Sanket Nayak, PhD

Associate Professor, Dept. of Civil Engineering
Indian Institute of Technology (Indian School of Mines), Dhanbad
Jharkhand-826004, India.
Phone: 0326-2235143 (O), Mobile: +91-9471192395, +91-9437310275.
Email: sanket@iitism.ac.in, sanketiitbbsr@gmail.com

D.O.B.: 3rd April, 1983.

Citizenship: Indian

Research Interest:

- Seismic Safety Assessment and Enhancement
- Mitigation Strategy for Impact Vulnerability
- Sustainable Strengthening Techniques
- Masonry Structures Vulnerability Assessment and Strengthening Strategy
- Structural Health Monitoring
- Structural Dynamics & Earthquake Engineering
- Sustainable Concrete

Educational Qualification:

- ✓ **B. Tech.** in Civil Engineering (KIIT University, Bhubaneswar)
- ✓ **M. Tech.** in Structural Engineering (Odisha University of Technology & Research, Bhubaneswar)
- ✓ **Ph.D.** in Structural Engineering (IIT Bhubaneswar)

Experience:

- **Associate Professor,** Department of Civil Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, since 13th April, 2022 to till date.
- **Assistant Professor,** Department of Civil Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, since 28th May, 2014 to 12th April, 2022.
- **Visiting Academic Researcher** during November, 2024, Department of Civil and Environmental Engineering, **Universitat Politècnica de Catalunya, Barcelona Tech - UPC.**
- **Visiting Academic Researcher** during October, 2016, Department of Civil and Environmental Engineering, **University of Surrey, UK.**
- **Visiting Faculty** during June, 2015, Department of Civil and Environmental Engineering, **University of Windsor, Canada.**
- **Assistant Professor,** School of Civil Engineering, KIIT University since 1st October, 2013 to 22nd May, 2014.

- **Research Scholar**, School of Infrastructure, IIT Bhubaneswar since 5th October, 2009 to 30th September, 2013.
- **Lecturer,** School of Civil Engineering, KIIT University since 30th August, 2007 to 1st October, 2009.

Courses Taught:

Under Graduate	**Post Graduate**
• Structural Analysis	Structural Dynamics & Earthquake Engineering
• Solid Mechanics	Earthquake Resistant Design of Structures
• Design of RC Structures	Concrete Technology
• Engineering Graphics (Drawing Lab.)	Finite Element Method
• Material Testing (Lab.)	Advanced Design of Structures
• Structural Analysis (Lab.)	Structural Engg. (Lab.)

Research Guidance:

- **Ph.D.**

  A. Completed: 06

  1. Dr. Romio Mandal, Defended Thesis in January 2025.

  Supervisors: Dr. Sanket Nayak and Prof. S K Panda, IIT Bhubaneswar.

  2. Dr. Manish Prabhakar Mokal, Awarded in the Year 2024.

  Supervisors: Dr. Sanket Nayak and Prof. S K Panda, IIT Bhubaneswar.

  3. Dr. Nikhil Ranjan, Awarded in the Year 2024.

  Supervisor: Dr. Sanket Nayak

  4. Dr. Sajal Sarkar, Awarded in the Year 2023.

  Supervisors: Dr. Sukanta Chakraborty and **Dr. Sanket Nayak.**

  5. Dr. Susanta Banerjee, Awarded in the Year 2021.

  Supervisors: Dr. Sanket Nayak and Prof. Sreekanta Das, University of Windsor, Canada.

  6. Dr. Puja Rajhans, Awarded in the Year 2019.

  Supervisors: Prof. S K Panda and **Dr. Sanket Nayak.**

  B. Ongoing: 04

- **M. Tech.**

  Completed: 14, Ongoing: 02

Awards and Achievements:

- Carried out collaborative research work during November 2024, as **Visiting Academic Researcher** in Department of Civil and Environmental Engineering, **Universitat Politècnica de Catalunya, Barcelona Tech – UPC.**
- Visited **Italy,** for presenting paper in 16th International Conference on Civil, Structural and Environmental Engineering held at **Riva del Garda, Italy** held during 16th – 19th September, 2019.
- **Member of the Scientific Committee of EUCEET 2018:** 4th International Conference on Civil Engineering Education held in **Barcelona, Spain,** from September 5th to 8th, 2018.
- Received **Institution of Engineers India (IEI) Young Engineers Award 2018-2019,** in Civil Engineering Discipline.
- Visited **University of Malaya, Kuala Lumpur, Malaysia for p**resenting paper in **14th International Conference on Concrete and Technology (CONCET- 2018)** held during 8th to 9th August, 2018, funded through **ITS** from **SERB (DST), Govt. of India**.
- Carried out collaborative research work during October 2016, as **Visiting Academic Researcher** in Department of Civil and Environmental Engineering, **University of Surrey, UK.**
- Carried out collaborative research work during June 2015, as **Visiting Faculty** in Department of Civil and Environmental Engineering, **University of Windsor, Canada.**
- Developed **Biaxial Shake Table facility** at IIT (ISM), Dhanbad, which may be considered as **state-of-the-art** facility in the field of **Structural Dynamics** and **Earthquake Engineering**.
- Visited **Tokyo Institute of Technology, Tokyo, Japan** from 3rd to 9th March, 2012 for presenting paper in an International Conference. The visit was also enriched with technical interaction and state-of-the-art laboratory visit of many renowned Universities and Companies like **Yamaguchi University and Shimuzi Corporation**, **Tokyo, Japan**.
- Got the **MHRD fellowship** to pursue Ph.D. in School of Infrastructure at IIT Bhubaneswar in the year 2009.
- Bagged **TWO Gold Medal awards (**S.V. Srinivasan Memorial and Madhab Jena Memorial) by Institution of Engineers, India, Bhubaneswar chapter in the year 2009.

Publications:

Journals [43]

1. Junias, J., Ranjan, N., and **Nayak, S. (2025),** "A systematic review of structural performance and failure trends of impact on low-rise masonry dwellings: Current trends and way forward" **Structures, Elsevier, 71, 107988, DOI:** 10.1016/j.istruc.2024.107988.

2. Mandal, R., Panda, S. K. and **Nayak, S. (2025),** "Influence of two-stage mixing approach on thixotropic behavior of self-compacting recycled aggregate concrete", **Journal of Materials in Civil Engineering, ASCE, 37(3): 04025017, DOI:** 10.1061/JMCEE7.MTENG-18447.
3. Ranjan, N., Banerjee, S., **Nayak, S.** and Das, S. **(2024),** "Upgrading seismic safety of masonry building models built using recycled waste fiber-reinforced mortar through uni-axial shake table testing", **Structures, Elsevier, 65, 106624, DOI:** 10.1016/j.istruc.2024.106624.
4. Tudu, C., Mohanty, M., Mohapatra, S. S. and **Nayak, S. (2024)** "A systematic review exploring the feasibility of waste plastic as different constituents towards sustainable concrete" **Construction and Building Materials, Elsevier, 428, 136210, DOI:** 10.1016/j.conbuildmat.2024.136210.
5. Mandal, R., Panda, S. K. and **Nayak, S. (2024),** "Evaluation of rheological properties of sustainable self-compacting recycled aggregate concrete produced by two-stage mixing approach", **Journal of Building Engineering, Elsevier, 87, 109126, DOI:** 10.1016/j.jobe.2024.109126.
6. Ranjan, N., Banerjee, S., **Nayak, S.** and Das, S. **(2024),** "Seismic safety evaluation of coir and nylon fiber-reinforced masonry building models subjected to bi-axial shaking table test", **Journal of Building Engineering, Elsevier, 85, 108767, DOI:** 10.1016/j.jobe.2024.108767.
7. Sarkar, S., Chakraborty, S. and **Nayak, S. (2024),** "ANN-based axial strength prediction of short columns with double and bar-reinforced concrete-filled steel tubes subjected to concentric and eccentric loading", **Arabian Journal for Science and Engineering, Springer, 49, 4947–4968, DOI:** 10.1007/s13369-023-08285-8.
8. Mokal, M. P., Mandal, R., **Nayak, S.** and Panda, S. K., **(2023),** "Efficacy of high-volume fly ash and slag on the physicomechanical, durability, and analytical characteristics of high-strength mass concrete", **Journal of Building Engineering, Elsevier, 76, 107295, DOI:** 10.1016/j.jobe.2023.107295.
9. Mokal, M. P., Mandal, R., **Nayak, S.** and Panda, S. K., **(2023),** "Impact of slag-fly ash cementitious system on thermal controls and durability of high-strength mass concrete", **Structural Concrete, Wiley, 24(5), 6778-6797, DOI:** 10.1002/suco.202300197.
10. Mandal, R., Panda, S. K. and **Nayak, S. (2023),** "Rheology of concrete: critical review, recent advancements, and future prospectives", **Construction and Building Materials, Elsevier, 392, 132007, DOI:** 10.1016/j.conbuildmat.2023.132007.
11. Ranjan, N., Banerjee, S., **Nayak, S.** and Das, S. **(2023),** "Exploring applicability of recycled nylon fiber reinforced mortar in joints and plaster to enhance the bond strength, in-plane and out-of-plane capacity of masonry structures", **Journal of Building Engineering, Elsevier, 72, 106744, DOI:** 10.1016/j.jobe.2023.106744.
12. Ranjan, N., Banerjee, S., **Nayak, S.** and Das, S. **(2023),** "Waste polyethylene terephthalate (PET) fiber reinforced mortar in enhancing the bond behavior of masonry", **Structures, Elsevier, 53, 908-923, DOI:** 10.1016/j.istruc.2023.04.097.
13. Sarkar, S., Chakraborty, S. and **Nayak, S. (2023),** "Identification of optimum reinforcement detailing using tuned CDP parameters in RC beam under drop-weight impact", **Engineering Failure Analysis, Elsevier, 146, 107116, DOI:** 10.1016/j.engfailanal.2023.107116.

14. Ranjan, N., Banerjee, S., **Nayak, S.** and Das, S. **(2023),** "Agro-waste fiber reinforced mortar for augmenting the performance of masonry structures", **Construction and Building Materials, Elsevier, 363, 129848, DOI:** 10.1016/j.conbuildmat.2022.129848.

15. Mandal, R., Panda, S. K., Kisku, N., Rajhans, P., Banerjee, S. and **Nayak, S. (2023)**, "Improvement of shear capacity of RAC beams by adopting identical mortar volume method of mix-design along with dual-stage mixing approach", **European Journal of Environmental and Civil Engineering, Taylor & Francis, 27(3), 1429-1445, DOI:** 10.1080/19648189.2022.2083023.

16. Mandal, R., Panda, S. K., **Nayak, S.** and Chakraborty, S. **(2022),** "Efficacy of pond ash (PA) combined with ground granulated blast furnace slag (GGBFS) in producing cement-less mortar", **Structures, Elsevier, 45, 748-757, DOI:** 10.1016/j.istruc.2022.09.060.

17. Ranjan, N., Banerjee, S., **Nayak, S.** and Das, S. **(2022),** "Efficacy of waste plastic towards enhancement of shear and flexure carrying capacity of masonry structures", **Journal of Cleaner Production, Elsevier, 365, 132669, DOI:** 10.1016/j.jclepro.2022.132669.

18. Mohanty, M., Mohapatra, S. S. and **Nayak, S. (2022),** "Efficacy of C&D waste in base/subbase layers of pavement - current trends and future prospectives: a systematic review", **Construction and Building Materials, Elsevier, 340, 127726, DOI:** 10.1016/j.conbuildmat.2022.127726.

19. Banerjee, S., **Nayak, S.** and Das, S. **(2021),** "Adjudging efficacy of geonet reinforcement on the seismic performance of brick masonry structures: an experimental study", **Materials and Structures**, **Springer**, **54(6):213, DOI:** 10.1617/s11527-021-01805-8.

20. Banerjee, S., **Nayak, S.** and Das, S. **(2021),** "Seismic performance enhancement of masonry building models strengthened with the cost-effective materials under bi-directional excitation", **Engineering Structures, Elsevier, 242, 112516**, **DOI:** 10.1016/j.engstruct.2021.112516.

21. Kisku, N., Rajhans, P., Panda, S. K., **Nayak**, **S.,** Pandey, V. **(2020),** "Development of durable concrete from C&D waste by adopting identical mortar volume method in conjunction with two-stage mixing procedure", **Construction and Building Materials, Elsevier, 256, 119361, DOI:** 10.1016/j.conbuildmat.2020.119361.

22. Banerjee, S., **Nayak, S.** and Das, S. **(2020),** "Augmenting the seismic performance of masonry models using polypropylene band and steel wire mesh through shaking table testing", **Structures, Elsevier, 26, 340-347, DOI:** 10.1016/j.istruc.2020.04.027.

23. Banerjee, S., **Nayak, S.** and Das, S. **(2020),** "Improving the in-plane behavior of brick masonry wallet using PP band and steel wire mesh", **Journal of Materials in Civil Engineering, ASCE, 32(6): 04020132, DOI:** 10.1061/(ASCE)MT.1943-5533.0003159.

24. Banerjee, S., **Nayak, S.** and Das, S. **(2020),** "Shear and flexural behaviour of unreinforced masonry wallet with steel wire mesh", **Journal of Building Engineering, Elsevier, 30, 101254, DOI:** 10.1016/j.jobe.2020.101254.

25. Gupta, P. K., Rajhans, P., Panda, S. K., **Nayak**, **S.** and Das, S. K. **(2020),** "Mix design method for self compacting recycled aggregate concrete and its microstructural investigation by considering adhered mortar in aggregate", **Journal of Materials in Civil Engineering, ASCE, 32(3): 04019371**, **DOI:** 10.1061/(ASCE)MT.1943-5533.0003014.

26. Kisku, N., Rajhans, P., Panda, S. K., Pandey, V., **Nayak**, **S. (2020),** "Microstructural investigation of recycled aggregate concrete produced by adopting equal mortar volume method along with two stage mixing approach", **Structures, Elsevier, 24, 742-753, DOI:** 10.1016/j.istruc.2020.01.044.

27. Rajhans, P., Kisku, N., **Nayak**, **S.** and Panda, S. K. **(2020),** "Sustainable self compacting acid and sulphate resistance RAC by two stage mixing approaches", **Advances in Concrete Construction, Techno Press, 9(1), 55-70, DOI:** 10.12989/ acc.2020.9.1.055.

28. Rajhans, P., Chand, G., Kisku, N., Panda, S. K. and **Nayak**, **S. (2019), "**Proposed mix design method for producing sustainable self compacting heat cured recycled aggregate concrete and its microstructural investigation**"**, **Construction and Building Materials, Elsevier, 218**, **568-581, DOI:** 10.1016/j.conbuildmat.2019.05.149.

29. Rajhans, P., Gupta, P. K., Ranjan, R. K., Panda, S. K. and **Nayak**, **S. (2019),** "EMV mix design method for preparing sustainable self compacting recycled aggregate concrete subjected to chloride environment", **Construction and Building Materials, Elsevier, 199**, **705-716, DOI:** 10.1016/j.conbuildmat.2018.12.079.

30. Banerjee, S., **Nayak, S.** and Das, S. **(2019),** "Enhancing the flexural behaviour of masonry wallet using PP band and steel wire mesh", **Construction and Building Materials, Elsevier, 194**, **179-191, DOI:**10.1016/j.conbuildmat.2018.11.001.

31. Heydariha, J. Z., Ghaednia, H., **Nayak, S.**, Das, S., Bhattacharya, S. and Dutta, S. C. **(2019),** "Experimental and field performance of PP band-retrofitted masonry: evaluation of seismic behavior", **Journal of Performance of Constructed Facilities, ASCE, 33(1): 04018086, DOI:** 10.1061/(ASCE)CF.1943-5509.0001233.

32. Rajhans, P., Panda, S. K. and **Nayak**, **S. (2018), "**Sustainability on durability of self compacting concrete from C&D waste by improving porosity and hydrated compounds: A microstructural investigation", **Construction and Building Materials, Elsevier, 174**, **559–575, DOI:** 10.1016/j.conbuildmat.2018.04.137.

33. Rajhans, P., Panda, S. K. and **Nayak**, **S. (2018),** "Sustainable self compacting concrete from C&D waste by improving the microstructures of concrete ITZ", **Construction and Building Materials, Elsevier, 163**, **557-570, DOI:** 10.1016/j.conbuildmat.2017.12.132.

34. Kisku, N., Joshi, H., Ansari, M., Panda, S. K., **Nayak**, **S.** and Dutta, S. C. **(2017),** "A critical review and assessment for usage of recycled aggregate as sustainable construction material", **Construction and Building Materials, Elsevier, 131**, **721-740, DOI:** 10.1016/j.conbuildmat.2016.11.029.

35. **Nayak**, **S.** and Dutta, S. C. **(2016),** "Improving seismic performance of masonry structures with openings by polypropylene bands and L-shaped reinforcing bars", **Journal of Performance of Constructed Facilities, ASCE, 30 (2): 04015003**, **DOI:** 10.1061/(ASCE)CF.1943-5509.0000733.

36. Dutta, S. C., **Nayak**, **S.**, Acharjee, G., Panda, S. K. and Das, P. K. **(2016),** "Gorkha (Nepal) earthquake of April 25, 2015: Actual damage, retrofitting measures and prediction by RVS for a few typical structures", **Soil Dynamics and Earthquake Engineering, Elsevier**, **89, 171-184, DOI:** 10.1016/j.soildyn.2016.08.010.

37. **Nayak**, **S.** and Dutta, S. C. **(2016),** "Failure of masonry structures in earthquake: a few simple cost effective techniques as possible solutions", **Engineering Structures, Elsevier, 106, 53-67, DOI:** 10.1016/j.engstruct.2015.10.014.

38. Revanth D., Akshay B., **Nayak**, **S.** and Dutta, S. C. **(2016),** "Improving resistance of masonry structures to tsunami loading", **Journal of The Institutions of Engineers (India): Series A, Springer, 97(2)**, **133-145, DOI:** 10.1007/s40030-016-0155-1.

39. Dutta, S. C., Mukhopadhyay, P., Saha, R. and **Nayak**, **S. (2015),** "2011 Sikkim Earthquake at Eastern Himalayas: Lessons learnt from performance of structures", **Soil Dynamics and Earthquake Engineering, Elsevier, 75, 121-129, DOI:** 10.1016/j.soildyn.2015.03.020.

40. **Nayak, S.**, Reddy, M. H. O., Madhavi, R. and Dutta, S. C. **(2014),** "Assessing tsunami vulnerability of structures designed for seismic loading", **International Journal of Disaster Risk Reduction, Elsevier, 7, 28-38, DOI:** 10.1016/j.ijdrr.2013.12.001.

41. Bhattacharya, S., **Nayak**, **S.** and Dutta, S. C. **(2014),** "A critical review of retrofitting methods for unreinforced masonry structures", **International Journal of Disaster Risk Reduction, Elsevier, 7**, **51-67, DOI:** 10.1016/j.ijdrr.2013.12.004.

42. Dutta, S. C., **Nayak**, **S.** and Dinakar, P. **(2014),** "Lateral period and seismic vulnerability of masonry building", **Structures and Buildings, ICE Publishing, 167**, **SB11**, **633–645, DOI:** 10.1680/stbu.12.00043.

43. **Nayak**, **S.,** Dutta, S. C. and Dinakar, P. **(2012),**"Dynamic characteristics of masonry walls", **The IUP Journal of Structural Engineering, 5(1), 33-53.**

Conferences [11]

1. Mandal, R., Panda, S. K., **Nayak, S. (2023)**, "Rheology of self-compacting concrete: A critical review and future perspective", ***International UKIERI Concrete Congress, 14th - 17th March 2023, Paper ID: UCC-2023-403, NIT Jalandhar***.

2. Mandal, R., Panda, S. K., **Nayak, S. (2023)**, "Evaluation of the rheological properties of self-compacting recycled aggregate concrete", ***International UKIERI Concrete Congress, 14th - 17th March 2023, Paper ID: UCC-2023-404, NIT Jalandhar***.

3. Mokal, M. P., Mandal, R., **Nayak, S.,** Panda, S. K., **(2023)**, "Efficacy of fly ash and slag in controlling the heat of hydration, strength, and durability of mass concrete", ***International Conference on Climate Resilient Construction and Building Materials (ICCRCBM – 2023), March 3rd – 5th, 2023, Paper ID: CRCBM_129, NIT Karnataka, Surathkal.***

4. Kumar, P. Banerjee, S. and **Nayak, S. (2019)**, "Seismic vulnerability assessment of masonry structures: A computational approach", ***The Sixteenth International Conference on Civil, Structural & Environmental Engineering Computing & Fifth International Conference on Soft Computing & Optimisation in Civil, Structural and Environmental Engineering***, ***16th - 19th September, 2019***, **Riva del Garda, Lake Garda**, **Italy**.

5. Banerjee, S., **Nayak, S.**, Das, S. **(2018)**, "Cost effective retrofitting techniques for enhancing seismic behaviour of unreinforced masonry buildings", ***16SEE, 20-22nd December, 2018, IIT Roorkee***, Uttarakhand, India, Paper No. 92.

6. Banerjee, S., **Nayak, S.**, Das, S. **(2018)**, "Experimental study on in-plane behaviour of masonry wall strengthened with steel wire mesh", ***SEC-2018, 19-21st December, 2018, Jadavpur University,*** West Bengal, India.

7. **Nayak, S.,** Banerjee, S. and Das, S. **(2018)**, "Augmenting out-of-plane behaviour of masonry wallet using PP-band and steel wire mesh", ***14th International Conference on Concrete and Technology (CONCET- 2018)***, ***8th to 9th August, 2018, University of Malaya, Kuala Lumpur, Malaysia,*** **IOP Conf. Series: Materials Science and Engineering 431 (2018) 072003, DOI: 10.1088/1757-899X/431/7/072003**.

8. Banerjee, S., **Nayak, S.** and Das, S. **(2018),** "Enhancing shear capacity of masonry wallet using PP-band and steel wire mesh", ***14th International Conference on Concrete and Technology (CONCET- 2018)***, ***8th to 9th August, 2018, University of Malaya, Kuala Lumpur, Malaysia,*** **IOP Conf. Series: Materials Science and Engineering 431 (2018) 072004, DOI: 10.1088/1757-899X/431/7/072004.**

9. **Nayak**, **S.,** Dutta, S. C. and Dinakar, P.**(2013)**, "Seismic behaviour of masonry walls with and without openings" ***IWMSID, 7th-9th February,2013, SIF, IIT Bhubaneswar***, Bhubaneswar, Odisha.

10. **Nayak**, **S.,** Kumar, V., Jindal, M., Dutta, S. C. and Dinakar, P. **(2012)**, *"*Prediction of lateral strength of masonry walls*"* ***9thCUEE and 4th ACEE, 6th-8thMarch, 2012, Tokyo, Japan, 2012, Paper ID: 07-141.***

11. Parhi, P. K. and **Nayak**, **S. (2009)**, "Free vibration analysis of delaminated composite structures by finite element method", ***Proceeding-Golden Jubilee Session, Institution of Engineers, 8thFeb 2009, Bhubaneswar.***

R&D Projects Ongoing/Completed:

1. **Title of Project:** Cost-effective Safety Solution for Low-rise Masonry Dwellings Subjected to Rock Fall Impact Induced by Landslides: Laboratory Testing, Field Demonstration and Development of Guidelines for Hilly Regions.
   Amount: **Rs. 49,00,000/-**
   Funding Agency: National Mission on Himalayan Studies (NMHS), Ministry of Environment, Forest & Climate Change (MoEF&CC).
   Duration: 3 Years
   PI: **Dr. Sanket Nayak**.
   Status: **Ongoing [SRDP 1149 G].**

2. **Title of Project:** To Strengthen the Research Facilities in the Department of Civil Engineering.
   Amount: **Rs. 1,91,00,000/-**
   Funding Agency: DST (FIST)
   Duration: 5 Years
   PI: Prof. S. K. Das, Dept. of Civil Engineering.
   Co-PI: **Dr. Sanket Nayak**
   Status: **Ongoing [DST(FIST)(261)/2020-2021/741/CE].**

3. **Title of Project:** Benefits of Composite Cement over OPC and PSC in Terms of Strength and Durability.
   Amount: **Rs. 6,00,000/-**
   Funding Agency: OCL India Limited
   Duration: 2 Years
   PI: **Dr. Sanket Nayak**.
   Co-PI: Dr. Smruti Sourava Mohapatra, Dept. of Civil Engineering
   Status: **Completed [OCL/2018-2019/591/CE].**

4. **Title of Project:** Low-cost Sustainable Approach of Improving Lateral Load Resisting Capacity of Unreinforced Masonry Structures.
   Amount: **Rs. 23,76,000/-**
   Funding Agency: Young Scientist, Start-up Research Grant **(SERB, DST)**
   Duration: 3 Years
   PI: **Dr. Sanket Nayak.**
   Co-PI: NIL
   Status: **Completed [DST(SERB)(136)/2015-2016/460/Civil Engg.].**

5. **Title of Project:** Constructing Structure on Backfilled Open Cast Coal Mines: An Attempt to Suggest Viable Methodologies.
   Amount: **Rs. 3,04,12,000/-**
   Funding Agency: Coal India Limited, Ministry of Coal
   Duration: 3 Years
   PI: Prof. S. C. Dutta, Dept. of Civil Engineering.
   Co-PI: **Dr. Sanket Nayak**
   Status: **Completed [MOC(2)/2015-2016/449/CE].**

6. **Title of Project:** Investigation on Mechanical and Durability Properties of Self Compacted Concrete Prepared with Recycled Coarse Aggregate from C&D Waste.
   Amount: **Rs. 18,93,600/-**
   Funding Agency: Housing and Urban Development Corporation (**HUDCO**)
   Duration: 3 Years
   PI: Dr. Sarat Kumar Panda, Dept. of Civil Engineering.
   Co-PI: **Dr. Sanket Nayak**
   Status: **Completed [HUDCO(1)/2015-2016/436/CE].**

7. **Title of Project:** Assessment and Improvement of Lateral Load Resisting Capacity of Fly Ash Brick Made Masonry Structures.
   Amount: **Rs. 8,80,000**/-
   Funding Agency: **FRS (ISM)**
   Duration: 3 Years
   PI: **Dr. Sanket Nayak**
   Co-PI: Nil
   Status: **Completed [FRS(78)/2014-2015/CE].**

Major Consultancy Projects:

1. Name of the Work: **Structural Safety and Disability Audit of Hospital Buildings and Residential Quarters at ESIC Hospital Campus Maithon, Dhanbad, Jharkhand.**
   Client: Employees State Insurance Corporation, Ranchi
   Role: CI
   Status: **Completed**.

2. Name of the Work: **Vulnerability Assessment of Different Structures of Koyla Bhawan at Koyla Nagar, BCCL, Dhanbad.**
   Client: BCCL, Dhanbad.
   Role: CI
   Status: **Completed**.

3. Name of the Work: **Checking of Structural Design and Drawing of Railway Over Bridges.**
   Client: NHAI, Ranchi.
   Role: CI
   Status: **Completed**.

4. Name of the Work: **Proof checking of structural design and drawings for G+2 Running Room Building to be constructed at Tundla, Agra.**
   Client: Designers Forum, Bhubaneswar.
   Role: CI
   Status: **Completed**.

5. Name of the Work: **Earthquake Structural Stability Tests of Buildings of RBI Patna.**
   Client: Reserve Bank of India (RBI), Patna
   Role: Co-CI
   Status: **Completed**.

Membership of Professional Societies:

1. American Society of Civil Engineers (ASCE), Grade: Member
2. The Indian Society for Technical Education (ISTE), Grade: Life Member
3. The Institution of Engineers (India), Grade: Member
4. Indian Society of Earthquake Technology (ISET), Grade: Life Member
5. Indian Concrete Institute, Grade: Life Member

Reviewer of Journals and Project Proposals:

- Acted as reviewers for many Journals and Project Proposals of SERB, DST, and Mitacs.

Outreach Activities Organized:

- **Development of Cement Technology for Sustainable Infrastructure,** during 22nd -24th February, 2019, at Indian Institute of Technology (Indian School of Mines), Dhanbad, as **Coordinator**.
- **Advances in Structural and Geotechnical Engineering (ASGE)**, during 5th-9th June, 2018, at Indian Institute of Technology (Indian School of Mines), Dhanbad, as **Coordinator**.
- **Advances in Civil Engineering (ACE)**, during 6th-8th April, 2018, at Indian Institute of Technology (Indian School of Mines), Dhanbad, as **Coordinator**.
- **Sustainable Infrastructure**, during 8th-10th January, 2016 at Indian Institute of Technology (Indian School of Mines), Dhanbad, as one of the Coordinators.

Administrative Responsibilities:

- **Chairman, Project Monitoring Committee,** from October, 2024 to till date.
- **Chief Warden, Emerald Hostel,** from July, 2023 to June 2024.
- **Warden, Emerald Hostel,** from July, 2021 to June 2023.
- **Convener, DPGC, Dept. of Civil Engineering**, from October, 2020 to October, 2022.
- **Member, Institution's Innovation Council (IIC) 3.0,** from October, 2020 to September, 2022.
- **Member, Dean's Advisory Council (Academic),** from September, 2019 to August, 2021.
- **Coordinator M. Tech.** in **Structural Engineering,** from July, 2017 to October, 2020.
- **FIC, Concrete Laboratory**, from July, 2017 to July, 2021.