

## Dr. Payal Bakshi

Name	Dr. Payal Bakshi
Date of Birth	11.03.1985
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Present Designation	CSIR Research Associate
Division	Building Material & Environmental Sustainability (BMES)



### Educational Attainments

Degree / Diploma	Main Subject	University/Institution with Distinction	Country	Year of Passing
B.E.	Civil Engineering	RGPV, Bhopal	India	2006
M.E.	Transportation Engineering	RGPV, Bhopal	India	2013
PhD	Engineering	AcSIR, Ghaziabad	India	2023

### Specialization

a) Main Area of Specialization	Civil Engineering
b) Sub-area of Specialization	Life cycle assessment, polymer composite, industrial utilization, physicochemical characterization of waste materials, mechanical and physical characterization of composite materials, weathering studies

### Academic Profiles

- [Google Scholar](#)
- [LinkedIn](#)

### Publications

#### International/National Journal papers:

1. **P. Bakshi**, A. Pappu, D.K. Bharti, B. Parmar, R. Patidar, A.K. Srivastava, “*Life Cycle Assessment of Calcium-Rich Industrial Waste Reinforced Polypropylene and Low-Density Polyethylene Composites Using the Cradle-to-Gate Approach*”, ACS Sustainable Chemistry & Engineering 10(41) (2022) 13710-13721. DOI: <http://doi.org/10.1021/acssuschemeng.2c03751>
2. **P. Bakshi**, A. Pappu, D.K. Bharti, “*Transformation of flue gas desulfurization (FGD) gypsum to  $\beta$ -CaSO<sub>4</sub>·0.5H<sub>2</sub>O whiskers using facile water treatment*”, Materials Letters 308 (2022) 131177. DOI: <https://doi.org/10.1016/j.matlet.2021.131177>

3. **P. Bakshi**, A. Pappu, M.K. Gupta, “A Review on Calcium Rich Industrial Wastes-A Sustainable Source of Raw Materials in India for Civil Infrastructure: Opportunities and Challenges to Bond Circular Economy”, *Journal of Material Cycles and Waste Management* 24(1) (2022) 49-62. DOI: <http://doi.org/10.1007/s10163-021-01295-4>
4. **P. Bakshi**, A. Pappu, M.K. Gupta, A. K. Srivastava, “Thermal power plant Flue Gas Desulfurization (FGD) gypsum waste particulates reinforced injection molded flexible composites”, *Journal of Scientific and Industrial Research*, 80(7) (2021) 612-616. ISSN: 0975-1084 (Online); 0022-4456 (Print)
5. **P. Bakshi**, A. Pappu, D.K. Bharti, R. Patidar, “Accelerated weathering performance of injection moulded PP and LDPE composites reinforced with calcium rich waste resources”, *Polymer Degradation and Stability* 192 (2021) 109694. DOI: <https://doi.org/10.1016/j.polymdegradstab.2021.109694>
6. **P. Bakshi**, A. Pappu, D.K. Bharti, R. Patidar, M.K. Gupta, “Sustainable Development of Particulate Reinforced Composites by Recycling Marble Waste for Advanced Construction Applications: Ultra-low Water Absorption, Remarkable Thermal and Mechanical Behaviour”, *Waste and Biomass Valorization* 12(1) (2021) 6449-6464. DOI: <http://doi.org/10.1007/s12649-021-01473-3>
7. **P. Bakshi**, A. Pappu, M.K. Gupta, “Flue Gas Desulphurization (FGD) Gypsum Waste – Recycling Opportunity”, The Institution of Engineers (India): Environmental Engineering Division Board, Annual Technical Volume on "Technologies for Zero Waste in India: Current and Future Challenges", ISBN Number (978-81-952159-4-2) 4 (2021) 68-73.
8. **P. Bakshi**, A. Pappu, R. Patidar, M.K. Gupta, V.K. Thakur, “Transforming Marble Waste into High-Performance, Water-Resistant, and Thermally Insulative Hybrid Polymer Composites for Environmental Sustainability”, *Polymers* 12(8) (2020) 1781. DOI: <http://doi.org/10.3390/polym12081781>
9. I. Abass, M. Raisinghani, **P. Bakshi**, “Utilization of Phosphogypsum as Partial Replacement of Fine Aggregates & Cement in Concrete Pavements”, *International Journal of Technical Innovation in Modern Engineering & Science*, Volume 4, Issue 7, July-2018, Pg. 1077-1088
10. G. Aziz, M. Raisinghani, **P. Bakshi**, “A Study on the utilization of M- Sand (Manufactured Sand) in the Pavements”, *International Journal of Technical Innovation in Modern Engineering & Science*, Volume 4, Issue 6, June-2018, Pg. 34-40
11. **P. Bakshi**, A. Malik, A. S. Parihar, A. Ahamad, “Pervious Concrete”, *International Journal of Scientific Research*, Vol V, Issue IV, April 2016, Pg. 98-103

#### **International/National Conferences:**

1. Poster presented in “One Week One Lab (OWOL)”, Organized by CSIR-AMPRI, Bhopal, 14-18 May, 2023.
2. Poster presented in “Young Scientists’ Conference as a part of India International Science Festival-2019”, Kolkata, Organized by DST and Vijnana Bharati, 5-8 November, 2019.
3. Payal Bakshi, Manoj Kumar Gupta, Asokan Pappu, “Physico-Chemical And Morphological Analysis Of Flue Gas Desulphurization (FGD) Gypsum For Making Composite Materials”, International conference on “Building Energy Demand Reduction in Global South”, Builder ’19, Organized by CSIR-CBRI, Roorkee with IIT Roorkee and IIT Delhi, 13-14 December, 2019.
4. Ishfaq Ul Abass, Ms. Payal Bakshi, “Analysis Of Different Properties Of Concrete In Pavements Using Phosphogypsum”, *International Journal of Engineering Research and Technology*, RTCEC – 2018 Conference Proceedings, A National Conference on Recent Trends in Civil Engineering, 23-24 March 2018, Special Issue 2018, Volume 6, Issue 11, Pg. 1-3
5. Gowhar Aziz, Ms. Payal Bakshi, Rahul Chaudhary, “Comparative Study on Natural Sand and Crushed Stone Sand”, *International Journal of Engineering Research and Technology*, RTCEC – 2018 Conference Proceedings, A National Conference on Recent Trends in Civil Engineering, 23-24 March 2018, Special Issue 2018, Volume 6, Issue 11, Pg. 1-3

- **Scientific Books / Book Chapters:**

1. M. Saxena, P. Asokan, P. Bakshi, “*Sisal Potential for Engineering Applications – An Overview*”, In: Nandan, M. J., Ahirwar, R.S., Navin Chand and Ramakrishnan, N. (eds.), *Sisal Fibre Technologies for Sustainable Rural Employment Generation*, Allied Publishers Pvt. Ltd., New Delhi, 2008, p. 112-154

**Certificate Courses / Training / Webinar (Attended):**

**Certifications:**

1. NPTEL online certification for successfully completing the course *Life Cycle Assessment* on 23<sup>rd</sup> July 2022 by *IITKGP*
2. NPTEL online certification for successfully completing (Exam score 78) the course *Plastic Waste Management* on 6<sup>th</sup> September 2023 by *IITKGP*

**Invited Lectures Delivered**

1. Payal Bakshi, Industrial Waste Recycling in Manufacturing Advanced Composite Materials for Building and Transportation Infrastructure, E-National Conclave on Integrative Researches in Civil Engineering (NCIRCE-2021) organized by The Sage Group, Bhopal on 3<sup>rd</sup> June 2021.
2. Payal Bakshi, Industrial waste reinforced injection moulded composites and their accelerated weathering characteristics, International Conference On Engineering, Social Sciences & Management: Challenges, Issues and Opportunities (ICESM-2022) organized by Sri Balaji College of Engineering and Technology, Jaipur on 21<sup>st</sup> May 2022.

**Awards and Distinctions (Including Fellowships):**

1. Awarded by *Certificate of Honour* in *SRIJAN 2015, Bhopal* for helping students to achieve excellence in the subject CE-402, Concrete Technology (100% Result)
2. Awarded *1<sup>st</sup> Prize* for mentoring students for Paper presentation in *SRIJAN 2015, Bhopal* on *Pervious Concrete*
3. Conferred with *Young Scientist Award* in Civil Engineering for research paper presentation during *31<sup>st</sup> M.P. Young Scientist Congress 2016* held at *M.P. Council of Science & Technology, Bhopal*
4. Received the *Appreciation Certificate for QEEE Jan - Apr 2017* for commitment in implementing QEEE in VIT (E), Jaipur by *IIT Madras*
5. Awarded *Direct CSIR Research Associateship* by CSIR India from May 2024-May 2027.

**Professional Experience:**

**Academics- 7.5 years, Research- 2.70 years**

- **M.Tech. Dissertations guided: 02**

**Services for Scientific Societies**

**Invited Reviewer for the Following SCI Journals:**

1. Environmental Chemistry Letters
2. Journal of Environmental Chemical Engineering
3. Frontiers in Environmental Science
4. Waste and Biomass Valorization
5. KSCE Journal of Civil Engineering
6. Journal of Crystal Growth
7. Materials Letters