

BRIEF CURRICULUM VITAE

Prof. Sandeep Chaudhary

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Academic and Research Qualifications

Ph.D. (2006, Indian Institute of Technology Delhi, India) *,

*Ph.D. Thesis Title: Development of a hybrid analytical-numerical procedure and neural networks for composite structures subjected to service load

M.E. (Structural Engineering) (1999) (Malaviya National Institute of Technology Jaipur, Jaipur, India)

B.E. (Civil) (1996) (MBM Engineering College Jodhpur, Jodhpur, India)

Work Experience

- Professor (HAG), Department of Civil Engineering, IIT Indore (Oct 23, 2024–Cont)
- Professor, Department of Civil Engineering, IIT Indore (Oct 23, 2018-Oct 22, 2024)
- Associate Professor, Department of Civil Engineering, IIT Indore (May 17, 2017-Oct 22, 2018)
- Associate Professor, Department of Civil Engineering, MNIT Jaipur (July 29, 2011-May 16, 2017)
- Post Doc. Research Fellow, Structural System Laboratory, Kunsan National University, South Korea (Aug 16, 2010-July 28, 2011)
- Associate Professor, Department of Civil Engineering, MNIT Jaipur (July 01, 2010-Aug 15, 2010)
- Lecturer/Reader, Department of Structural Engineering, MNIT Jaipur (Oct 31, 1996-June 30, 2010)

Specialization

- Structural Engineering
- Steel Concrete Composite Construction
- Sustainable Construction Practices
- Building Product Engineering
- Waste Upcycling and Management
- Sustainable Rural Housing

Research Credentials

Technology Transfer/ Translational Research:	01/02
Patents (granted/ published/filed/in process):	02/02/01/01
Publications in SCIE/Scopus Indexed Journals:	120
Publications in Conference Proceedings:	76
Books authored/edited:	08
Technical reports:	01
Book/ video chapters:	05
Ph.D. Supervision (completed/ongoing):	15/08

MTech and MSc thesis Awarded/Ongoing:	39/06
Sponsored Research Projects:	42
(PI/Scientific Director/Mentor/Co-PI/Guide)	(13/01/05/02/06)

Courses Taught

Solid Mechanics, Structural Analysis, Finite Element Method, Design of Concrete Structures, Design of steel-concrete composite structures, Prestressed Concrete Design, Sustainable Construction*, Advanced Concrete Technology*, Design Thinking for Rural Application*

*Courses developed and introduced

Awards / Achievements / Recognitions / Fellowships

- Received Best Technology Award 2024 from IIT Indore
- Honorary mention as the second-best teacher of IIT Indore based on the student feedbacks in the last four semesters, on the occasion of Teacher's Day, 2024
- Received Best Research Paper Award 2023 from IIT Indore
- Recognized as a leading scientist in the field of Sustainable Construction by Publons in 2022
- Eminent Engineer Award by The Institution of Engineers (India) during the 37th National Convention in 2022.
- Utkrisht Seva Samman (Excellent Service Award) by The Institution of Engineers (India), Indore and JK cement in 2021.
- Holds the first technology transfer of IIT Indore for waste-upcycled novel bricks
- Offered Research Fellowship by the Hong Kong Polytechnic University for two months in 2017.
- Post-Doctoral Research Fellowship granted by National Research Foundation, S. Korea (2010-2011).
- QIP Fellowship for pursuing Ph.D. at IIT Delhi by Ministry of Human Resources Development, Government of India (2002-2005).
- Merit Scholarship during B.E. (1993-1995).

List of sponsored research projects

As Principal Investigator (25)

01. "Livelihood interventions for Scheduled Caste labourer through "Shramik Vikas" community partnered training programs in Simrol Block, Indore District, Madhya Pradesh State" funded by DST, GOI. (2025-2028). Role: As Principal Investigator
Collaborator: -
02. "Advancing the Industrial Application of Epoxy Bonded Reinforcement" funded by Captain Steel India Limited. (2025-2026). Role: As Principal Investigator
03. "Sustainable Cement Manufacturing: Overcoming Limestone Shortages with Bio Ash" funded by JSW Cement Ltd, Ballari, India. (2025-2026). Role: As Principal Investigator
Collaborator: -
04. "Inspiring the researchers of tomorrow in sustainable concrete construction" funded by SPARC and UKIERI. (2024-2026). Role: As Principal Investigator
Collaborator: University of Plymouth, UK and NIT Warangal, India
05. "Technology Dissemination of Compressed Colored Composite for a wide range of products to support sustainable rural infrastructure" funded by DST, GoI. (2023-2025). Role: As Principal Investigator
Collaborator: TIET Patiala, India

06. "Carbon-neutral technologies for recycling large-tonnage waste from fuel energy with the production of functional geopolymers materials" funded by Government of the Russian Federation. (2022-2024). Role: As Principal Investigator
Collaborator: Platov South-Russian State Polytechnic University (NPI), Russia
07. "A comprehensive rheology based thixotropic fluid flow model for improved control on 3D printing of concrete" funded by SERB, DST, GOI. (2021-2024). Role: As Principal Investigator
Collaborator: -
08. "Safeguarding heritage structures using seismic metamaterials" funded by SPARC, MHRD. (2019-2021). Role: As Principal Investigator
Collaborator: UNIVERSITÉ AIX-MARSEILLE, France and IMPERIAL COLLEGE LONDON, UK
09. "Investigation of cracks in concrete PSC Girder on Bridge no 10 in RAU to TIHI new Broad Gauge line section" funded by Western Railway. (2019). Role: As Principal Investigator
Collaborator: -
10. "Natural-coloured functionally graded rubberised geopolymer system: A cement-less solution for optimised concrete paver manufacturing" funded by DST, GOI. (2018-2020). Role: As Principal Investigator
Collaborator: University of Edinburgh, UK
11. "Investigations for structural safety of Mughal Museum being made by Precast Technique and subsequent technical suggestions" funded by U.P Rajkiya Nirman Nigam Ltd.. (2018-2019). Role: As Principal Investigator
Collaborator: -
12. "Third Party Quality Assurance for Infrastructure of New Campus of IIM Udaipur" funded by CPWD. (2018). Role: As Principal Investigator
Collaborator: -
13. "Sustainable and economical functionally graded rubberized concrete pavements" funded by DST, GOI. (2017-2021). Role: As Principal Investigator
Collaborator: University of Carthage, Tunisia
14. "Vetting of Design and Drawing of 90 meter Arch, 252 meter suspension bridge & 90 meter truss bridge at Rajim, Raipur (C.G.)" funded by AQUATIC Pump Industries, Indore (India). (2017). Role: As Principal Investigator
Collaborator: -
15. "Utilization of plastic waste in concrete: Feasibility studies" funded by DST, GOI. (2016-2019). Role: As Principal Investigator
Collaborator: MNIT Jaipur
16. "Waste utilisation in concrete as aggregate: Asian perspective" funded by Asian Concrete Federation. (2016-2019). Role: As Principal Investigator
Collaborator: Researchers from China, Hong Kong and Thailand
17. "Proof checking of structural design and drawing of bridge at Gambhiri river and ROB at Hindaun Bypass" funded by RSRDC Ltd., Jaipur. (2014-2016). Role: As Principal Investigator
Collaborator: -
18. "Proof Checking of Structural Design/Drawings for C/o 500 Bedded Boys Hostel and 210 Bedded Girls Hostel with provision for future vertical extension on III floor" funded by CPWD, Jaipur. (2014-2015). Role: As Principal Investigator
Collaborator: -
19. "Proof Checking of Structural Design of Multistoried residential apartment located at Sun-City, Jaipur-Bikaner Highway, Jaipur" funded by Apeksha Infrastructures Pvt. Ltd., Jaipur. (2014). Role: As Principal Investigator
Collaborator: -
20. "Experimental and analytical studies for the short term and long term behavior of epoxy bonded steel-concrete composite bridges" funded by DST, GOI. (2012-2015). Role: As Principal Investigator
Collaborator: -
21. "Proof checking of structural design and drawing of three ROB's at Makrana, Kishangarh and Ajmer in Rajasthan" funded by Multimedia Consultants Pvt. Ltd., Ahmedabad, India. (2012-2013). Role: As Principal Investigator
Collaborator: -

22. "Technical evaluation/quality assessment of PQC mix for cement content" funded by Airport Authority of India, Jaipur. (2012-2013). Role: As Principal Investigator
Collaborator: -
23. "Proof checking design of substructure of seventeen major railway bridges in the Swarupganj-Abu Road section of Ajmer division of north western railway" funded by Rail Vikas Nigam Limited. (2011-2012). Role: As Principal Investigator
Collaborator: -
24. "Development of a highly efficient procedure and GUI equipped software for the service load analysis of composite structures" funded by DST, GOI. (2008-2011). Role: As Principal Investigator
Collaborator: -
25. "Proof Checking of Various designs and drawings of Rajasthan Rural Water Supply and Mitigation Project" funded by Larsen & Toubro Limited. Ltd., Chennai. (-). Role: As Principal Investigator
Collaborator: -

As Scientist Mentor (6)

01. "Innovative Waste-Derived and Eco-Friendly Alternatives to Alkali Activators in Geopolymer Concrete: Towards Sustainable Development" funded by DST, GOI. (2025-2027). Role: As Scientist Mentor
Collaborator: NPDF: Dr. Rudra Pratap Singh
02. "GOBAiR - a novel cow dung based foaming agent for developing sustainable light weight construction materials" funded by IIT Indore. (2023-2024). Role: As Scientist Mentor
Collaborator: TRF: Dr. Sanchit Gupta
03. "Innovative and sustainable fibre-reinforced recycled aggregate concretes for structural applications" funded by INSA, DST, GOI. (2023-2024). Role: As Scientist Mentor
Collaborator: ISRF: Dr. Thanongsak Imjai
04. "Sustainable solution for limestone shortage in cement manufacturing through Ca-rich bio ash" funded by DST, GOI. (2022-2024). Role: As Scientist Mentor
Collaborator: NPDF: Dr. Ashita Singh
05. "Durability studies on geopolymer concrete containing waste rubber fibre as partial replacement of sand" funded by DST, GOI. (2015-2017). Role: As Scientist Mentor
Collaborator: -
06. "Durability of concrete containing zinc slag as partial replacement of sand" funded by DST, GOI. (2010-2013). Role: As Scientist Mentor
Collaborator: -

As Co-Principal Investigator (4)

01. "Developement of Portable Kit – An Alternative to Traditional Post Harvest Management Employing Photodynamic Inactivation" funded by AgriHub: Innovation Hub for Agriculture, IIT Indore. (2025-2027). Role: As Co-Principal Investigator
02. "Sustainable building products for net zero in construction: from lab to market" funded by TNE Grant, British Council Going Global Partnerships. (2025-2026). Role: As Co-Principal Investigator
Collaborator: University of Warwick, UK (Overall Lead: Dr Reyes Garcia); Concrete4Chnage Ltd, UK; Abhishek Bricks, India; JSW Cement, India;
03. "Waste characterization and possible gainful utilization of induction melting furnace dust" funded by Jaideep Ispat & Alloys Pvt. Ltd., Moira Sariya, India. (2021-2022). Role: As Co-Principal Investigator
Collaborator: -
04. "Utilization of Bamboo Strip as reinforcement in concrete" funded by TEQIP, MHRD. (2019-2020). Role: As Co-Principal Investigator
Collaborator: -

As a Guide (6)

01. "PARVAT (Prevention of accidents in hilly routes by virtue of automated technology)" funded by DRISHTI-CPS, IIT Indore. (2023-2024). Role: As a Guide
Collaborator: Student PI: Himanshu Khati, Benjamin Basumatary

02. "Real time quality control tool for fresh state concrete using a hydrostatic digital twin model" funded by DRISHTI-CPS, IIT Indore. (2022-2023). Role: As a Guide
Collaborator: Student PI: Parth Dwivedi
03. "A digital twin based real time traffic regulation system for risk management and failure prevention in bridges" funded by DRISHTI-CPS, IIT Indore. (2022-2023). Role: As a Guide
Collaborator: Student PI: Ayush
04. "A cyber physical system for low energy HVAC solutions based on natural thermal cycles and adaptive thermal comfort for smart cities" funded by DRISHTI-CPS, IIT Indore. (2022-2023). Role: As a Guide
Collaborator: Student PI: Sumer Thakur
05. "Experimental investigations of bond characteristics of steel-concrete composite interface connected by adhesive bonding" funded by Institution of Engineers (India). (2015-2016). Role: As a Guide
Collaborator: Student PI: Pankaj Kumar
06. "Performance evaluation of interlocking brick/block masonry" funded by Institution of Engineers (India). (2007-2008). Role: As a Guide
Collaborator: Student PI: Ahmed Naqvi

Other Projects (1)

01. "Knowledge incubation for technical education under Technical Education Quality Improvement Program of MHRD" (-). Funded by: MHRD. Role: -

Patents

01. Gupta, S., Singh S., Thakare, A., Jha, H.C., Chaudhary, S. (*Granted*, 2025). "Food and bacteria blended powder as a bio-admixture for cement composites", Patent No. -, Application No. 202521035191A, Grant Date: -.
02. Thakare, A. A., Gupta, S., Rajpoot, S., Jha, H. C., and Chaudhary, S. (*Granted*, 2025). "Bacterial Mortar Composition and Process for Preparation Thereof by using Food Waste derived Nutrient Media", Patent No. -, Application No. 202521071253A, Grant Date: -.
03. Gupta, S., and Chaudhary, S. (*Granted*, 2024). "Cow dung-based lightweight construction materials and method", Patent No. -, Application No. 202421010279A, Grant Date: -.
04. Gupta, T., Chaudhary, S., Sharma, R. K., and Jain, S. (*Granted*, 2020). "Method of Preparation of Conplas Paver Block Utilizing waste Polythene", Patent No. 396218, Application No. 202011002264, Grant Date: May 5, 2022.
05. Authors: Gupta, T., Sharma, R. K., Chaudhary, S., and Siddique, S (*Granted*, 2020). "Composition for preparation of Paver Block utilizing rubber waste", Patent No. 385236, Application No. 202011018399, Grant Date: Dec. 27, 2021.

List of publications

Books Published

01. Gambhir, M. L., and Chaudhary, S.(2025). Concrete Technology: Theory and Practice. McGraw Hill. (ISBN: 9789364446969)
02. Chaudhary, S., Patel, K. A.(2023). Testing & Evaluation of Civil Engineering Materials. AICTE (MoE). (ISBN: 9780128189610)
03. Hau, K. K., Gupta, A. K., Chaudhary, S., Gupta, T. (Editors)(2022). Recent Advances in Structural Engineering and Construction Management - Select Proceedings of ICSMC 2021. Springer Singapore. (ISBN: 9789811940392)
04. Samui, P., Kim, D., Iyer, N., and Chaudhary, S. (Editors)(2020). New Materials in Civil Engineering. Butterworth-Heinemann, Elsevier. (ISBN: 9780128189610)
05. Pancharathi, R.K., Sangoju, B., and Chaudhary, S. (Editors)(2020). Lecture Notes in Civil Engineering: Advances in Sustainable Construction Materials - Select Proceedings of ASCM 2019. Springer Singapore. (ISBN: 9789811533631)
06. Chaudhary, S., and Tripathi, B. (Editors)(2013). Current Challenges in Structural Engineering. (ISBN: 97998382880738)

07. Misra, A., and Chaudhary, S. (Editors)(2009). Sustainable Concrete Infrastructure Development. (ISBN: 9788190872317)
08. Chaudhary, S., Tiwari, S. K., and Chaudhary, M. (Editors)(2007). Recent trends in Geotechnical and Structural Engineering. (ISBN:)
SCI/ SCI-E Journal Publications (120)
01. Singh, A., Panghal, H., Bhaduria, S. S., and, Chaudhary, S. (2025). "Valorization of De-oiled Sesame and Sunflower Seed Residues as Sustainable Alternatives to Limestone and Supplementary Cementitious Materials in Cement Matrices". *Journal of Sustainable Cement-Based Materials*, .
02. Singh, A., Baghel, S. S., Bhaduria, S. S., and Chaudhary, S. (2025). "Mechanochemical Treatment of Low-Alkali Activated Slag Concrete: A Comparative Study of Potassium and Sodium Activators". *Journal of Materials in Civil Engineering, ASCE*, 37(11), 04025409.
03. Lazorenko, G., Kasprzhitskii, A., and Chaudhary, S. (2025). "One-step microwave preparation of phosphoric acid activated foams from spontaneous combustion coal gangue". *Journal of Industrial and Engineering Chemistry*, .
04. Panghal, H., Chaudhary, S., and Kumar, A. (2025). "Enhancing sustainable concrete performance: dual treatment of recycled coarse aggregates for improved strength and durability". *European Journal of Environmental and Civil Engineering*, 29(15), 3225–3256.
05. Lazorenko, G., Kasprzhitskii, A., Yatsenko, E.A., Wensheng, L., and Chaudhary, S. (2025). "Towards coal mining waste valorization: Gangue as resource for the production of geopolymers and related alkali-activated materials". *Green Technologies and Sustainability*, 3(3), 100205.
06. Singh, A., Panghal, H., Rath, D. K., Kumar, R., and Chaudhary, S. (2025). "Evaluating the potential of oil seed extract ashes from niger, cotton, and flaxseed as sustainable supplementary cementitious materials". *Sustainable Energy Technologies and Assessments*, 76, 104285.
07. Sharma, A., Gupta, S., Husain, M.N., and Chaudhary, S. (2025). "Factors affecting the rheology of cement-based composites: A review". *Journal of American Ceramic Society*, 108(6), e20429.
08. Gupta, S., Rajpoot, S., Thakare, A. A., Jha, H. C., and Chaudhary, S. (2025). "Upcycling Food Wastes as a Cost-Effective Nutrient Media in Bacterial Rubberized Mortar for Carbon Sequestering". *Waste and Biomass Valorization*, 16, 4939-4953.
09. Dicha, H.M., Chaudhary, S., Husain, M. N., and Krishnaraj, R. (2025). "Banana fibre-reinforced diatomaceous earth slurry treatment of recycled aggregate for enhanced structural concrete performance". *Scientific Reports*, 14, 4717.
10. Modi, M.A., Patel, K.A., and Chaudhary, S. (2025). "Prediction of deflection considering cracking and temperature gradient effects in steel-concrete composite girders". *Structural Engineering and Mechanics*, 93(1), 65-82.
11. Parolkar, R., and Chaudhary, S. (2025). "Dynamic duo: Understanding the interplay between fatigue and freeze-thaw in concrete durability". *Construction and Building Materials*, 489, 142309.
12. Jain, A., Maaze, M. R., Sachdeva, N., Chaudhary, S. and Gupta, R. (2025). "Optimizing granite waste aggregate content in self-compacting concrete using multi criteria decision approach". *Sustainable Chemistry and Pharmacy*, 46, 102093.
13. Sharma, A. and Chaudhary, S. (2025). "Experimental Investigations and Development of a Comprehensive Rheological Model for Cement Paste: A Novel Integration of Thixotropic Behavior and Hydration Effects". *Journal of Structural Design and Construction Practice*, .
14. Modi, M. A., Ramnavas, M. P., Patel, K. A., and Chaudhary S. (2025). "Analytical Approach for Predicting Deflection in Composite Deck Slabs Subjected to Service Load". *Journal of Structural Design and Construction Practice*, 31(1), 04025103.
15. Sharma, A., Chaudhary, S. (2025). "Time-resolved rheological characterization of cement paste using a distinct shear protocol: quantifying thixotropic and hydration-driven structuration". *Innovative infrastructure solutions*, 10, 487.
16. Modi, M.A., Patel, K.A., and Chaudhary, S. (2024). "Assessment of cracking, creep and shrinkage effects in indeterminate steel-concrete composite flexural members at service load". *Structures*, 70, 107663.

17. Imjai, T., Aosai, P., Garcia, R., Raman, S.N., and Chaudhary, S. (2024). "Deflections of high-content recycled aggregate concrete beams reinforced with GFRP bars and steel fibres". *Engineering Structures*, 312, 118247.
18. Kefyalew, F., Imjai, T., Garcia, R., Son, N.K., and Chaudhary, S. (2024). "Performance of recycled aggregate concrete composite metal decks under elevated temperatures: a comprehensive review". *Journal of Asian Architecture and Building Engineering*, 24(2), 683–705.
19. Neupane, R. P., Imjai, T., Garcia, R., Chua, Y. S., and Chaudhary, S. (2024). "Performance of eccentrically loaded low-strength RC columns confined with posttensioned metal straps: An experimental and numerical investigation". *Structural Concrete*, 25(5), 3583-3599.
20. Singh, A., Thakare, A. A., and Chaudhary, S. (2023). "A case study on examining the fresh-state behavior of self-compacting mortar containing waste powders from various sources". *Case Studies in Construction Materials*, e02684.
21. Srimuang, K., Imjai, T., Kefyalew, F., Raman, S. N., Garcia, R., and Chaudhary, S. (2023). "Thermal and acoustic performance of masonry walls with phase change materials: A comparison of scaled-down houses in tropical climates". *Journal of Building Engineering*, 108315.
22. Kumar, P., Kasar, A. A., and Chaudhary, S. (2023). "Numerical Analysis of Interfacial Failure Mechanism in Bonded Steel–Concrete Composite Connections". *International Journal of Steel Structures*, 23, 1279-1293.
23. Gupta, S., Agrwal, H., and Chaudhary, S. (2023). "Thermo-mechanical treatment as an upcycling strategy for mixed recycled aggregate". *Construction and Building Materials*, 398, 132471.
24. Jain, A., Gupta, R., Gupta, S., and Chaudhary, S. (2023). "Evaluation of real time fire performance of eco-efficient fly ash blended self-consolidating concrete including granite waste". *Journal of Building Engineering*, 77, 107533.
25. Singh, A., Bhaduria, S. S., Thakare, A. A., Kumar, A., Mudgal, M., and Chaudhary, S. (2023). "Durability assessment of mechanochemically activated geopolymers concrete with a low molarity alkali solution". *Case Studies in Construction Materials*, e02715 /20.
26. Neupane, R. P., Imjai, T., Makul, N., Garcia, R., Kim, B., and Chaudhary, S. (2023). "Use of recycled aggregate concrete in structural members: a review focused on Southeast Asia". *Journal of Asian Architecture and Building Engineering*, 24(3), 1197–1220.
27. Thakare, A. A., Siddique, S., Singh, A., Gupta, T., and Chaudhary, S. (2022). "Effect of rubber fiber size fraction on static and impact behavior of self-compacting concrete". *Advances in Concrete Construction*, 13(6), 433-450.
28. Jain, P., Gupta, R., and Chaudhary, S. (2022). "Comprehensive assessment of ceramic ETP sludge waste as a SCM for the production of concrete". *Journal of Building Engineering*, 104973.
29. Thakare, A. A., Singh, A., Gupta, T., and Chaudhary, S. (2022). "Effect of size variation of fibre-shaped waste tyre rubber as fine aggregate on the ductility of self-compacting concrete". *Environmental Science and Pollution Research*, 30, 20031–20051.
30. Jain, A., Choudhary, S., Gupta, R., Chaudhary, S., and Gautam, L. (2022). "Effect of granite industry waste addition on durability properties of fly ash blended self-compacting concrete". *Construction and Building Materials*, 340, 127727.
31. Jain, A., Chaudhary, S., Choudhary, S., and Gupta, R. (2022). "Resistance of fly ash blended self-compacting concrete incorporating granite powder against acid and sulphate environments". *Arabian Journal of Geosciences*, 15, 1156.
32. Gupta, S., and Chaudhary, S. (2022). "State of the art review on supplementary cementitious materials in India – II: Characteristics of SCMs, effect on concrete and environmental impact". *Journal of Cleaner Production*, 357, 131945.
33. Muttal, N., Chaudhary, S., Prasad, E. K., and Singh, S. K. (2022). "Waste tyre recycling: An emerging applications with a focus on permeable pavements". *Indian Journal of Engineering and Material Sciences*, 29(6), 707-713.

34. Thakare, A. A., Gupta, T., Deevan, R., and Chaudhary, S. (2022). "Micro and macro-structural properties of waste tyre rubber fibre-reinforced bacterial self-healing mortar". *Construction and Building Materials*, 322, 126459.
35. Jain, A., Chaudhary, S., and Gupta, R. (2022). "Mechanical and microstructural characterization of fly ash blended self-compacting concrete containing granite waste". *Construction and Building Materials*, 314 (Part A), 125480.
36. Gupta, S., Singh, D., Gupta, T., and Chaudhary, S. (2022). "Effect of limestone calcined clay cement (LC3) on the fire safety of concrete structures". *Computers and Concrete*, 27(4), 263-278.
37. Bhardwaj, A., Nagpal, A. K., Chaudhary, S., and Matsagar, V. (2021). "Effect of location of load on shear lag behavior of bonded steel-concrete flexural members". *Steel and Composite Structures*, 41 (1), 123-136.
38. Jain, A., Sharma, N., Choudhary, N., Gupta, R., and Chaudhary, S. (2021). "Utilization of non-metalized plastic bag fibers along with fly ash in concrete". *Construction and Building Materials*, 291, 123329.
39. Choudhary, S., Gupta, R., Jain, A., and Chaudhary, S. (2021). "Experimental Investigation of Rubberized Functionally Graded Concrete". *Revue des Composites et des Materiaux Avances*, 31 (1), 1-11.
40. Kumar, S., Patel, K. A., Chaudhary, S., and Nagpal, A. K. (2021). "Rapid prediction of long-term deflections in steel-concrete composite bridges through a neural network model". *International Journal of Steel Structures*, 21, 590–603.
41. Vasic, V. M., Pezo, L., Gupta, V., Chaudhary, S., and Radozevic, Z. (2021). "An artificial neural network-based prediction model for utilization of coal ash in production of fired clay bricks: A review". *Science of Sintering*, 53, 37-53.
42. Singh, G.K., Patel, K. A., Chaudhary, S., and Nagpal, A. K. (2021). "Methodology for rapid estimation of deflections in two-way reinforced concrete slabs considering cracking". *Journal of Structural Design and Construction Practice-ASCE*, 26(2).
43. Siddique, S., Gupta, V., Chaudhary, S., Park, S., and Jang, J. G. (2021). "Influence of the precursor, molarity and temperature on the rheology and structural buildup of alkali-activated materials". *Materials*, 14(13), 3590.
44. Choudhary, S., Singh, A., Jain, A., Gupta, R., and Chaudhary, S. (2021). "Effect of Fiber Volume Fraction of Waste Originated Tire Fiber and w/c Ratio on Mechanical Properties of Functionally Graded Concrete". *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 46, 2791–2808.
45. Gupta, V., Pathak, D. K., Kumar, R., Miglani, A., Siddique, S., and Chaudhary, S. (2021). "Production of colored bi-layered bricks from stone processing waste: structural and spectroscopic characterization". *Construction and Building Materials*, 278, 122339.
46. Gupta, T., Siddique, S., Sharma, R. K., and Chaudhary, S. (2021). "Investigating mechanical properties and durability of concrete containing recycled rubber ash and fibers". *Journal of Material Cycles and Waste Management*, 1-13.
47. Bhardwaj, A., Matsagar, V., Nagpal, A. K., and Chaudhary, S. (2020). "Bond Behavior in Flexural Members: Numerical Studies". *International Journal of Steel Structures*, 21, 225-243.
48. Gupta, T., Siddique, S., Sharma, R. K., and Chaudhary, S. (2020). "Effect of aggressive environment on durability of concrete containing fibrous rubber shreds and silica fume". *Structural Concrete*, 1-13.
49. Gupta, V., Pathak, D., Siddique, S., Kumar, R., and Chaudhary, S. (2020). "Study on the mineral phase characteristics of various Indian biomass and coal fly ash for its use in masonry construction products". *Construction and Building Materials*, 235, 117413.
50. Gupta, S., and Chaudhary, S. (2020). "State of the art review on Supplementary Cementitious Materials in India – I: An overview of legal perspective, governing organizations, and development patterns". *Journal of Cleaner Production*, 261, 121203.
51. Gupta, V., Pathak, D. K., Chaudhary, S., and Kumar, R. (2020). "Raman Imaging for Measuring Homogeneity of Dry Binary Blend: Combining Microscopy with Spectroscopy for Technologists". *Analytical Science Advances*, 1(2), 89-96.

52. Jain, A., Gupta, R., and Chaudhary, S. (2020). "Influence of granite waste aggregate on properties of binary blend self-compacting concrete". *Advances in Concrete Construction*, 10, 127-140.
53. Thakare, A. A., Siddique, S., Sarode, S. N., Deewan, R., Gupta, V., Gupta, S., and Chaudhary, S. (2020). "A study on rheological properties of rubber fiber dosed self-compacting mortar". *Construction and Building Materials*, 262, 120745.
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Translational Contributions

Naturally Colored Bi-layer Bricks (2021-2022) Technology Transferred

Developed a novel, naturally coloured bi-layer brick by upcycling dimensional stone processing waste. The novel building product offers three key advantages: (i) environment-friendly, safely disposes of the dimensional stone processing waste, which is a major concern in Rajasthan; (ii) economic, costs lower than the conventional painted masonry wall; and (iii) aesthetically pleasing, natural colouring provides an appealing look to the product. The Technology has been successfully transferred to M/s Abhishek Bricks, Indore, M. P., India, for the period 2022-2025 and is the first technology transfer from IIT Indore (Amount 3.00 Lakh+2% royalty).

GOBAiR™ - a cow dung based foaming agent (2024-2025)

Developed a first-of-its-kind foaming agent using cow dung, named GOBAiR. The novel foaming agent is a low-cost environment friendly alternative to commercially available foaming agents. The foaming agent has been used to prepare sustainable lightweight bricks. Field trials have been conducted across multiple cities for manufacturing and testing of lightweight bricks, with different industry partners.

Kapila – process of producing handicraft material using cow dung (2023-2024)

Developed a process of producing handicraft materials using cow dung as the raw material. The developed process can stabilize 100% pure cow dung, i.e., without any additive. The process is designed to promote cow dung as an alternative material for handicraft industry, and provide a second revenue stream for rural communities. A training workshop has been conducted and developed products are currently undergoing market fit trials at the commercial establishment of IIT Indore.

Professional Affiliations

- Fellow of the Indian Association of Structural Engineers (India). F530
- Fellow of the Institution of Engineers (India). F1268025
- Life Member of Indian Concrete Institute, Chennai (India). LM8595
- Life Member of The Indian Society for Technical Education. LM 36714
- Member of RILEM technical committee 273-RAC, Structural behavior and innovation of recycled aggregate concrete.
- Member of the Indian Green Building Council. (2022-2023) IGBC - IM - 1100283
- Member, Fire and Security Association of India. (2022-2025) IDR-I-0322-1197
- Member, Indian Road Congress, 2023-2024 Member Ship No. 402431

Administrative Positions Held

- Dean, Administration, Indian Institute of Technology (IIT) Indore (Feb 20, 2023 – present)
- Scientific Supervisor, Fuel Energy Waste Recycling Lab, South-Russian State Polytechnic University, NPI, Russia (June 2022 – present)
- Head/Professor-Incharge, Centre for Rural Development and Technology, Indian Institute of Technology (IIT) Indore (April 2020 –April 2023)

- Head, Department of Civil Engineering, Indian Institute of Technology (IIT) Indore (October 2017-March 2019)
- Associate Dean, Planning-III, Indian Institute of Technology (IIT) Indore (September 2017-March 2019)
- Coordinator, Technical Education Quality Improvement Programme (TEQIP), Indian Institute of Technology (IIT) Indore (September 2017 – October 2018)
- Associate Dean, Planning & Development, Malaviya National Institute of Technology (MNIT), Jaipur (June 2016 – May 2017)
- Associate Dean, Research & Consultancy, Malaviya National Institute of Technology (MNIT), Jaipur (November 2013 – May 2016)
- Associate Dean, Academic, Malaviya National Institute of Technology (MNIT), Jaipur (March 2012 – November 2013)
- Core Committee Member/Hub Governing Body Member/Strategic Task Force Member, DRISHTI CPS Foundation, Technology Innovation Hub, Indian Institute of Technology (IIT) Indore (August 2020-contd.)

Facilities and Centres established

- Fuel Energy Waste Recycling Lab at the South-Russian State Polytechnic University, NPI, Russia, as Scientific Supervisor, under the Mega Grant received by the Government of Russian federation
- Centre for Rural Development and Technology (CRDT) at the Indian Institute of Technology Indore, as founding Head
- DRISHTI-CPS Technology Innovation Hub at the Indian Institute of Technology Indore, as founding team Member
- Centre for TEQIP-III at the Indian Institute of Technology Indore, as founding Coordinator
- Department of Civil Engineering at the Indian Institute of Technology Indore, as founding Head

Workshops, conferences

01. Chairperson of "Rural Innovators Conclave II, 2025", organized by Centre for Rural Development and Technology (CRDT), organised at IIT Indore, Indore (March 21-22, 2025).
02. Co-Convenor of “1st International Symposium on Materials for Sustainable Development (ISMSD 2024)”, organized under a SPARC sponsored project titled “Inspiring the researchers of tomorrow in sustainable concrete construction” at IIT Indore, India. (December 20-21, 2024).
03. Chairperson of "Rural Innovators Conclave 2024", organized by Centre for Rural Development and Technology (CRDT), organised at IIT Indore, Indore (January 05-06, 2024).
04. Co-Convenor of “International Conference on Applied Mathematics and Mechanics (ICAMM 2023)” organised at IIT Indore, Indore (October 18-20, 2023).
05. Coordinator of “Workshop on Preservation and Protection of Heritage Structures” organised under a sponsored project by SPARC on September 16-17, 2023, at IIT Indore, Indore.
06. Coordinator of “Workshop on Metamaterials” organised under a sponsored project by SPARC, on March 26, 2023, at IIT Indore, Indore.

07. Coordinator of “Workshop on Properties of Fresh Concrete”, organised on March 24-25, 2023, at IIT Indore, Indore as a part of Scientific Social Responsibility, under the SERB-sponsored research project.
08. Co-Convener of “8th International Congress on Computational Mechanics and Simulation,” organised by the Indian Association for Computational Mechanics at IIT Indore, Indore (December 09-11, 2022).
09. Coordinator of “Workshop on Emerging Trends in Sustainable Construction”, as a part of Scientific Social Responsibility, under the SERB-sponsored research project, organised on 26-03-2022 to 27-03-2022 at IIT Indore, Indore.
10. Coordinator of “Workshop on Local Waste Utilisation in Rural Construction Activities”, a selffinanced event organised on 07-12-2021 at IIT Indore, Indore
11. Coordinator of “Online Workshop on Mechanics of Metamaterials”, organised on 18- 01-2021 and 25-01-2021 at IIT Indore, Indore
12. Symposium Chair of Fifth Asia and Pacific Young Researchers and Graduates Symposium on “Current Challenges in Structural Engineering” organised at MNIT Jaipur from October 15-16, 2013. Symposium was attended by participants from more than six countries.
13. Coordinator of the “AUTOCAD” workshop organised at MNIT Jaipur from October 23- 24, 2009.
14. Joint Organising Secretary, National Conference on “Sustainable Concrete Infrastructure Development 2009”, organised by Indian Concrete Institute and MNIT Jaipur, from May. 19-20, 2009.
15. Coordinator of TEQIP funded workshop on “AUTOCAD”, organised at MNIT Jaipur from Sept. 20-21, 2008.
16. Organising Secretary and Convenor of two-day National Seminar on “Recent Trends in Geotechnical and Structural Engineering” organised at MNIT Jaipur from Dec. 22-23, 2007.

Continuing Education Programs

01. Indian lead for a one-month short term training program as part of a joint international research capacity building program, under the project titled “Inspiring the researchers of tomorrow in sustainable concrete construction” jointly organised by IIT Indore, India, and UoP, UK, sponsored project by SPARC and UKERI, organized from July 13, 2024, to August 09, 2024.
02. Chairman of Expert Council for “Scientific School on Zero Waste” organised under Mega Grant Scheme at NPI Russia, on May 27- June 01, 2024, at NPI, Russia.
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03. Chairman of Expert Council for “Scientific School on Green Future” organised under Mega Grant Scheme at NPI Russia, on May 28- June 02, 2023, at NPI, Russia.
04. Coordinator of “Short Term Course on Low-Cost Housing for Rural Development”, a selffinanced event organised from 12-06-2021 to 14-06-2021 at IIT Indore, Indore
05. Coordinator of “AICTE ATAL Faculty Development Program on Sustainable Construction Technology”, organised from 26-07-2021 to 30-07-2021 at IIT Indore, Indore

06. Coordinator of “QIP Short Term Course on Sustainable Construction Practices”, organised from 12-10-2020 to 18-10-2020 at IIT Indore, Indore
07. Coordinator of “Short Term Course on Precast and Prefabricated Buildings”, a self financed event organised from 27-01-2020 to 31-01-2020 at IIT Indore, Indore
08. Coordinator of “Short Term Course on Sustainable Construction Practices”, a self financed event organised from 13-10-2019 to 15-10-2019 at IIT Indore, Indore
09. Coordinator of “Training Program on Active Learning: Phase C” organised from 25-06- 2018 to 29-06-2018 at IIT Indore, Indore for faculty members of MITS Gwalior and GEC Sundarnagar
10. Coordinator of “Training Program on Active Learning: Phase B” organised from 18-06- 2018 to 22-06-2018 at IIT Indore, Indore for JEC Jabalpur and MITS Gwalior faculty members .
11. Coordinator of “Training Program on Active Learning: Phase A” organised from 11-06- 2018 to 15-06-2018 at IIT Indore, Indore for faculty members of JEC Jabalpur.
12. Coordinator of Short Course on “Recent Advances in Geotechnical and Structural Engineering” organised at IIT Indore, Indore from 08-03-2018 to 10-03-2018.
13. Coordinator of “Faculty Induction Workshop: Phase C” organised from 29-01-2018 to 02-02-2018 at IIT Indore, Indore for faculty members of REC Rewa, SATI Vidisha, SEI Pithoragarh and SGSITS Indore.
14. Coordinator of “Faculty Induction Workshop: Phase B” organised from 23-01-2018 to 27-01-2018 at IIT Indore, Indore for faculty members of JEC Jabalpur and SGSITS Indore.
15. Coordinator of “Faculty Induction Workshop: Phase A” organised from 17-01-2018 to 21-01-2018 at IIT Indore, Indore for faculty members of UEC Ujjain and SGSITS Indore.
16. Coordinator of Self-Financed Short Term Training Programme on “Precast and Prefabricated Buildings” organised at MNIT Jaipur, Jaipur, India from 26-12-2016 to 30-12-2016.
17. Coordinator of Self-Financed Short Term Training Programme on “Building Materials Characterisation & Testing” organised at MNIT Jaipur, Jaipur, India from 06-06-2016 to 10-06-2016.
18. Coordinator of Self-Financed Short Term Training Programme on “Building Materials Characterisation & Testing” organised at MNIT Jaipur, Jaipur, India from 01-06-2015 to 05-06-2015.
19. Symposium Chair of Fifth Asia and Pacific Young Researchers and Graduates Symposium on “Current Challenges in Structural Engineering” organised at MNIT Jaipur from October 15-16, 2013.Symposium was attended by participants from more than six countries.
20. Coordinator of Short Term Faculty Development Programme on “Numerical & Computational Techniques in Engineering” organised by MNIT Jaipur, Jaipur, India from 17-12-2012 to 22-12-2012.
21. Coordinator of Technical Orientation Programme on “Soil & Other Material Properties and Base Map for Urban Infrastructure” for RUIDP Engineers from December 21-23, 2012.
22. Coordinator of Short-Term Training Programme on “Natural Disaster Management” from

October 29-31, 2012.

23. Coordinator of Technical Orientation Programme on “Soil & Other Material Properties and Base Map for Urban Infrastructure” for RUIDP Engineers from June 22-24, 2012.
24. Coordinator of Technical Orientation Programme on “Construction of Bridge, CD Works, ROB and RUB for Urban Areas” for RUIDP Engineers from Feb 24-26, 2012.
25. Coordinator of the “AUTOCAD” workshop organised at MNIT Jaipur from October 23- 24, 2009.
26. Joint Organising Secretary, National Conference on “Sustainable Concrete Infrastructure Development 2009”, organised by Indian Concrete Institute and MNIT Jaipur, from May. 19-20, 2009.
27. Coordinator of Two-week MHRD/AICTE sponsored winter school on “Soft Computing Skills in Engineering” organised at MNIT Jaipur from Dec. 11-24, 2008.
28. Coordinator of TEQIP funded workshop on “AUTOCAD”, organised at MNIT Jaipur from Sept. 20-21, 2008.
29. Coordinator of a Two-week MHRD/AICTE sponsored summer school on “Management and Mitigation of Natural Disasters” organised at MNIT Jaipur from July 14-26, 2008.
30. Organising Secretary and Convenor of two day National Seminar on “Recent Trends in Geotechnical and Structural Engineering” organised at MNIT Jaipur from Dec. 22-23, 2007.
31. Coordinator of two day training programme for Rajasthan Housing Board Engineers on “Multistoried Residential Apartments” organised at MNIT Jaipur from Dec. 08-09, 2007.
32. Coordinator of TEQIP-funded staff development programme on “Finite Element Method”, organised at MNIT Jaipur from July 09-13, 2007

International Collaborations

- University of Plymouth, UK
- Imperial College London, UK
- King Mongkut's University of Technology Thonburi, Thailand
- Northeastern University, Boston, USA
- Rostov State Transport University, Russia
- South-Russian State Polytechnic University, NPI, Russia
- The Hong Kong Polytechnic University, Hong Kong
- Université Aix- Marseille, France
- University of Carthage, Tunisia
- University of Edinburgh, UK
- University of Plymouth, UK
- Walailak University, Thailand
- Zhejiang University, China

Major Outreach (Govt/Intl/Natl Contributions)

Government Advisory Roles

01. Member - Construction and Related Engineering Services Sectional Committee of Bureau of Indian Standards, New Delhi
02. AICTE Representative - All India Council for Technical Education
03. Member - Pre Construction Services Sub Committee SSD 06: 01
04. Expert - Selection Boards of Public Service Commission of different states of India
05. Convener - Panel for Preparing Roadmap, SSD 06/P1, Bureau of Indian Standards, New Delhi
06. Member - Working Group (WG02) for revision of IS 1542: 1992 Sand for Plaster – Specification
07. Member - Expert Committee of All India Council for Technical Education

International Contributions

01. Secretary - Technical Committee on "Life Cycle Maintenance of Concrete Infrastructures (TC-LCM)" of Asian Concrete Federation
02. International Steering Committee Member - The 8th Asia-Pacific Young Researcher Graduate Symposium 2017
03. International Steering Committee Member - The 6th Asia-Pacific Young Researcher Graduate Symposium 2014
04. Chair - The 5th Asia-Pacific Young Researcher Graduate Symposium 2013
05. Invited Lecturer - International Symposium on "Structural Assessment and Remediation of Infrastructure"
06. Associate Editor - "Cleaner Materials", Elsevier
07. Chairman - Expert Advice Group of Scientific School "Green Future" for young scientists
08. Session Chair - The 7th Asia-Pacific Young Researcher Graduate Symposium 2015
09. Co-Chairman - Mini Symposium on Durability and Life Cycle Maintenance of Structure
10. Scientific Committee Member - 3rd ACF Symposium on Assessment and Intervention of Existing Structures
11. International Steering Committee Member - The 7th Asia-Pacific Young Researcher Graduate Symposium 2015
12. Session Chair - The 6th Asia-Pacific Young Researcher Graduate Symposium 2014
13. International Steering Committee Member - The 4th Asia-Pacific Young Researcher Graduate Symposium 2012
14. International Steering Committee Member - The 10th Asia-Pacific Young Researcher Graduate Symposium 2019
15. International Steering Committee Member - The 9th Asia-Pacific Young Researcher Graduate Symposium 2019
16. Chair - Technical Committee 1: Design of the Asian Concrete Federation
17. Session Chair - 7th International Conference of Asian Concrete Federation on Sustainable Concrete
18. International Scientific Committee Member - 10th International Symposium on Innovation & Utilization of High-Performance Concrete

National Contributions

01. Expert - Faculty Selections in Thapar Institute of Engineering & Technology, Patiala
02. Technical Committee Member - International Conference on Advances in Civil Engineering
03. Member - Technical Committee, Centralised Counselling of M.Tech. for National Institutes of Technology
04. Convener - Conference on Sustainable Habitat, Energy, Climate Change and Environment
05. Preliminary Committee Member - Evaluating proposals submitted to Shashtri Indo Canadian Institute

06. Member - Academic Advisory Committee of Applied Mechanics Department, SVNIT Surat
07. Member - Committee of Courses, Civil Engineering Department, College of Technology & Engineering, MPUAT, Udaipur
08. Subject Expert - Board of Studies of the Department of Civil Engineering
09. Mentor - Faculty and students of Dr. Babasaheb Ambedkar College of Engineering & Research, Nagpur
10. Expert - Curriculum Revision Workshop of M. Tech. (Structural Engineering) program of SVNIT Surat
11. Technical Committee Member - International Conference on Advances in Concrete, Structural and Geotechnical Engineering
12. Member - Pre Construction Services Sub Committee SSD 06: 01
13. Member - Expert Committee of All India Council for Technical Education
14. Convener - Panel for Preparing Roadmap, SSD 06/P1, Bureau of Indian Standards, New Delhi
15. Member - Executive Body of "Indian Concrete Institute- Rajasthan State Centre"
16. Independent Expert Committee Member - National Educational Alliance for Technology (NEAT) scheme of MHRD, Govt of India (2020)
17. Jury Member - Evaluating consultants for the construction of AICTE Campus in Jaipur
18. Member - DRISHTI CPS Foundation, Technology Innovation Hub, Indian Institute of Technology Indore
19. Special Invitee - Workshop on "Curriculum Development for Implementing Academic Autonomy"
20. Member - Working Group (WG02) for revision of IS 1542: 1992 Sand for Plaster – Specification
21. AICTE Representative - All India Council for Technical Education
22. Member - Construction and Related Engineering Services Sectional Committee of Bureau of Indian Standards, New Delhi
23. Member - Working Group (WG02) for revision of IS 1542: 1992 Sand for Plaster– Specification
24. Member - Pre Construction Services Sub Committee SSD 06: 01
25. Member - Board of Directors of Executive Excellence Program of Association of Infrastructure Industry (India)
26. Expert - Academic Audit of affiliated institutes of Gujarat Technological University
27. Expert - Curriculum Development Workshop of Civil Engineering Department of NIT Sikkim
28. Member - Construction and Related Engineering Services Sectional Committee of Bureau of Indian Standards, New Delhi
29. Expert - Selection Boards of Public Service Commission of different states of India
30. Associate Editor - Journal of The Institution of Engineers (India): Series A, Springer
31. Expert - Selection Boards of Public Service Commission of different states of India
32. Coordinator - Centralised Counselling of M.Tech. for National Institutes of Technology of India (2014)
33. Member - Expert Committee of UGC for assessment of fulfillment of criteria by Bennett University, Greater Noida
34. Expert - Recruitment of faculty of Civil Engineering Department of NIT Sikkim