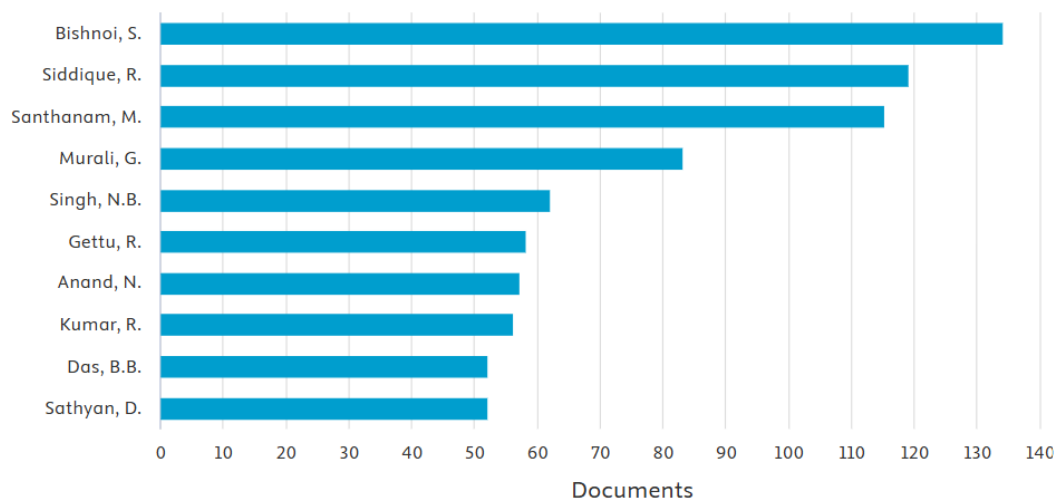
	All	Since 2021
Citations	1202	1125
h-index	21	20
i10-index	32	32



He is contributing towards 03 Sustainable Development Goal (SDGs), which are-

- i. Goal 9: Industry, Innovation and Infrastructure**
- ii. Goal 11: Sustainable Cities and Communities**
- iii. Goal 12: Responsible Consumption and Production**

He has worked on different R&D projects on ‘waste utilization’ at CSIR-CBRI and majorly contributed for technology transfer on Low-grade limestone waste. In 2018; India's first start-up plant for Low-grade limestone waste management; recognized by Central and State government (under Start-up Policy- 2017, Waste to Wealth and Swachh Bharat Abhiyan) was inaugurated in Kota, Rajasthan. The plant has the capacity to manufacture 8,000 flooring tiles, 3,500 pavers and 5,000 bricks daily from the slurry. It can use up to 100 Ton Low-grade limestone waste per day. Recently, in Jan’ 2024; he has contributed to transfer of 02 more technologies i.e. “Low-Carbon Cement Concrete Composites using Sustainable Chemical Admixtures” and “Innovative Cool Roof” to M/s. Litagg Industries Pvt Ltd, Gujarat, India. All the above technologies have been implemented in the field to utilize waste materials along with the low carbon cement to develop sustainable lightweight building products and roof screed etc. Apart from the above technology dissemination; as it is well known that ‘**Low Carbon Cement**’ is one of the Top 10 Emerging Technologies as per World Economic Forum Report- 2020 (Source: [https://www3.weforum.org/docs/WEF\\_Top\\_10\\_Emerging\\_Technologies\\_2020.pdf](https://www3.weforum.org/docs/WEF_Top_10_Emerging_Technologies_2020.pdf)). Therefore, keeping this in mind; CSIR- CBRI is doing comprehensive R&D work to develop/synthesize lowcarbon and low energy new as well as conventional binders using different kinds of waste materials. As a result of his research contributions, **he is among one of the top 10 contributors in INDIA in the field of ‘Cement’ (as per the Elsevier/ Scopus database; Dated: 22.06.2026).**



**Indian status**

He is an active member of different National and International scientific/ technical societies such as- *The International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM)*, *American Concrete Institute (ACI)*, *Indian Concrete Institute (ICI)*, *The Institution of Engineers (India)*, *American Society of Civil Engineers (USA)*, *ASTM International* and *The Indian Science Congress Association (ISCA)*. He is an active reviewer for numerous SCI indexed journals, published by *Elsevier*, *ASCE*, *Springer*, *Taylor and Francis* etc. He is also making contributions to the strategic sector by serving as a member of eight Bureau of Indian Standard committees. In addition to his scholarly research pursuits, he actively engages with the academic community. He has contributed to the spread of knowledge by guiding students and delivering lectures on topics related to his area of expertise. He has successfully guided 15+ student's dissertation/thesis at different academic levels (UG & PG). He is currently guiding 02 PhD scholars in 'Low Carbon Cement' and 'Lightweight Concrete'. He has engaged in a diverse array of both curricular and extra-curricular pursuits such as- organizing the workshops, seminars etc.

**Official CV:** <https://cbri.res.in/scientific-profiles/group-iv/rajesh-kumar/>

**Linkdin Profile:** <https://www.linkedin.com/in/rajesh-kumar-sharma-b845496a/>

## 6. Academic Qualification:

Degree	University / Institution	Division / Equivalent	Year of Passing	Specialization
B. Tech	Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh, India	1 <sup>st</sup> (Hons.)	2012	Civil Engineering
M. Tech	Academy of Scientific and Innovative Research/ CSIR- CBRI Roorkee, Uttarakhand, India	1 <sup>st</sup> (Distinction)	2014	Building Engineering & Disaster Mitigation
Ph. D	Indian Institute of Technology (IIT) Delhi, New Delhi, India	CGPA 9/10	Thesis submitted on 02.02.2026	Structural Engineering

## 7. Experience Details (In reverse chronological order): Since Sept' 2012

Institute / Organization	Type (Academic Instt./Industry / Self-employed)	Post Held	From (date) To (date)	Nature of Job
CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab	Trainee Scientist	05-09-2012 To 07-01-2016	The research work in the project, 'Cost-effective Building Products using Low grade limestone Waste' has been carried out.
CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab/ Academic Institute	Scientist	08-01-2016 To 07-01-2020	The R&D projects related to Stone wastes utilization, Lightweight concretes, Composite cement etc.
Academy of Scientific and Innovative Research/ CSIR- CBRI Roorkee, Uttarakhand, India	Academic Institute	Assistant Professor	20-07-2021 To Till date	Mentorship and Teaching to PG students

CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab	Senior Scientist	08-01-2020 To Till date	The R&D projects related to Statistical modelling, ANOVA, Multi-attribute optimization technique, Low carbon/ Limestone Calcined Clay Cement, Low Energy/ CSAB cement etc.
CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab	Head- Organic Building Materials Group	01-01-2022 To 31-03-2023	
CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab	Principal Scientist: Advanced Concrete, Steel & Composites (ACSC) Group	08-01-2024 To Till date	
CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab	Associate Head: Advanced Concrete, Steel & Composites (ACSC) Division	01-08-2024 To 31-03-2026	
CSIR-Central Building Research Institute, Roorkee, Uttarakhand, India	National Research Lab	Head: Advanced Concrete, Steel & Composites (ACSC) Division	01-04-2026 To Till date	

**8 Papers/Book Chapters Published in International Journals, & Presented in International Conferences: (\*Corresponding Author)**

**(a) International Peer-reviewed (SCI/SCIE): 28 Nos. (TOTAL Impact Factor: 173.0)**

- Rajesh Kumar\***, N Gopalakrishnan & Shashank Bishnoi (2026). Temperature-dependent Hydration Kinetics, Phase Assemblage and Thermodynamic Modelling of Tricalcium Oxy Silicate–Gypsum Composite Binder. *Advanced Powder Technology*, Elsevier, 37 (8), Article 105334. <https://doi.org/10.1016/j.apt.2026.105334> (Impact Factor: 4.5)
- Rajesh Kumar\***, N Gopalakrishnan & Shashank Bishnoi (2026). Influence of Elevated Curing Temperature on Boron-Doped  $\beta$ -Dicalcium Silicate Paste with Gypsum: Phase Assemblage, Microstructure and Pore-Structure Evolution. *Construction and Building Materials*, Elsevier. (Impact Factor: 8.9)
- Rajesh Kumar\*** (2026). Valorising Industrial Limestone Slurry Waste into Low Carbon Portland Limestone Cement based Aircrete: Packing Density, Thermo Mechanical Performance and Microstructural Insights. *European Journal of Environmental & Civil Engineering*, Taylor and Francis, 30(1). <https://doi.org/10.1080/19648189.2026.2680486>. (Impact Factor: 2.4)
- Rajesh Kumar\***, N Gopalakrishnan & Shashank Bishnoi (2026). Effects of Elevated Curing Temperatures on Synthesized M3-C3S Cement Phase with and without Gypsum: Hardened

- Microstructure and Phase Composition. Archives of Civil and Mechanical Engineering, Springer Nature, **26**, 154. <https://doi.org/10.1007/s43452-026-01516-3>. (Impact Factor: 4.9)
5. **Rajesh Kumar\***, N Gopalakrishnan & Shashank Bishnoi (2026). Influence of Curing Temperature on Hydration Kinetics, Mechanical Properties, and Microstructural Development of Cementitious Binders: A Comprehensive Review. Powder Technology, Elsevier, 122284. <https://doi.org/10.1016/j.powtec.2026.122284>. (Impact Factor: 5.5)
  6. **Rajesh Kumar\***, Shashank Bishnoi & N Gopalakrishnan (2026). Stabilizing Reactive Cement Phase through Targeted Doping: The Case of  $\beta$ -Belite and Boric Acid. *Journal of the Australian Ceramic Society* (Springer Nature). <https://doi.org/10.1007/s41779-025-01344-3>. (Impact Factor: 2.6/Q2)
  7. Pushpender & **Rajesh Kumar\*** (2026). Structural & Thermal Performance Optimization of Low Carbon Precast Concrete Sandwich Panels with Lightweight Aggregates, Marble Waste, & Fly Ash. *European Journal of Environmental & Civil Engineering*, Taylor and Francis, 30(1). <https://doi.org/10.1080/19648189.2026.2624607>. (Impact Factor: 2.4)
  8. Nitish Kumar, Akshay Sharma, Arpit Goyal\*, A.B. Danie Roy, **Rajesh Kumar** (2026). Utilization of waste-derived carbon black nanoparticles for enhancing thermo-mechanical properties of cement mortar. *Magazine of Concrete Research*, 78(5-6), 359-371. <https://doi.org/10.1680/jmacr.25.00294>. (Impact Factor: 2.3)
  9. Dipendra Das, **Rajesh Kumar\*** and Srinivasarao Naik B (2025). Effect of curing temperature on mechanical, durability, and microstructural properties of blended pure phases of cement with fly ash and limestone. *Journal of the Indian Chemical Society*, 102(11), 102165. <https://doi.org/10.1016/j.jics.2025.102165>. (Impact Factor: 3.4)
  10. Mukherjee, S., **Kumar, R.\***, Behera, M., Goyal, A., & Rahman, M. R. (2025). Rheology, mechanical properties and microstructure characterization of limestone calcined clay cement (LC3) incorporated sustainable lightweight self-compacting concrete. *Developments in the Built Environment*, 100601. <https://doi.org/10.1016/j.dibe.2025.100601>. (Impact Factor: 8.7/Q1) (**“Best Research Paper Certificate -2025 by ‘Director, CSIR- CBRI along with Jury’**)
  11. Singh, S., Shekaran, K. R., Agarwal, R., Kalpana, V., Athar, H., **Kumar, R.**, & Naik B, S.\* (2025). Enhancing the strength and durability of mixed biochar-blended mortars after accelerated carbonation curing (ACC). *Journal of Building Engineering*, 100, 111743. <https://doi.org/10.1016/j.jobe.2024.111743>. (Impact Factor: 8.1)
  12. Verma, P., **Kumar, R.\***, Mukherjee, S., & Sharma, M. (2024). Sustainable self-compacting concrete with marble slurry and fly ash: Statistical modeling, microstructural investigations, and rheological characterization. *Journal of Building Engineering*, 94, 109785. <https://doi.org/10.1016/j.jobe.2024.109785>. (Impact Factor: 8.1)
  13. Sharma, C., Rajput, A., **Kumar, R.\***, Srinivasaraonaik, B., Paswan, R., & Goyal, A. (2024). Thermo-mechanical and microstructural characterization of LECA and low carbon cement based lightweight mortar using box behnken design, and embodied energy analysis. *Construction and Building Materials*, 411, 134530. <https://doi.org/10.1016/j.conbuildmat.2023.134530>. <https://doi.org/10.1016/j.conbuildmat.2023.134530>. (Impact Factor: 8.9)
  14. Singh, D., **Kumar, R.\***, Sanjay Nighot, N., Rajput, A., Prajapati, A., Kumar Singh, B., Serkan Kirgiz, M., Srinivasaraonaik, B., Kumar Mishra, R., Khan, S., & Lakhani, R. (2023). A comprehensive review on valorisation of octal by-product as supplementary admixtures in the production of fired and unfired bricks. *Construction and Building Materials*, 408, 133641. <https://doi.org/10.1016/j.conbuildmat.2023.133641>. (Impact Factor: 8.9)

15. Bhandari, I., & Kumar, R.\* (2023). Effect of silica fume and PCE-HPMC on LC3 mortar: Microstructure, statistical optimization and life cycle assessment. *Construction and Building Materials*, 403, 133073. <https://doi.org/10.1016/j.conbuildmat.2023.133073>. (Impact Factor: 8.9)
16. Bhandari, I., Kumar, R.\*, Sofi, A., & Nighot, N. S. (2023). A systematic study on sustainable low carbon cement – Superplasticizer interaction: Fresh, mechanical, microstructural and durability characteristics. *Heliyon*, 9(9), e19176. <https://doi.org/10.1016/j.heliyon.2023.e19176> (Impact Factor: 3.6)
17. Agarwal, R., Pawar, N., Supriya, Rawat, P., Rai, D., Kumar, R., & Naik B, S.\* (2023). Thermo-mechanical behavior of cementitious material with partial replacement of Class-II biochar with accelerated carbonation curing (ACC). *Industrial Crops and Products*, 204, 117335. <https://doi.org/10.1016/j.indcrop.2023.117335> (Impact Factor: 6.4).
18. Anurag, Kumar, R.\*, & Goyal, S. (2023). Recycling of calcined low-grade limestone slurry in producing low carbon cementitious binder towards sustainable environment: ANOVA, statistical modeling & microstructural performance. *Environmental Development*, 47, 100910. <https://doi.org/10.1016/j.envdev.2023.100910> (Impact Factor: 4.8) (“**Best Research Paper Award -2023 by ‘Director, CSIR- CBRI along with Jury’ ” and “Outstanding Research Paper in Civil Engineering” by Special Jury Award, part of 3rd- CE&CR Annual Awards**)
19. Nighot, N. S., & Kumar, R.\* (2023). A comprehensive study on the synthesis and characterization of eco-cementitious binders using different kind of industrial wastes for sustainable development. *Developments in the Built Environment*, 14, 100135. <https://doi.org/10.1016/j.dibe.2023.100135> (Impact Factor: 8.7)
20. Abhilasha, Kumar, R.\*, Lakhani, R., Mishra, R. K., & Khan, S. (2023). Utilization of solid waste in the production of Autoclaved aerated concrete and their effects on its physio-mechanical and Microstructural properties: Alternative sources, characterization, and performance insights. *International Journal of Concrete Structures and Materials*, 17(1). <https://doi.org/10.1186/s40069-022-00569-x> (Impact Factor: 4.6)
21. Tomar, P., Kumar, R.\*, Lakhani, R., Srivastava, A., & Chhibber, V. K. (2022). Improvement in hygroscopic property of macro-defect free cement modified with hypromellose/potassium methyl silicate copolymer and pulverized fly ash. *Journal of Thermal Analysis and Calorimetry*, 147(22), 12417-12430. <https://doi.org/10.1007/s10973-022-11447-9> (Impact Factor: 4.1).
22. Kumar, R.\*, Srivastava, A., & Lakhani, R. (2021). Industrial wastes-cum-Strength enhancing additives incorporated lightweight aggregate concrete (LWAC) for energy efficient building: A comprehensive review. *Sustainability*, 14(1), 331. <https://doi.org/10.3390/su14010331> (Impact Factor: 4.1).
23. Kumar, R.\* (2021). Effects of high volume dolomite sludge on the properties of eco-efficient lightweight concrete: Microstructure, statistical modeling, multi-attribute optimization through derringer’s desirability function, and life cycle assessment. *Journal of Cleaner Production*, 307, 127107. <https://doi.org/10.1016/j.jclepro.2021.127107> (Impact Factor: 10.7).
24. Anurag, Kumar, R.\*, Goyal, S., & Srivastava, A. (2021). A comprehensive study on the influence of supplementary cementitious materials on physico-mechanical, microstructural and durability properties of low carbon cement composites. *Powder Technology*, 394, 645-668. <https://doi.org/10.1016/j.powtec.2021.08.081> (Impact Factor: 5.5).
25. Kumar, R.\* (2020). Modified mix design and statistical modelling of lightweight concrete with high volume micro fines waste additive via the box-behnken design approach. *Cement and Concrete Composites*, 113, 103706. <https://doi.org/10.1016/j.cemconcomp.2020.103706>. (Impact Factor: 14.4/Q1) (**Best Research Paper Award; by Jury**)
26. Hou, P. \*, Guo, Z., Li, Q., Zhang, X., Liu, J., Yang, S., Cheng, X., Kumar, R., Srinivasaraonaik, B., & Singh, L. (2019). Comparison study on the sulfate attack resistivity of cement-based materials modified

- with nanoSiO<sub>2</sub> and normal SCMs: Pore structure and phase composition. *Construction and Building Materials*, 228, 116764.. <https://doi.org/10.1016/j.conbuildmat.2019.116764> (Impact Factor: 8.9/Q1).
27. **Kumar, R.**, Lakhani, R.\* , & Tomar, P. (2018). A simple novel mix design method and properties assessment of foamed concretes with limestone slurry waste. *Journal of Cleaner Production*, 171, 1650-1663. <https://doi.org/10.1016/j.jclepro.2017.10.073> (Impact Factor: 10.7/Q1).
  28. Tomar, P., Lakhani, R.\* , Chhibber, V. K., & **Kumar, R.** (2018). Macro-defect free cements: A future oriented polymer composite materials for construction industries. *Composite Interfaces*, 25(5-7), 607-627. <https://doi.org/10.1080/09276440.2018.1439637> (Impact Factor: 2.7).

**(b) International Peer-reviewed (ESCI/WoS Indexed): 03 Nos.**

1. Shweta Singh, Kanak Mishra, **Rajesh Kumar**, Nagesh Babu Balam, Srinivasarao Naik B\* (2026). Thermophysical & Microstructure Behaviour of Microencapsulated Phase Change Materials Incorporated Flyash Brick for Thermal Energy Storage in Building Application. *Energy Storage*, 8(4), Wiley. <https://doi.org/10.1002/est2.70424>. (Impact Factor: 4.0)
2. K Mishra, S Singh, R Agarwal, NB Balam, **R Kumar**, S Naik B\* (2025). Silica-Based Microencapsulation of Phase Change Materials for Efficient Thermal Energy Storage: A Comprehensive Review. *Energy Storage*, Wiley, Volume 7, Issue 4, e70189. <https://doi.org/10.1002/est2.70189>. (Impact Factor: 4.0)
3. Kushwah, S., Singh, S., Agarwal, R., Nighot, N. S., **Kumar, R.**, Athar, H., & Naik B, S.\* (2024). Mixture of biochar as a green additive in cement-based materials for carbon dioxide sequestration. *Journal of Materials Science: Materials in Engineering*, 19(1). <https://doi.org/10.1186/s40712-024-00170-y>. (Impact Factor: 4.3)

**(c) International Peer-reviewed (Scopus): 35 Nos.**

1. **R Kumar\***, NS Nighot, S. Khan (2026). Development and Evaluation of Cost-Effective Lightweight Aggregate Concrete Tiles for Energy-Efficient Buildings. *Architecture and Engineering*. Scopus Indexed.
2. Singh, J., Nighot, N. S., **Kumar, R.\*** (2026). Effect of Calcined Red Mud on Pozzolanic Reactivity and Physico-mechanical Properties of Composite Cement Mortar. *Proceedings of the International Conference on Condition Assessment, Rehabilitation & Retrofitting of Structures (CARRS)*.
3. Amit Yadav, **Rajesh Kumar\***, Charu Mehta, Nikhil Sanjay Nighot, B.Srinivasaraonaik (2026). Studies on Calcium Sulfoaluminate-Belite (CSAB) Cement using Industrial Wastes. *Journal of Building Material Science*. *Journal of Building Material Science*, 1-11. <https://doi.org/10.30564/jbms.v8i1.9136>
4. **Rajesh Kumar\***, Shashank Bishnoi, N Gopalakrishnan (2025). Effects of Raw Materials, Sintering Conditions, and Stabilizers on High Volume M3-Alite Synthesis. *Journal of Building Material Science*. 7(2), 47–57. <https://doi.org/10.30564/jbms.v7i2.9181>
5. Aditya Milmile, **Rajesh Kumar\*** and Banti A. Gedam (2025). Investigation of mechanical properties of high-performance steel and polypropylene fiber reinforced concrete. *Journal of Building Material Science*, 16-28. <https://doi.org/10.30564/jbms.v7i4.9137>
6. Yadav, A., **Kumar, R.\***, Yadav, A., Nighot, N. S., & Prajapati, A. (2025). Effect of crystalline admixture on the mechanical and durability properties of M40 grade of concrete. *Journal of Building Material Science*, 7(3), 49-61. <https://doi.org/10.30564/jbms.v7i3.9134>
7. S Mukherjee and **R Kumar\*** (2025). “*Optimization of Statistical Models and Rheological Characterization of Lightweight Self-Compacting Concrete Composites Incorporating Limestone Waste and Metakaolin*“, Springer. (Scopus with doi)
8. Mukherjee, S., & **Kumar, R.\*** (2025). Statistical optimization of fresh and mechanical properties for limestone calcined clay cement (LC3) incorporated lightweight self compacting concrete using central

composite design. Springer Proceedings in Materials, 329-345. [https://doi.org/10.1007/978-981-96-0746-4\\_23](https://doi.org/10.1007/978-981-96-0746-4_23)

9. Sanjay Nighot, N., **Kumar, R.\***, & Naik, B. S. (2024). Effects of Bogues compounds and particle size distribution on the physico-mechanical and Microstructural properties of Portland cement system. *E3S Web of Conferences*, 596, 01004. <https://doi.org/10.1051/e3sconf/202459601004>
10. Singh, B. K., **Kumar, R.\***, & Sengupta, S. (2024). Industrial production of fly ash and sand-based geopolymer bricks using different molarity of NaOH solution, and assessment of their mechanical and durability properties. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 48(1), 61-79. <https://doi.org/10.1007/s40996-023-01154-2> (Impact Factor: 1.7/Q2/2023/ Ref. JCR 2024).
11. Kumar, P., **Kumar, R.\***, Surabhi, Rahman, M. R., & Khan, S. (2024). Development of sustainable precast concrete sandwich wall panels using artificial aggregates and mineral admixture. *E3S Web of Conferences*, 596, 01006. <https://doi.org/10.1051/e3sconf/202459601006>
12. Thakur, A., Agarwal, R., **Kumar, R.\***, Singh, S., Athar, H., Naik Banavath, S.\*, Sharma, M., & Rai, D. (2024). Enhancement of concrete performance and sustainability through partial cement replacement with Biochar: An experimental study. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*. <https://doi.org/10.1007/s40996-024-01661-w>. (Impact Factor: 1.7/Q2/2023).
13. Yadav, A., **Kumar, R.\***, Khan, S., Pippal, A., & Khan, J. (2024). Size effect in lime-stone calcined clay Cement (LC3) incorporated paver blocks: Mechanical and durability investigation. *E3S Web of Conferences*, 596, 01002. <https://doi.org/10.1051/e3sconf/202459601002>. **(Best Paper Award by Springer-ICCMES 2024 Jury)**
14. Verma, S., Yadav, A., **Kumar, R.\***, Kulkarni, K. S., & Khan, S. (2024). Studies on fly- ash and slag incorporated sustainable AAC composites. *E3S Web of Conferences*, 596, 01016. <https://doi.org/10.1051/e3sconf/202459601016>
15. Kumari, K., **Kumar, R.\***, Kulkarni, K. S., Pippal, A., & Khan, J. (2024). Studies on thermo-mechanical and microstructural properties of non-autoclaved aerated concrete. *E3S Web of Conferences*, 596, 01001. <https://doi.org/10.1051/e3sconf/202459601001>
16. Verma, P., **Kumar, R.\***, Mukherjee, S., & Sharma, M. (2024). Rheological and mechanical properties of self-compacting concrete with partial replacement of marble slurry and fly ash. *Lecture Notes in Civil Engineering*, 35-46. Springer. [https://doi.org/10.1007/978-981-97-4844-0\\_4](https://doi.org/10.1007/978-981-97-4844-0_4)
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2. Ishan Bhandari, **Rajesh Kumar\***, A Sofi, and Abhishek Srivastava (2022). “Statistical optimization of HPMC-PCE based Limestone- Calcined Clay- Silica fume blended Cement: Fresh and Hardened Properties, and Microstructural Investigation”, International Conference on Calcined Clay for Sustainable Concrete, SwissTech Convention Center, EPFL, Lausanne, Switzerland, 5<sup>th</sup>– 7<sup>th</sup> July 2022. (Proceedings will be published online). [https://ccsc.epfl.ch/wp-content/uploads/2022/06/CCSC-2022\\_conference-programme\\_tentative.pdf](https://ccsc.epfl.ch/wp-content/uploads/2022/06/CCSC-2022_conference-programme_tentative.pdf)
3. **Rajesh Kumar\***, Abhishek Srivastava, Priyanka Tomar and Rajni Lakhani (2021). “Effect of Hydroxypropyl methylcellulose polymer modification on properties of low carbon cementitious composites”, Abstract Proceedings of 3rd International Congress on Materials & Structural Stability, Rabat, Morocco, p2-309, pp. 134-135, 24-26 November 2021. <https://www.congresscmss21.asmatec.org/>
4. **Rajesh Kumar\***, Rajni Lakhani, Priyanka Tomar and Shahnawaz Khan (2015). “Potential Use of Kota Stone Waste in the Production of Value-Added Products”, Proceeding of 26th Annual General Meeting of Materials Research Society of India 2015, Jaipur, Feb. 9-11, 2015 (Accepted paper ID: MEE –08).

**(f) National Conference Paper: 05 Nos.**

1. **Rajesh Kumar\***, Rajni Lakhani, Abhilasha, Neha Rawat and Shahnawaz Khan (2023). “Microstructural and Thermo- mechanical Properties of Energy- Efficient Structural Lightweight Concrete with LECA, Fly ash and Marble slurry”, Proceeding on Innovative and Sustainable Materials & Technologies (ISCMT-2023), Indian Habitat Centre- New Delhi, January 06th, 2023.
2. **Rajesh Kumar** and Rajni Lakhani (2019). “Cement Concrete Interlocking Paver Blocks using Kotastone and Marble slurry”, Advances in Building-Road Materials and Construction Engineering (ABRMCE-2019), MNIT Jaipur, March 25th & 26th, 2019.
3. Rajni Lakhani and **Rajesh Kumar** (2018). “Strategies for the Restoration of Heritage Buildings: Material Issues”, Technical Training Program, BHAGVAN- A SEARCH, CSIR-CBRI, Roorkee, Oct. 3-4, 2018.
4. Priyanka Tomar, Rajni Lakhani and **Rajesh Kumar** (2018). “Micro-structure and Thermal properties of polymer modified fly ash blended cement pastes for Repair applications“, A National Seminar on Emerging Building Materials and Construction Technologies”, India Habitat Centre, Delhi, Feb. 22-23, 2018.
5. Rajni Lakhani and **Rajesh Kumar** (2017). “Sustainable Use of Kota Stone Waste”, Gainful Utilization of Marble Slurry and Other Stone Wastes, MNIT Jaipur, India, July13, 2017, pp.191-192.

**9 Technology Transfer: 08 Nos.**

<b>List of Designs, Products, Process, Project Implementation</b>	<b>Place where used</b>	<b>Year of Implementation</b>	<b>Benefit achieved</b>
<b>Building Products using Kota Stone Waste</b>	Rajasthan State Pollution Control Board, Jaipur, Rajasthan, India	2018	India's first start-up plant for Low-grade limestone waste management; recognized by Central and State government (under Start-up Policy- 2017, Waste to Wealth and Swachh Bharat Abhiyan) was inaugurated on 16.06.2018. The plant has the capacity to manufacture 8,000 flooring tiles, 3,500 rough pavers and 5,000 bricks daily from the slurry. It can use up to 100 Ton Low-grade limestone waste per day. Till now, ' <b>Pashan Welfare Foundation, Kota</b> ' has earned approx. 30 to 35 % profit on the developed products.
<b>"Flooring- Wall Tiles, Bricks, &amp; Paver Blocks Using Marble Waste"</b> to M/s. Marble Plaza, New Delhi	Udaipur, India	2023	Desirable physico-mechanical attributes of non-modular bricks, tiles, and paver blocks—including compressive strength, efflorescence, water absorption, flexural strength, and wear resistance—have been assessed. Based on these evaluations, the mix formulation has been refined to cater to various brick classes and both tile grades: general purpose and heavy-duty flooring. Additionally, paver blocks have been successfully produced across multiple strength grades, namely M30, M35, M40, and M50. Profitability as compared to market products: ~35-50% ; on Annual turnover
<b>"Low-Carbon Cement Concrete Composites using Sustainable Chemical Admixture"</b> to M/s. Litagg Industries Pvt Ltd, Gujarat, India	Vasna Chacharavadi, Gujarat, India	2024	This technology is being used in the construction of residential and commercial buildings. Its enhanced durability and mechanical properties make it suitable for structural elements like beams, and walls. This technology aligns with sustainable development goals. It can be used in projects aiming for green building certifications or those that prioritize environmental sustainability, such as eco-friendly housing developments and sustainable urban planning.
<b>"Innovative Cool Roof"</b> to	Vasna	2024	Lightweight aggregates typically have lower

M/s. Litagg Industries Pvt Ltd, Gujarat, India  (With Dr. KS Kulkarni)	Chacharavadi, Gujarat, India		thermal conductivity compared to traditional roofing materials like concrete. This means they absorb less heat from sunlight, reducing the overall heat gain in the building. The nodular shape of the aggregates can create air gaps within the roofing material. Air is a good insulator, so these gaps can further impede heat transfer from the outside environment to the interior.
<b>“Specific Strength Attributed Self-Compacting Load Bearing Lightweight Roof/Floor Screed Using Sintered Lightweight Aggregates”</b> to M/s. Pidilite Industries Limited, Mumbai, India	Mumbai, India	2025	The entitled technology delivers a lighter, self-compacting, structurally adequate screed that reduces dead load, CO <sub>2</sub> emissions, and overall construction cost while improving workability and thermal performance of roof/floor systems.
<b>“Self-compacting Aircrete Composite (SAC) Roof/ Floor Screed for Thermal Insulation (SAC Screed)”</b> to M/s. Pidilite Industries Limited, Mumbai, India	Mumbai, India	2025	SAC screed helps buildings become more energy-efficient and easier to construct, while also supporting green construction goals through lower material intensity and waste utilization. It is especially useful where both insulation and reduction of self-weight are important, such as roof and floor screed applications.
<b>“Process know how for preparation of Biomass Derived Materials”</b> to M/s Mathesis Labs Technologies Private Limited, Gurugram, Haryana <i>(with Dr. Srinivasa, Dr. Hemlata)</i>	Gurugram, Haryana	2026	Bio-based materials from renewable biological sources provide a sustainable alternative to fossil-fuel-derived plastics while boosting a circular economy
<b>“High Strength Valorized Paver Block using Granite Waste”</b> to M/s Western Zone Granite Association, Pali Marwar, Rajasthan	Pali Marwar, Rajasthan	2026	Technology achieves significant performance, economic, and environmental benefits. It produces M30–M50 grade paver blocks with compressive and flexural strength comparable to or better than conventional paver blocks, making them suitable for walkways, parking areas, and industrial pavements.



**Low-Carbon Cement Concrete Composites using Sustainable Chemical Admixtures**



**Flooring- Wall Tiles, Bricks, & Paver Blocks Using Marble Waste**



**Innovative Cool Roof**



**Specific Strength Attributed Self-Compacting Load Bearing Lightweight Roof/Floor Screed Using Sintered Lightweight Aggregates**



**Self-compacting Aircrete Composite (SAC) Roof/ Floor Screed for Thermal Insulation (SAC Screed)**



**Process know how for preparation of Biomass Derived Materials**



**High Strength Valorized Paver Block using Granite Waste**

### Transferred Technologies

#### 10. Patent: 03 Nos.

Item	Patent/Copyright No	Year	Granted by
Eco-cementitious composite cement using clinker from low-graded industrial waste materials, and calcined clay	0103NF2026	June' 2026	Awaited
Low-energy calcium sulfoaluminate-belite cement: a sustainable approach using industrial by-products	202511078436	Date of Filing: 18.08.2025	Awaited
An improved process of making cement concrete interlocking paver blocks using Kotastone slurry	202211060661	Date of Filing: 21.10.2022	Awaited

#### 11. Contribution in the area of Sustainable Development:

Brief about contribution	Place where used	Year of implementation / use	Benefit achieved (if any)
The Field study examined the potential use of different types of <b>agriculture and industrial wastes, i.e., wheat straw, crumb rubber, and bagasse fiber</b> in the development of the engineered mudphuska tiles. For demo testing, twomodel houses ( $L \times B \times H = 430 \times 510 \times 330$ mm) were constructed (one conventional house and other mud phuska roof tile house). <b>One M.Tech Student (2016) has completed his thesis in the same research area.</b>	Roorkee, Haridwar, India	2017	The mix proportion with ratio of crumb rubber and wheat straw in soil and cement mix up to 7.5% has achieved the desired value of compressive strength(2.65 MPa), flexural strength (1.85 MPa), and k value(0.25 W/m K). The waste incorporated mud phuska roof tile house was cooler as compare to conventional model house and have average temperature difference was up to 5–6 °C.

<p>A Technology entitled, “<b>Building Products using Kota Stone Waste</b>” is being successfully implemented in Kota, Rajasthan on 16.06.2018. It is India's first start-up plant for Kotastone waste management; recognized by Central and State government (under Start-up Policy-2017, Waste to Wealth and Swachh Bharat Abhiyan).</p>	<p>Kota, Rajasthan, India</p>	<p>2018</p>	<p>As per the officials of ‘Pashan welfare foundation, Kota’; since the inception of plant in Kota; total sales of interlocking paver blocks, tiles and bricks were 7,24,685 in numbers (in 9.5 months). Till now, ‘Pashan Welfare Foundation, Kota’ has earned approx. 30 to 35 % profit on the developed products.</p>
<p>In Indo-US project entitled, “<b>Improving Building Energy Efficiency (Task: Structural Interlocking Masonry Blocks using Industrial / Agro-Industrial Wastes)</b>”; lightweight roofing tiles and structural interlocking masonry blocks were being made using LECA, OPC and latent/ active hydraulic waste. The mechanical and durability properties of structural lightweight concrete containing Class F Fly ash and Silica fume was investigated. The substitution of Portland cement with high volume of Class F Fly ash further reduced the density of lightweight concrete by increasing the strength.</p>	<p>Roorkee, Haridwar, India</p>	<p>2020</p>	<p>The compressive and flexural strength of the developed LWAC blocks was in the range of 16.7–23.9 MPa and 2.8–3.4 MPa, respectively. Thermal conductivity of the lightweight aggregate concrete specimens were found in-between 0.23 and 0.30 W/m K. From the analysis, it was inferred that the LECA concrete shows good strength at lower density, lower thermal conductivity, and lower drying shrinkage that makes it a suitable material for building constructions.</p>
<p>In the project entitled, “<b>Development of low energy- low carbon ECO cementitious binders via synergistic use of low graded industrial wastes for sustainable development</b>”, low graded industrial wastes are being used as the replacement of the conventional/traditional raw materials used in OPC/ Calcium sulfoaluminate– belite (CSA-B) cement production.</p> <p><b>Three M.Tech Students (2021-23) have completed their thesis in the same research area.</b></p>	<p>Roorkee, Haridwar, India</p>	<p>2023</p>	<p>In comparison with Portland cement, energy savings can be as high as 25 %, with limestone reductions of 60 % together with reductions in CO<sub>2</sub> emissions of around 25-30%. Therefore, the two major advantages to use CSAB cement will be:</p> <p><i>i. Reduction of carbon footprints by 30% (minimum)</i>  <i>Cost minimization about 20-25% relative to OPC</i></p>

## 12. Technical Awards: 15 Nos.

Name of Award	Awarded by	Details	Year	Type
Best Technology Award - 2017	Director, CSIR- CBRI along with Jury on CBRI Foundation Day	Technology for <b>"Building Products using Kota Stone Waste"</b>	2018	National
Outstanding Contribution as Reviewer	Elsevier	Contribution made to the Quality of the Journal of Cleaner Production, Elsevier	2020	International
Best Research Paper Award-2021	Springer along with International Conference on Structures, Material and Construction- 2021	Best Research Paper on <b>"Cement stabilized mud blocks admixed with bagasse fibre, wheat straw and crumb rubber: Physico-mechanical and thermal investigation"</b>	2021	International
Excellence Award for Best Research Paper -2021	Springer along with 11th IconSWM-CE & IPLA Global Forum 2021	Best Research Paper on <b>"Experimental investigation on the effect of high volume micro fines on mechanical, seismic resistance and thermal properties of Aircrete"</b> (Author: Rajesh Kumar*)	2021	International
Best Research Paper Award -2021	Director, CSIR-CBRI along with Jury on CBRI Foundation Day	Best Research Publication* <b>"Modified mix design and statistical modelling of lightweight concrete with high volume micro fines waste additive via the Box-Behnken design approach"</b> <a href="https://doi.org/10.1016/j.cemconcomp.2020.103706">https://doi.org/10.1016/j.cemconcomp.2020.103706</a>	2022	National
Young Engineers Award: 2022-23	The Institution of Engineers (India), Govt. of India	Contributions in Engineering Research (Civil Engineering). Website- <a href="https://www.ieindia.org/webui/IEI-Activities.aspx#prizes-awards">https://www.ieindia.org/webui/IEI-Activities.aspx#prizes-awards</a>	2022	National
Best Research Paper Award	Elsevier along with International Conference on Construction Materials and Structures- 2022	Best Research Paper on <b>"Physico - mechanical and thermal characteristics of novel lightweight mud composites for wall - roof treatment"</b>	2022	International
Best Research Paper Award -2023	Director, CSIR-CBRI along with Jury on CBRI Foundation Day	Best Research Publication: <a href="https://doi.org/10.1016/j.envdev.2023.100910">https://doi.org/10.1016/j.envdev.2023.100910</a>	2023	National
Best Research Paper Award	American Chemical Society (ACS) along with International Conference on "Advances in Chemical and Applied	Best Research Paper on "Synthesis of Eco-Cement Clinker using Low Graded Industrial Waste" (Authors: Rajesh Kumar* )	2024	International

	Sciences for Sustainable Development”- 2024			
Outstanding Research Paper in Civil Engineering	Special Jury Award, part of 3rd- CE&CR Annual Awards (https://www.cecr.in/cecr-awards-2024).	Best Research Paper: <a href="https://doi.org/10.1016/j.envdev.2023.100910">https://doi.org/10.1016/j.envdev.2023.100910</a>	2024	National
Achievement Award for Scientist-2024	Construction Industry Development Council (CIDC) established by Planning Commission (Now NITI Aayog), Govt. of India	Contributions in Engineering Research (Civil Engineering). <a href="https://www.cidc.in/vishwakarma2nd-1.html">https://www.cidc.in/vishwakarma2nd-1.html</a>	2024	National
Best Research Paper Award-2024	An International Conference on Civil, Materials and Environment for Sustainability- 2024	Best Research Paper on "Size Effect in Limestone Calcined Clay Cement (LC3) incorporated Paver blocks: Mechanical and Durability Investigation" (Authors: Amit Yadav, Rajesh Kumar*, Shahnavaz Khan, Ashish Pippal, Jeeshan Khan)	2024	International
Best Research Paper Award-2025	RILEM in association with International Conference on Condition Assessment, Rehabilitation & Retrofitting of Structures (CARRS), IIT- Roorkee	Best Research Paper on "Effect of Calcined Red Mud on Pozzolanic Reactivity and Physico-mechanical Properties of Composite Cement Mortar" (Authors: J. Singh, N.S. Nighot, Rajesh Kumar*)	2025	International
Best Research Paper Certificate-2025	Director, CSIR-CBRI along with Jury on CBRI Foundation Day	Best Research Publication: <a href="https://doi.org/10.1016/j.dibe.2025.100601">https://doi.org/10.1016/j.dibe.2025.100601</a>	2026	National
ISDA Infracon National Awards (IINA) - 2026	Infrastructure Skill Development Academy (ISDA)	Contributions in Engineering Research (Civil Engineering)	2026	National

**By Students:** 04 Nos.

Sr. No.	Student Name	Course/ Branch	Title	Completion year	Name of Awards
1.	Mr. Nikhil Sanjay Nighot	Ph.D.- Engineering Science	Microstructural & Hydration Kinetics Studies of Low Energy	Pursuing	<b>“Young Scientist Award”</b> at the 20th Uttarakhand State

			Eco-Cement with Low-Graded Industrial Wastes		Science Congress (USSTC-2025) in Dehradun, India
2.	Mr. Anurag	M.Tech-Structural Engineering	Optimization of low-graded limestone slurry to develop low clinker cementitious binders using Response surface methodology	2021	Recipient of " <b>Best Master Thesis Award: 2023</b> " by <b>Indian Association of Structural Engineers on 10.11.2024</b>
3.	Mr. Ishan Bhandari	M.Tech-Structural Engineering	Statistical Optimization of PCE-HPMC Based Limestone – Calcined Clay – Silica Fume Cement: Fresh and Hardened Properties	2022	Recipient of " <b>Indian Concrete Institute (ICI)– Ultratech Outstanding Master Thesis Award: 2022</b> "
4.	Mr. Dipendra Kumar Das	M.Tech-Structural Engineering	Influence of Fly Ash and Limestone Slurry on Physico-mechanical and Microstructural Properties of Pure Blended OPC Phases at Different Curing Temperatures	2023	Recipient of " <b>Indian Concrete Institute (ICI)– Ultratech Outstanding Master Thesis Award: 2023</b> "

### 13. Membership of Professional Societies:

Name of the Society	Address	Membership Category & Number
The International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM)	Champs sur Marne 77447 Marne laVallée Cedex 2	Young Member & 41009
American Concrete Institute (ACI)	ACI Resource Center – Elk Grove Village, IL 60007 USA	Individual & 02112222
Indian Concrete Institute (ICI)	Indian Concrete Institute, No.201, First Floor, Jawaharlal Nehru Road, Koyambedu, Chennai - 600107	Life Member (LM) &LM-13373
The Institution of Engineers (India)	8 Gokhale Road, Kolkata, India	Life- Member (MIE) &M-1748240
American Society of Civil Engineers (USA)	1801 Alexander Bell Drive, Reston, VA20191	Member & 012293040
ASTM International	West Conshohocken, PA19428-2959, USA	Member & 2368739
The Indian Science Congress Association (ISCA)	Indian Science Congress Association 14, Dr. Biresh Guha Street, Kolkata-700 017	Life- Member & L-42632

- Reviewer for Journals viz.- *Journal of Materials in Civil Engineering (ASCE), Computers & Concrete, Waste Management, Journal of Cleaner Production, Advances in Cement Research, Construction & Building Materials, Resources, Conservation & Recycling etc.*

#### 14. Projects & responsibilities:

- **External Ministry Projects:**

Title	Duration	Role	Funding Agency
Structural Quality Assessment of Bus Terminal and Shopping Complex AT Motor Nagar, Kotdwar	2025-26	Co-PI	Nagar Nigam-Kotdwar
Development of low energy- low carbon ECO cementitious binders via synergistic use of low graded industrial wastes for sustainable development	2020-24	PI	MoEF&CC
Development of performance improved Precast concrete sandwich/composite materials using solid wastes	2020-24	PI	MoEF&CC
Development of Structural Interlocking Masonry Blocks using Industrial / Agro Industrial Wastes	2017-21	Co-PI Of Task4.4	Indo-US

- **CSIR Projects:**

Title	Duration	Role	Category
CSIR MISSION MODE PROJECT “SMART VILLAGE”	2025-28	Technology Deployer	CSIR- Mission Mode Project
Development of light weight glass foam utilizing waste glasses for insulation and construction and application	2023-26	Co-PI	CSIR-Mission Mode Project/ HCP
Utilization of marble waste to develop cost-effective sustainable building products	2020-22	Co-PI	FTT (2nd Tranche)
Development of compatible repair materials for stone masonry in heritage structures (Task 6B)	2018-20	Co-PI	Mission mode
Development of Flooring/ Wall Tiles-Paver blocks & Lightweight blocks using Kota stone waste	2016-18	Co-PI	FTT (1st Tranche)
Development of Engineered Lightweight Mud-Phuska Composite using Industrial-cum-Agricultural Wastes	2016-17	PI	CSIR-800

- **Industry sponsored:**

Title	Duration	Agency	Role
Comprehensive Investigation of Floor Tile Staining and Deterioration at JPNI Airport, Patna, with Root Cause Analysis	2026-27	Airports Authority of India (AAI), New Delhi	PI

Experimental Evaluation of Integral Crystalline Admixture for Durability and Safety of Structural Concrete	2026-27	M/s. G R Infraprojects Limited, Haryana, India	PI
Studies of PU Foam Adhesive Material For Benchmarking The Mechanical Performance For Structural Applications	2025-26	M/s. Concrete Works Construction Chemicals Pvt. Ltd., India	PI
Comprehensive Assessment of Crystalline Waterproofing Admixtures for Sustainable and Long-Lasting Concrete Infrastructure	2025-27	M/s. Penetron India Private Limited, India	PI
To study the effect of Crystalline Admixture on the Physico-Mechanical, Microstructural, and Durability Properties of Concrete	2025-27	M/s. Pidilite Industries Limited, Mumbai, India	PI
Evaluation of PUF Panel (Polyurethane Foam) Properties	2025-26	M/s. Aqua Puf Panels & Heating System, India	PI
Diagonal Shear Behavior of AAC wall made using PU Foam Mortar	2025	M/s. Concrete Works Construction Chemicals Private Limited, India	Co-PI
Performance Evaluation of Polyisocenurate (PIR) Rigid Foam Panels	2025-26	M/s. ACE Builders & Engineers (ACE Prefab), India	PI
Development of Low carbon composite cement using performance improved thermo-mechanical activated pozzolanic red mud for sustainable development	2024-25	M/s. Vedanta Ltd., India	PI
To study the effect of Crystalline Admixture on the Physico-Mechanical, Microstructural, and Durability Properties of Concrete	2025-27	M/s. Pidilite Industries Limited, Mumbai, India	PI
Performance Evaluation of Sandwich Rigid Polyurethane Insulated Panel	2024-25	M/s. Suchi Foam Pvt Ltd, India	PI
Evaluation of PUF Panel (Polyurethane Foam) Properties	2025-26	M/s. Aqua Puf Panels & Heating System, India	PI
Performance Evaluation of Polyisocenurate (PIR) Rigid Foam Panels	2025-26	M/s. ACE Builders & Engineers (ACE Prefab), India	PI
Performance Evaluation of PIR Panel	2025	M/s. Lloyd Insulation India Ltd	PI
Performance Evaluation of Polyurethane Sandwich Panel	2024-25	M/s. Kingspan Jindal Pvt Ltd, Gurugram	PI
Performance Evaluation of Polyisocyanurate (PIR) Foams for Thermal Insulation	2024-25	M/s. BNAL Prefabs Pvt Ltd, Chandigarh, India	PI
Performance Evaluation of IP Net Paints to be used in Southern Railways	2023-24	M/s. A.R. ENTERPRISES, Tamil Nadu, India	PI
Assessment of Physico-Mechanical, Microstructural & Durability Parameters of Concretes Incorporating Crystalline Durability Enhancing Admixture	2023-24	M/s. Apple Chemie India Pvt Ltd., India	PI
Performance evaluation of crystalline waterproofing	2023	CPWD, Faridabad, India	

admixture on the mechanical properties of concrete			PI
Studies on Mechanical and Durability Properties of Normal and High Strength Concrete with Graphene	2022-23	M/s. Reliance Industries Limited, India	Co-PI
To Improve the technology of expanded clay aggregate-Thermal insulated mortar	2019-20	M/s. Rivashaa Eco Design Solutions P. Ltd., Ahmedabad, Gujarat, India	Co-PI

### 15. Technology Documentary: 11 Nos.

1. Transforming Granite Slurry into Sustainable Materials (2026). <https://www.youtube.com/watch?v=OzRB6omVtYE>
2. Self Compacting Load Bearing Lightweight Roof/ Floor Screed (2026). <https://www.youtube.com/watch?v=87b1Lj7XyBM&t=4s>
3. Marble Waste to Market-Ready Green Building Products (2026). <https://www.youtube.com/watch?v=VByHJIO-eBQ>
4. Self-compacting Aircrete Composite (SAC) Roof/Floor Screed (2025). <https://www.youtube.com/watch?v=F4-tmcT06W4>
5. Low-Carbon Cement Concrete Composites Using Sustainable Chemical Admixtures (2025). <https://www.youtube.com/watch?v=JrNz0elipU8>
6. Building Products Using Kota Stone Waste – A Sustainable Innovation by CSIR-CBRI (2025). <https://www.youtube.com/watch?v=ikVqNgR1hRw>
7. Innovative Cool Roof Technology for a Cooler, Greener Future (2025). <https://www.youtube.com/watch?v=4GbS1FcF0hc>
8. Eco Cement Clinker using Low Graded Industrial Waste (2023). (URL: [https://www.youtube.com/watch?v=y3Iezkf9Ihk&ab\\_channel=CSIR-CBRI%28BhavanTarang%29](https://www.youtube.com/watch?v=y3Iezkf9Ihk&ab_channel=CSIR-CBRI%28BhavanTarang%29))
9. Building Products using Stone Wastes (2023). (URL: [https://www.youtube.com/watch?v=uINarOHZBog&ab\\_channel=CSIR-CBRI%28BhavanTarang%29](https://www.youtube.com/watch?v=uINarOHZBog&ab_channel=CSIR-CBRI%28BhavanTarang%29))
10. Value-added sustainable Building Materials using Kota Stone Waste (2019). Prepared by Agnii\_GOI, Delhi. (URL: <https://www.youtube.com/watch?v=tu40JXa4jTY>)
11. Building Materials from Kota Stone Waste (2018). (URL: <https://www.youtube.com/watch?v=gcYo5RyH7jw&t=145s>)

Date: 29.06.2026

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