



Dr. JYOTI PUSHAN BHUSARI

Professor, Department of Civil Engineering

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OVERVIEW:

Qualifications: Ph.D. (Civil), ME (Structural Engineering), BE (Civil)

Experience: Teaching - 28 years

Date of Joining STES: 22/11/2003

Skills and Proficiencies:

- Expertise in structural analysis using finite element analysis and design of structures
- Strong research background in structural behavior, concrete technology
- Experienced in curriculum development, student mentoring, and project supervision
- Effective communication, leadership, and industry collaboration skills

SIGNIFICANT ACHIEVEMENTS:

- National Governing Council Member of Indian Institute of Bridge Engineers, India.
- Advisory Committee Member, Indian Institute of Bridge Engineers Pune Center, India
- Member of Advisory and Organizing Committee, from year 2020 till today, of Late Shri S.B. Joshi Award & Memorial Activities; and Late Shri C.V. Kand Award.
- Recognized Ph.D. Guide and PG Teacher of Savitribai Phule Pune University
- Former BOS member for Course 'Civil for Rail Technology' under Department of Science and Technology, Savitribai Phule Pune University, Pune.
- Chairman of various subjects of UG and PG in Civil Engineering

AREA OF EXPERTISE /RESEARCH INTERESTS:

- **Structural Engineering:** Analysis, design, and performance evaluation of reinforced concrete structures.
- **Construction Materials:** Development and characterization of advanced cementitious materials, including Reactive Powder Concrete (RPC).
- **Corrosion and Durability:** Assessment and mitigation of corrosion in reinforced concrete structures.
- **Repair and Retrofitting:** Structural strengthening, rehabilitation techniques, and failure investigation.
- **Concrete Technology:** Mix design, mechanical property evaluation, and sustainable material development.

NUMBER OF STUDENTS GUIDED:

- PG – 35+ , UG – 60+ Groups

RESEARCH PUBLICATIONS:

Publication Summary:

- Scopus/ SCI: 06
- International Journal: 26
- Conference:17
- h-index: 06
- i10 index: 04
- <https://scholar.google.com/citations?user=bwymj5sAAAAJ&hl=en>

FUNDED RESEARCH PROJECT:

- Co-Investigator for Research Project on " Influence of Fiber Strength on Fracture Characteristics of Normal and High Strength Concrete" sanctioned by BCUD, SPPU, Pune, Amount Rs. 140000, Year 2017-21.
- Principal-Investigator for Research Project on " Parametric Study on Characterization of Reactive Powder Concrete" sanctioned by BCUD, SPPU, Pune, Amount Rs. 140000, Year 2013-15.
- Co-Investigator for Research Project on "Mechanical properties of Reactive Powder Concrete" sanctioned by BCUD, SPPU, Pune, Amount Rs. 200000, Year 2010-12.

RESEARCH WORK:

Phd Research Work:

Studies on Characterization of Reactive Powder Concrete for Enhanced Performance of Beam-Column Joints in RC Frame

- The research explored the mechanical behavior and structural performance of Reactive Powder Concrete (RPC), emphasizing its application in beam-column joints prone to shear failure.
- Comprehensive experimental investigations were conducted, including compressive strength testing on 112 trial mixes, with predictions made using Artificial Neural Network (ANN) models. Mechanical properties such as flexural, shear, and tensile strengths were evaluated, along with bond strength between RPC and conventional concrete using slant shear, bi-surface shear, and pull-out tests. Beam-column joint models with varied RPC configurations were tested under static and cyclic loads, with detailed load-deflection behavior analysis. The study established that using RPC only in critical joint areas, rather than throughout the entire structure, offers a cost-effective yet structurally efficient solution.
- Finite element analysis validated the experimental findings, highlighting the improved structural integrity, crack resistance, and energy absorption capacity of RPC-based joints.
- The research contributed to the philosophy of sustainable and efficient structural design by optimizing the use of high-performance materials. It demonstrated that selective application of RPC in beam-column joints can enhance seismic resilience while minimizing material costs. The findings support innovative design practices integrating advanced materials for structural retrofitting and disaster-resilient infrastructure development.

NOTABLE GUIDED PROJECTS:

PG projects:

- Performance Based Design of Steel Structures for Fire Conditions
- Seismic Analysis and Design of Different Types of Bridge Abutments
- Experimental Study on the Torsional Behavior of Reinforced Concrete Beams Strengthened with Basalt Fibres

All above PG projects won first position in PCERF B.G. Shirkhe Award.

UG Projects:

- Shear Strengthening of RC Deep Beams with Openings by Carbon Fiber Reinforced Polymer
- Enhancing The Shear Resistance of Reinforced Concrete Exterior Beam Column Joint
- Characterisation of High Performance Concrete for its Mechanical Properties.
- Bond Characterization of Reactive Powder Concrete

RESOURCE PERSON TO INDUSTRY/ACADEMIA:

1. Invited as a Faculty in a two week training Programme on Finite Element Analysis at National Water Academy, Pune during 1st to 11th August 2006.
2. Faculty for subject of Strength of materials and Engineering Mechanics for the MPSC and GATE courses conducted at Institution of Engineers, India, Pune Local Centre for the years 2006-07 and 2007-08.
3. Participated as a member and gave valuable contribution in the workshop held on 2nd April 2008 for the Effective Implementation of Syllabus for M.E. (Civil/Structures) 2008 course of University of Pune at SCOE, Pune.
4. Invited as a Faculty in a two week training Programme on Finite Element Analysis for Water Resources Structures at National Water Academy, Pune during 12th to 22nd May 2009.
5. Delivered Lecture as a resource person on Introduction to Plastic Analysis at 5 days National Workshop on Design of Steel Structures using Revised IS 800-2007 at Department of Civil Engineering SCOE, Pune-41 from 30th June to 4th July 2009.
6. Faculty for the Training Course conducted for Engineers of Larsen and Tourbo Ltd from 11th October 2010 to 16th December 2010 through Asian academy of Professional Training, Pune. Lectures delivered on topics of Strength of Materials, Prestressed Concrete, and Detailing for RCC and steel structures.
7. Faculty for the Training Course conducted for engineers of Larsen and Tourbo Ltd from October 2011 to December 2011 through Asian Academy of Professional Training, Pune. Lectures delivered on topics of Strength of Materials, Prestressed Concrete, and Detailing for RCC and Steel Structures.
8. Reviewer for the 1st International Conference on Recent Trends in Engineering & Technology (ICRTET'2012), March 23-25, 2012 organized by SNJB (Jain Gurukul) Sanstha and SNJB's Late Sau Kantabai Bhavarlalji Jain College of Engineering, Chandwad, Dist. Nashik
9. Invited as a Faculty in a two week training Programme on Finite Element Analysis for Water Resources Structures at National Water Academy, Pune during 11th - 22nd March 2013.
10. Invited as Auditor to audit the term work related to the Structural Engineering subjects at Flora Institute of Technology, Pune on 26th April 2016
11. Invited as a Speaker for a Guest Lecture on Earthquake Engineering: Response Spectrum Method at Department of Civil Engineering, SAE, Kondhwa on 27th July 2016
12. Resource Person at FDP on Structural Design and Drawing and conducted session on Earthquake Force Calculation and Analysis and Design of Frames at PVPIT, Bavdhan on 10th September 2016 organized in association with BOS- Civil Engineering SPPU, Pune

13. Delivered a Guest Lecture on Design of water tank by Limit State Method at SAE, Kondhwa on 30th September 2016.
14. Invited as a Guest Speaker to deliver lecture on Plastic Analysis at Symbiosis Institute of Technology on 19th April 2017.
15. Delivered a Guest lecture on Structural Design and Drawing at PVPIT, Bavdhan on 15th September 2017.
16. Delivered a Guest lecture on Finite Element method for Structural Analysis at PCCOE on 29th September 2017.
17. Invited as Resource person for Faculty Development Program during 22nd - 23rd July 2017 on the Topic Earthquake Analysis at Guru Govind Singh College of Engineering & Research Center, Nashik.
18. Resource person for One Day Workshop on Design of PT Flat Slabs & Introduction to Vibration and Earthquake Analysis on 28th July 2018 at Sinhgad College of Engineering
19. Resource person for Faculty Development Programme on Engineering Mechanics on 28th December 2018 at SCOE.
20. Invited for Guest lecture on Introduction to vibration and earthquake analysis, on 7th September, 2018 at Indira College of Engineering & Management, Parandwadi.
21. Invited for Guest lecture on Introduction to vibration and earthquake analysis, on 5th October 2018 at PVPIT, Bavdhan.
22. Resource person for Two days Faculty training programme on Prestressed Concrete Structures on 19th and 20th July 2019 at Sinhgad College of Engineering.
23. Invited as resource person for Two Day National Workshop on Prestressed Concrete and Advance Structures on 26th and 27th August 2019, organized by MIT, WPU.
24. Invited as a resource person for subject of Structural Design and Drawing III in 3 day workshop on Online Teaching Syllabus for B. E. Civil (2015 Pattern) organized by Department of Civil Engineering, AISSMS College of Engineering in association with BOS, SPPU from 14th to 16th July 2020
25. Invited as Guest Lecture on "Theory of vibrations" for BE Civil Engineering Students, on Monday, 7th December 2020 at PCETS Pimpri Chinchwad College of Engineering and Research, Ravet - Pune Campus.
26. Deliver online talk on Future Scope in Structural Engineering in 4 days Online talks for TE Civil students on 5th January 2021 organized by Department of Civil Engineering at Pimpri Chinchwad College of Engineering (PCCOE), Pune.
27. Contributed as Resource Person in One day online FDP on "Recent Advancements in Concrete Technology" organized by Department of Civil Engineering, AISSMS College of Engineering, Pune on 9th January 2021.
28. Contributed as a Resource Person for the subject Pre-stressed Concrete in One Week Students Development Program on "GATE Examination Coaching with Tips and Tricks" organized by the Department of Civil Engineering, AISSMS College of Engineering, Pune on 28th January 2021.
29. Course Coordinator for the course of Formwork Engineering in Three Days Online Workshop for Drafting of TE Civil 2019 Pattern Syllabus, organized by AISSMS College of Engineering, Pune, in association with Board of Studies, Civil Engineering SPPU from 3rd May to 5th May 2021.
30. Panel Member for the course of Matrix Methods of Structural Analysis, Design of Reinforced Concrete Structures, Advanced Concrete Technology in Three Days Online Workshop for Drafting of TE Civil 2019 Pattern Syllabus, organized by AISSMS College of Engineering, Pune, in association with Board of Studies, Civil Engineering, SPPU from 3rd d May to 5th May 2021.

31. Invited as Subject coordinator in the three days online workshop on “Implementation and Execution of Third Year Civil Engineering 2019 Pattern Syllabus” organized during 7th September 2021 to 09th September 2021.
32. Invited for expert lecture on Design of Post Tensioned Prestressed Concrete Flat Slab on 17th September 2021 at Department of Civil Engineering, D.Y. Patil College of Engineering Akurdi.
33. Invited for Expert Lecture on Water Retaining Structures organized by Department of Civil Engineering, Pimpri Chinchwad College of Engineering and Research, Ravet on 22nd and 24th September 2021
34. Invited as Guest Speaker at Department of Civil Engineering Department, AISSMS COE, Pune, for the subject Structural Design and Drawing-III on 27th September 2021
35. Invited as a Technical program committee member at First IEEE International Conference on Computing, Communication & Green Engineering-2021 (CCGE'21) organized by JSPM's Rajarshi Shahu College of Engineering, Pune during 23rd – 25th September 2021.
36. Invitation as a resource person for Expert Lecture on “Design of Prestressed Concrete Girder” on 21st October 2021.organized by SRTTC-FoE (Department of Civil Engineering) Khamshet Pune,
37. Invited as Reviewer for VISHWACON 2021 an International Conference on Recent Trends in Engineering and Technology, held on 27th and 28th November 2021 on virtual mode organized by Vishwakarma Institute of Information Technology.
38. Invited as Chairperson for VISHWACON 2021 an International Conference on Recent Trends in Engineering and Technology, held on 27th and 28th November 2021 on virtual mode organized by Vishwakarma Institute of Information Technology.
39. Invited as Guest Speaker in Faculty Development Program on Recent Advances in Structural Engineering from 18th April to 20th April 2022 organized by Guru Govind Singh College of Engineering and Research Center in Association with ISTE.
40. Invited as a Reviewer in 2nd National Conference on Innovation in Engineering and Technology (NCIET 2022) organized by AISSMS College of Engineering, Pune on 20th May 2022.
41. Course coordinator for drafting syllabus of subject Advanced Design of Concrete Structures in the Two Days Online Workshop for Syllabus Drafting of BE Civil 2019 Pattern Syllabus organized by AISSMS College of Engineering, Pune in association with BOS, Civil SPPU, Pune on 30th June 2022 and 1st July 2022.
42. Member of team for drafting syllabus of subject Finite Element Method in the Two Days Online Workshop for Syllabus Drafting of BE Civil 2019 Pattern Syllabus organized by AISSMS College of Engineering, Pune in association with BOS, Civil SPPU, Pune on 30th June 2022 and 1st July 2022.
43. Invited for lecture in the Induction program for engineers recruited at Soil and water Conversation department at WALMI Aurangabad on 9th September 2022. Delivered lectures on innovation in Concrete and Concrete mix design concept and applications
44. Invited as Guest Speaker at Department of Civil Engineering Department, PVPIT, Bavdhan on Stiffness Method of Analysis on 16th May 2023
45. Invited as Guest Speaker at Department of Civil Engineering Department, SITS Narhe on Plastic Analysis of Structures on 23rd May 2023.
46. Invited by PCCOE, Pune as reviewer for 2nd International Conference of Innovation in Mechanical & Civil Engineering 2023(i-MACE 2023) at PCCOE, held on 18th and 19th August 2023.

47. Invited for lecture in the Induction program for engineers recruited at Water Resources department at WALMI Aurangabad on 11th September 2023. Delivered lectures on Innovations in Concrete Technology.
48. Invited to deliver the lecture on “Design of RC bridges” for Final Year B. Tech Civil students at PCCOE, Pimpri Chinchwad on 13th October 2023.
49. Invited to deliver the lecture on “Bridge Engineering” at SITS Narhe, 17th October 2023.
50. Invited to chair a session at the International Conference on Condition Assessment, Rehabilitation & Retrofitting of Structures (CARRS 2023), 10th to 13th December 2023, Hyderabad, India, organized by IIT Hyderabad.
51. Invited to deliver an Expert Lecture for the subjects “Design of Bridge and TRE-II” for final year Civil Engineering Students of Dr. D.Y. Patil Pratishthan’s College of Engineering, Salokhenagar, Kolhapur 2nd April 2024.
52. Invited to give feedback as expert for the upgrading the curriculum of B.Tech (Civil) based on the present need of the industry and as per NEP 2020 by the Department of Civil Engineering of Bharati Vidyapeeth, College of Engineering, Pune in year 2023_24
53. Invited as resource person for a one day workshop on ‘Research Topics for PG Structures Students organized by IEI, Pune Local Center and ISET, Pune Local Center on 27th April 2024.
54. Resource person for a 2-day refresher course on ‘Structural Dynamics: Theory and Applications’ on 14th and 15th November 2024 at IEI, Pune

SUBJECTS TAUGHT:

Engineering Mechanics, Strength of Materials, Structural Analysis, Structural Design, Advance Structural Design, Matrix Method of Structural Analysis, Finite Element Analysis, Numerical Methods in Structural Engineering, Plates and Shells, Earthquake Engineering, Forensic Engineering, Structural Design of Bridges

FDP/STTP/SDP/WORKSHOPS ORGANIZED AS A COORDINATOR:

- Conducted a crash course for 10 days from 10th March 2008 to 19th March 2008 in Theory of Structures II for the students of Sinhgad College of Architecture.
- Coordinated a 5 days National Workshop on Design of Steel Structures using Revised IS 800-2007 at Department of Civil Engineering Sinhgad College of Engineering, Pune-41 from 30th June to 4th July 2009.
- Coordinated the training on REVIT Architecture under VAP program in 2017-18.
- Coordinated One Day Workshop on Design of PT Flat Slabs & Introduction to Vibration and Earthquake Analysis on 28th July 2018 at Sinhgad College of Engineering and conducted session on Introduction to Vibration and Earthquake Analysis.
- Conducted Faculty Development Programme on Engineering Mechanics on 28th December 2018 and conducted session on Unit I - Statics.
- Coordinated the SPPU sponsored Two Days National Conference on PANCHTATVA in Civil Engineering- Integrating Five Elements of Nature for Sustainable Development, on 27th to 28th February 2019 at Sinhgad College of Engineering.
- Co-coordinated the 6th SPPU Post Graduate Conference in Civil Engineering at Department of Civil Engineering, Sinhgad College of Engineering on 17th and 18th June 2019.
- Coordinated Two days Faculty Training Programme on Prestressed Concrete Structures on 19th and 20th July 2019 at Sinhgad College of Engineering and conducted session on Overview of codal provisions for Prestressed concrete as well as Design of Prestressd Concrete Girder.

- Coordinated an online One Week Short Term Training Program on Bridge Engineering: Design, Execution, Maintenance & Rehabilitation in association with Indian Institution of Bridge Engineers, Pune Chapter from 13th July 2020 to 17th July 2020 on Zoom platform and Youtube live streaming.
- Coordinated Webinar "A to Z of Prestressing" by Speaker- Er. Vinay Gupta, Director & CEO, Tandon Consultants Pvt Ltd. on 23rd December, 2020 organized by Indian Institution of Bridge Engineers
- Coordinated Webinar on Post Tension Tendons in Bridge Structures- Evaluation and Protection, on 19th February 2021 organized by Indian Institution of Bridge Engineers
- Coordinated a Virtual Technical Tour of Rajashree Cement Works on 19th June 2021 organized by Department of Civil Engineering, Sinhgad College of Engineering, Pune in association with UltraTech Cement India Ltd.
- Coordinated 'A 30 Hours Basic Course on Design and Construction Aspects of Bridges' organized by Indian Institution of Bridge Engineers in association with Sinhgad College of Engineering, Pune from 26th November 2021 to 18th of December 2021.
- Coordinated Webinar on New Developments in Deep Foundation Testing, on 11th February 2022 organized by Indian Institution of Bridge Engineers
- Coordinated and organized seminar on Digital World of Structural Engineering on 21st March 2022 at Sinhgad College of Engineering, Pune.
- Coordinated and organized Webinar on Management of Engineering Structures on 4th April 2022 in online mode at Sinhgad College of Engineering, Pune.
- Convener for the one day workshop on practical orientation on Mechanics of Structure Lab on 11th August 2022 at Sinhgad College of Engineering, Pune.
- Co-ordinated and organized the Two-Day Faculty Training Program on Testing of Concrete on 15th and 16th September 2022 at Sinhgad College of Engineering, Pune.
- Coordinated as Event Head, the Conference and Exhibition - Bridge 2022- New Era in Indian Bridge Engineering, organized by Indian Institution of Bridge Engineers on 9th and 10th December 2022.
- Worked as Member of Coordinating committee for Idea to Patent Workshop organized by IPR Cell, Sinhgad College of Engineering on 18th May 2023.
- Organized Technical lecture on 'Importance of Civil Structures Softwares and internships' by Hrishikesh , representative from Hitesh Lahoti and associates on 21st August 2023 for Students of Civil Engineering, at Sinhgad College of Engineering.
- Organized a Guest lecture by Hitesh Chaudhari Founder, TuxDa, Nashik on 23rd August 2023 for Students of Civil Engineering Department Sinhgad College of Engineering on Structural Engineering Career Opportunities.
- Coordinated the department level FE Induction Programme on 8th September 2023 at Sinhgad college of Engineering.
- Coordinated IP Awareness Workshop on Patent Search and Technology Transfer for Monetization of Patents held on 13th September 2023, Wednesday organized by IPR Cell Sinhgad College of Engineering, Pune.
- Coordinated AutoCAD and STAAD.Pro Connect Edition Course from 13th September 2023 conducted by CESA for the students of Department of Civil Engineering
- Coordinated 30 hrs AutoCAD basic course conducted by CESA from 27th February to 3rd March 2024 for the students of Department of Civil Engineering.
- Coordinated Webinar Series on Retrofitting and Rehabilitation of Bridges (10 Sessions) from 24th November 2023 to 25th January 2024 organized by Indian Institution of Bridge engineers in association with Sinhgad College of Engineering.

- Technical committee member for a one day workshop on ‘Research Topics for PG Structures Students organized by IEI, Pune Local Center and ISET, Pune Local Center on 27th April 2024.
- Organized Technical lecture on ' Importance of Civil Structures Software and internships' by Hrishikesh Mugutkar, representative from Hitesh Lahoti and Associates on 16th July 2024 for Students of Civil Engineering, at Sinhgad College of Engineering.
- Co-coordinated the event of celebration of World environment day, organized by department of Civil Engineering under the aegis of Institute Innovation council in association with green club on 29th July 2024.
- Coordinating the STAAD.Pro Connect Edition Course commencing from 5th August 2024 to 1st September conducted by CESA for the students of Department of Civil Engineering under MOU with Hitesh Lahoti and Associates
- Co-Coordinator for a 2-day refresher course on ‘Structural Dynamics: Theory and Applications’ on 14th and 15th November 2024 at IEI, Pune
- Coordinated Webinar Series on Forensics, Damage Assessment &Retrofitting of Bridges (11 Sessions) from 13th December 2024 to 14th March 2025 organized by Indian Institution of Bridge engineers in association with Sinhgad College of Engineering.

CONFERENCES ATTENDED:

Attended 20+Conferences and Seminar

FDP/STTP/SDP ATTENDED:

- TEQIP/AICTE/ISTE/IETE sponsored FDP – 20+
- Others- 70+

RESPONSIBILITIES HANDLED AT STES/SCOE/DEPT:

Institute Level (SCOE)

- Coordinator of Institute Level YUKTI Committee
- Member of Institute Level Kapila Committee
- Member for Building Maintenance Committee of Institute
- Coordinator for ME admissions

Department Level

- PG Coordinator
- Coordinator of the Monitoring and Coordination committee of Quality Circle of Department.
- In charge of the Structural Dynamics Laboratory
- Recognized guide for ME and PhD programs
- Coordinator-NBA Criterion 3

DECLARATION:

I hereby declare that all the above information furnished by me are true to the best of my knowledge.

Date: 09 / 12 / 2024

Signature