Curriculum Vitae

1. **Name: Dr. Satyajit Patel**
2. **Gender: Male**
3. **Date of Birth :** 28th Dec. 1979
4. **Designation & Affiliation:**

Associate Professor,
Department of Civil Engineering,
SVNIT, Ichchhanath, Surat-395007

5. **Area of Research Interest**

Utilization of Industrial solid wastes in Civil Engineering Constructions, Geo-environmental Issues, Soil stabilization, Ground improvement, Geo-synthetics for road pavements.

6. **Phone Numbers** **:** +91-9714740022
7. **E-mail ID** **:** spatel@amd.svnit.ac.in, satya24may@gmail.com

8. **Qualifications (**starting from University Level**)**

Degree	**Institution**	**Year**	**Research Topic**
Ph. D. (Geotechnical Engg.)	IIT Delhi	2016	Experimental and numerical studies on utilization of some industrial wastes in flexible road pavements
M. Tech. (Geotechnical Engg.)	NIT, Rourkela	2005	Studies on strength and water absorption characteristics of FAL–G blocks
B. E. (Civil Engg.)	REC, Nagpur	2002	--

9. **Employment Experience**

Sr.No.	**Position and Organization**	**Nature of Job**	**Period**
1	Associate Professor S. V. National Institute of Technology, Surat	Teaching and research	28/01/2019 to till date
2	Assistant Professor S. V. National Institute of Technology, Surat	Teaching and research	20/08/2007 to 27/01/2019
3	Lecturer, Padmanava College of Engineering, Rourkela, Orissa	Teaching and research	13/03/2006 to 30/05/2007

10. Patent granted/filed:

Sr. No.	Name of Patentee	Patent Details
1	Dr. Satyajit Patel Dr. Deepti Patel	Title of Patent: A method for producing angular shaped fly ash aggregate. Patent No. 362571 granted on 23rd March, 2021.
2	SVNIT Surat. NTPC, Noida.	Title of Patent: Low Calcium Fly Ash Based Angular Shaped Aggregate and Method for Producing the same. Patent No. 457555 granted on 9th October, 2023

11. List of Publications

11.1 International Journals

1. Shahane, H. A., Patel, S., & Rathod, G. W. (2025). Characterization and Performance Evaluation of Angular-Shaped Fly Ash Aggregates for Pavement Base and Subbase Applications. *Journal of Transportation Engineering, Part B: Pavements*, ASCE, *151*(2), 04025024.
2. Kedar, H. N., & Patel, S. (2025). Optimization and characterization of lime and GGBS treated fly ash for sustainable road pavement applications. *Multiscale and Multidisciplinary Modeling, Experiments and Design*, *8*(1), 1-14.
3. Shahane, H. A., & Patel, S. (2024). Comparative environmental life cycle assessment of artificial fly ash aggregates and natural aggregate production in India. *Innovative Infrastructure Solutions*, *9*(3), 69.
4. Singh, S., Patel, S. (2024), "Characterization and performance evaluation of eco-friendly angular-shaped fly ash aggregates as base material in pavement construction under cyclic and shear loading." Journal of Materials in Civil Engineering, ASCE DOI:10.1061/ JMCEE7/MTENG-18052.
5. Kedar, H. N., & Patel, S. (2024). Effect of hydraulic binders on engineering properties of coal ash for utilization in pavement layers. *Clean Technologies and Environmental Policy*, 1-19.
6. Kedar, H. N., Patel, S., & Shirol, S. S. (2024). Bulk utilization of steel slag–fly ash composite: a sustainable alternative for use as road construction materials. *Innovative Infrastructure Solutions*, *9*(1), 21.

7. Singh, S., & Patel, S. (2024). Effect of Crushing Process Parameters on Quality of Fly Ash Aggregates Produced After Crushing High Strength Fly Ash Blocks: A Laboratory Investigation. *International Journal of Engineering*, *37*(3), 511-9.
8. Joshi, A. R., & Patel, S. (2024). Fly ash blended with lime and GGBFS as sustainable subbase material: strength, durability, and microstructure assessment. *Innovative Infrastructure Solutions*, *9*(1), 7.
9. Kedar, H. N., & Patel, S. (2023). Complete replacement of granular base layer with stabilized fly ash for road construction. *Indian Geotechnical Journal*, 1-15.
10. Singh, S., S., Patel, (2023), "Development of angular-shaped lightweight coarse aggregate with low calcium fly ash using autoclave curing- experimental and microstructural study." *Journal of Building Engineering, Elsevier.* DOI: 10.1016/j.jobe.2023.107860.
11. Joshi, A. R. and Patel, S. (2023), "Application of Class C fly ash and quarry dust mix for utilization as subbase materials in flexible pavement." *International Journal of Engineering, IJE Transactions C: Aspects* Vol. 36 No. 09, Page No. 1597-1604. DOI: 10.5829/ije.2023.3609c.02
12. Singh, S., S., Patel, (2023), "Potential use of fly ash for developing angular-shaped aggregate." *International Journal of Engineering, IJE Transactions C: Aspects* Vol. 36 No. 06, Page No. 1114-1120. DOI: 10.5829/ije.2023.36.06c.09
13. M., D., Bakare, J., T., Shahu, S., Patel, (2023), "Stress-dependent behaviour of lightly stabilized industrial waste subbase using Falling Weight Deflectometer." *Geotechnical Testing Journal, ASTM*. DOI: 10.1520/GTJ20220283
14. Barmade, S., Patel, S. and Dhamaniya, A. (2023), "Evaluating the Structural Performance of Stabilized Expansive Soil as Subbase Layer for Sustainable Pavements." *International Journal of Geosynthetics and Ground Engineering, Springer* Vol. 9(23). https://doi.org/10.1007/s40891-023-00440-3
15. M., D., Bakare, J., T., Shahu, S., Patel, (2023), "Complete substitution of natural aggregates with industrial wastes in road subbase: A field study." Resources, Conservation and Recycling, Elsevier, Volume 190. DOI – https://doi.org/10.1016/j.resconrec.2022.106856
16. Rahul R., Pai, S., Patel, J., T., Shahu, (2022), "Fatigue Response of Industrial Waste Mixes for Use as Cemented Base Materials in Flexible Pavement". *International Journal*

of Geosynthetics and Ground Engineering, Springer. https://doi.org/10.1007/s40891-022-00407-w

17. Joshi, A. R. and Patel, S. (2022). "Investigation into sustainable application of class C fly ash layer in flexible pavement." *Journal of Hazardous, toxic and radioactive waste, ASCE.* 10.1061/(ASCE)HZ.2153-5515.0000727
18. Deshmukh, R. R., Patel, S. and Shahu, J. T. (2022). "Full-Scale Field Performance of Geocell Reinforced-Fly Ash in the Subbase Course of Flexible Pavement." *International Journal of Geosynthetics and Ground Engineering, Springer*. https://doi.org/10.1007/s40891-022-00383-1.
19. Barmade, S., Patel, S. and Dhamaniya, A. (2022). "Laboratory and field evaluation of stabilized fly ash as an alternative material for sustainable pavements." *Journal of Hazardous, Toxic, and Radioactive Waste, ASCE.*
20. Pai, R. R., Bakare, M. D., Patel, S. and Shahu, J. T. (2022). "Asserting the applicability of copper slag and fly ash as cemented base materials in flexible pavement from a full-scale field study," *Journal of Materials in Civil Engineering, ASCE*, 10.1061/(ASCE)MT.1943-5533.0004123. Vol. 34(4) JAN 2022
21. Shahane, H. A., Patel, S., (2022) "Influence of design parameters on engineering properties of angular shaped fly ash aggregates." *Construction and Building Materials, Elsevier.* Vol. 327, (April 2022), 126914 pp. 1-12.
22. Barmade, S., Patel, S., and Dhamaniya, A., (2022), "Performance Evaluation of stabilized reclaimed asphalt Pavement as Base Layer in Flexible Pavement." *Journal of Hazardous, Toxic, and Radioactive Waste,* ASCE. Vol 26(1) pp: 04021051(1-8).
23. Deshmukh, R., R., Patel, S., and Shahu, J., T., (2021) "Field assessment of improvement in composite modulus of geosynthetic-reinforced pavements." *Geosynthetics International* 28 (6), 624-633.
24. Shahane, H., A., Patel, S., (2021) "Influence of curing method on characteristics of environment-friendly angular shaped cold bonded fly ash aggregates", *Journal of Building Engineering, Elsevier* Vol. 35 (March 2021) pp. 1-12.
25. Pai, R. R., Bakare, M. D., Patel, S. and Shahu, J. T., (2021). "Structural evaluation of flexible pavement with steel slag-fly ash-lime in base layer," *Journal of Materials in Civil Engineering, ASCE,* 10.1061/ (ASCE) MT.1943-5533.0003711.

26. Pai, R. R., Patel, S., and Bakare, M. D. (2020). "Applicability of utilizing stabilized native soil as a subbase course in flexible pavement," *Indian Geotechnical Journal., Springer*, Vol. 50, No. 2, pp. 289-299, https://doi.org/10.1007/s40098-020-00432-4

27. Patel, D., Kumar, R., Chauhan, K. A. and Patel, S., 2019, "Experimental and modeling studies of resilient modulus and permanent strain of stabilized fly ash," *J. Materials in Civil Engg*., ASCE.Vol.31(8) pp. – 06019005(1-6)

28. Bakare, M. D., Pai, R. R., Patel, S. and Shahu, J. T., 2019, "Environmental sustainability by bulk utilization of fly ash and GBFS as road subbase materials," *Journal of Hazardous, Toxic, and Radioactive Waste, ASCE*. (May 2019)

29. Patel, D., Kumar, R., Chauhan, K. A. and Patel, S., 2019, "Using copper slag and fly ash stabilised with lime or cement as a road base material," *Proceedings of the Inst. of Civil Engineers - Construction Materials*. Volume 175 Issue 5, October, 2022, pp. 198-212 (April 2019)

30. Patel, S. and Shahu, J. T., 2018, "Comparison of Industrial Waste Mixtures for use in subbase course of flexible pavements," *J. Materials in Civil Engg*., *ASCE*, Vol. 30, No. 7, pp. 1-10.

31. Patel, S. and Shahu, J. T., 2017, "A comparative study of slags stabilized with fly ash and dolime for utilization in base course," *J. Materials in Civil Engg*., *ASCE*, Vol. 29, No. 10, pp. 1-8.

32. Patel, S. and Shahu, J. T., 2016, "Resilient response and permanent strain of steel slag-fly ash-dolime mix," *J. Materials in Civil Engg*., *ASCE*, Vol. 28, No. 10, pp. 1-11.

33. Anbazhagan, P., Bajaj, K. and Patel, S., 2015, "Seismic hazard maps and spectrum for Patna considering region-specific seismotectonic parameters," *Natural Hazards*, Vol. 78, pp. 1163–1195.

34. Patel, S. and Shahu, J. T., 2015, "Engineering properties of Black Cotton soil-dolime mix for its use as subbase material in pavements," *Int. J. of GEOMATE*, Vol. 8, No. 1, pp. 1159-1166.

35. Shahu, J. T., Patel, S. and Senapati, A., 2013, "Engineering properties of copper slag-fly ash-dolime mix and its utilization in base course of flexible pavements," *J. Materials in Civil Engg*., ASCE, Vol. 25, No. 12, pp.1871-1879.

11.2 Research Papers Presented Abroad

1. Patel, S., and Kedar, H.N., 2024, "Sustainable Enhancement of Flexible Pavements: Integrating Copper Slag and Fly Ash with Hydraulic binders," *5th International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering*, SGGW, Warsaw, Poland/ 4-6 July 2024.
2. Patel, S., Pai, R. R., Bakare, M. D. and Shahu, J. T., 2019, "Field evaluation of road pavement constructed with waste materials through nondestructive testing," *Int. Conference on Recent Advances in Materials & Manufacturing Technologies (IMMT) - Nov. 2019*, BITS-Pilani, Dubai Campus, UAE, Vol. 28 (2).
3. Patel, S., Joshi, A. and Sukumaran, S., 2018, "Comparison of bearing capacity improvement for soft clay using soil-lime and soil-cement columns," *Int. Conference GEOMATE-2018*, Kuala Lumpur, Malaysia, pp. 354-359.
4. Sanoop, G. and Patel, S., 2017, "Numerical Studies on Ground Improvement Using Geosynthetic Reinforced Sand Layer," *Int. Conference, GeoMEast*, Sharm El-Sheik, Egypt.
5. Patel, S., Reddy, L. M. and Chaudhary, P. M., 2016, "Feasibility of lime stabilized expansive soil as a subbase material for flexible pavements," *8th Int. Conference on Electrical, Electronics and Civil Engg*., Dubai, pp. 81-85.
6. Patel, S., Reddy, L. M. and Shahu, J. T., 2014, "Characteristics of lime stabilized expansive soil for construction of flexible pavements," *4th Int. Conference on Geotechnique, Construction Materials and Environment*, Brisbane, Australia, Vol. 4 (1), pp. 353-358.
7. Patel, S., Shahu, J. T. and Naik, T. R., 2014, "Feasibility of steel slag-fly ash-dolime mix as a base course material for flexible pavements," *9th International Symposium on Lowland Technology*, Saga, Japan, pp. 245-253.
8. Patel, S., Patel, D. and Savani, C., 2013, "Geotechnical properties of Black Cotton soil-EAF dust-dolime mix for use in subbase course of pavement," *International Conference on Computing, Engineering and Technology Sciences*, Bangkok.
9. Patel, S., Savani, C. and Senapati, A., 2010, "Stabilisation of Black Cotton soil using electric arc furnace dust and dolime," *International Congress of Environmental Research*, University of Mauritius, Mauritius.

12. Sponsored Projects completed as Principal Investigator

S. No	Title	Sponsoring Agency	Period	Amount *(in lakhs)*	Status
1.	Development of Carbon-Negative Fly Ash Brickand Fly Ash Aggregate	NTPC-NETRA Greater Noida	April 2024 to till date	54.28	Ongoing
2.	Performance evaluation of stabilized copper slag through laboratory and field tests for use as a road material	Hindalco Industries Ltd. (Unit: Birla Copper) Dahej, Dist. Bharuch	Sept 2023 to till date	23.74	Ongoing
3.	Development of angular shaped coarse aggregates from fly ash	NTPC-NETRA Greater Noida	June 2020 to Mar. 2022	22.53	Completed
4.	Performance and design evaluation of test tracks of flexible pavements with waste materials in subbase and base layers	DST, New Delhi	June, 2016 to June, 2020	161.15	Completed

13. Awards / Achievements

I. Received the best session paper award for the research paper entitled “Feasibility of lime stabilized expansive soil as a subbase material for flexible pavements” in the 8th Int. Conference on Electrical, Electronics and Civil Engg., Dubai, January, 2016.

II. My Ph.D. scholar “Sandeep Singh” was selected as the Runner-up of Model Presentation and Innovation Exhibit in the Research and Industrial Conclave Integration 2022, organized jointly by Indian Institute of Technology Guwahati and IIT Guwahati Research Park.

III. My Ph.D. scholar “Rohan Deshmukh” received 'iGrip-2023 Doctoral research award (Best Thesis Award)' during iGrip (Initiative for Geotechnical Research and Innovative Practices) conclave at Indian Institute of Technology Gandhinagar on 4th March 2023.

14. Ph.D. Guidance (completed): 08 Nos.

1. Rahul R Pai (2022): Performance and design evaluation of test tracks of flexible pavements with waste materials in base layers.
2. Hrishikesh A. Shahane (2023): Development of angular shaped cold-bonded fly ash aggregates and its characterization.
3. Satish S. Barmade (2023): Laboratory and field evaluation of stabilized waste materials for use in base and subbase layer of flexible pavement. (Co-guide)
4. Rohan R. Deshmukh (2023): Field evaluation of geosynthetic-reinforced flexible pavement.
5. Mayuresh Bakare (Thesis submitted at IIT, Delhi) (2024): Performance and design evaluation of test tracks of flexible pavements with waste materials in subbase layers. (Co-guide).
6. Amruta Joshi (2024): Experimental and numerical studies on feasibility of Class-C fly ash for use as a construction material.
7. Sandeep Singh (2025): Utilization of angular shaped fly ash aggregate in road construction.
8. Hrushikesh Kedar (2025): Stabilization of Coal ash and Industrial slags for use in base and subbase layer of Road Pavements.

15. Ph.D. Guidance (in progress): 06 Nos.

1. Karan B. Mistry (in progress): Ground improvement using deep soil mixing technique.
2. Sunila Gadi (in progress): Field Performance evaluation of road pavement resting on fly ash-lime columns.
3. Grishma Thakker (in progress): Potential use of fly ash aggregates in construction.
4. Abhilasha Senapati (in progress): Performance evaluation of geosynthetic reinforced flexible road pavement under cyclic loading conditions.
5. Kapil Kumar Gautam (in progress): Development and characterization of carbon negative bricks and aggregates from fly ash for sustainable construction.
6. Ashvini Mehta (in progress): Research topic yet to be finalized.

16. M.Tech. Guidance (in progress): 01 Nos.

17. M.Tech. Guidance (completed): 46 Nos.

1. Maharshi Salvi (2024): Stabilisation of Fly Ash Aggregate for Use in the Base and Subbase Layer of Road Pavement and Introduction to MRPAVE.
2. Dayanand Prakash (2024): Application of Coal Ash as Embankment Fill and Landfill Liner.
3. Sandesh Sidramappa Shirol (2023): Experimental and Numerical Investigation on use of Stabilized Industrial Slags as a Replacement of Granular and DLC layer of Road Pavement
4. Youven Jain (2023): Effect of Carbonation and addition of GGBS on Engineering properties of coarse aggregate developed from low-calcium fly ash
5. Rajat Rathore (2023): Stabilization of Coal ash with GGBS and Alkaline activator for use as a Road Material of Flexible and Rigid pavement.
6. Shaikh Mohammad Faiz (2022): Numerical study on uplift capacity of anchor plate placed below reinforced soil.
7. Pavan Kumar Bellamkonda (2022): Behavior of nailed slope under static and seismic condition.
8. Divyanshi Dutt (2022): Experimental and numerical studies on various types of soil stabilized with lime and GGBS.
9. Kalyaani S. Kkoli (2021): Analysis of jet grouted column by analytical and theoretical method.
10. Saurabh Kumar Mishra (2021): Numerical studies on improvement of soil using deep soil mixing method.
11. Roshani A. Patel (2021): Evaluation of clay-fly ash-lime mixture as liner material in landfill using multi-criteria decision making (MCDM) models.
12. Rohit Baranwal (2020): Numerical Studies on Behavior of Road Pavement Resting on Stone Columns under Static Loading.
13. Ritesh Bhojne (2020): Stabilization of Expansive Soil Using Artificial Sand and Construction & Demolition Waste.
14. Aditi Karande (2020): Performance evaluation of flexible pavement resting on fly ash-lime columns under static load through numerical studies.
15. Sayali S. Gosavi (2019): Experimental studies on Class- C fly ash for use as a replacement of dry lean concrete layer of rigid road pavements.
16. Sreelakshmi N. (2019): Numerical study on utilization of fly ash as backfill material in reinforced earth walls.

17. Revathy Manohar (2019): Experimental and numerical studies on stabilized Class-F fly ash for application in flexible road pavements.
18. Vaibhav Kumar Singh (2018): Experimental Studies on Compressive Strength of Fly Ash-Lime- GGBS-Gypsum Mix Subjected to Different Curing Condition.
19. Ravi Shankar (2018): Experimental Studies on Compressive Strength of Alkali Activated Fly Ash Subjected to Different Curing Condition.
20. Krishnaveni E P (2018): Experimental and Numerical Studies on Feasibility of Corex Plant Sludge for Use as a Road Material.
21. Gayathri Nair G R (2018): Experimental and Numerical Studies on Black Cotton Soil Stabilized with Class Fly Ash for Use in Flexible Road Pavement.
22. Krishnapriya P.R. (2017): Experimental studies on Black Cotton soil stabilized with MgO activated GGBS.
23. Prafful Ramola (2017): Numerical modeling and analysis of isolated square footing on reinforced sand.
24. Swathi N.P (2017): Experimental studies on expansive soils stabilized by GGBS and lime.
25. Vishnu K. (2017): Numerical studies on bearing capacity improvement of soft clay using stone columns.
26. Mariya Dayana P J (2016): Experimental and numerical studies on replacement of lime with GGBS for use of copper slag-fly ash-lime mixes as a road base material.
27. R. Chandra Shekhar (2016): Experimental and numerical studies on bearing capacity improvement of soft clay using soil-lime and soil-cement group columns.
28. Renjith R. (2016): Intensity attenuation based seismic hazard analysis.
29. Sanoop G (2016): Experimental and numerical studies on bearing capacity improvement of clayey soils using geosynthetic reinforced sand layer.
30. Rahul R Pai (2015): Experimental and numerical studies on chemically stabilized Black Cotton soil for use as a subbase course in flexible pavements.
31. S. Eswara Rao (2015): Experimental studies on effect of fines content on liquefaction properties of sand.
32. Shravan Sukumar (2015): Experimental and numerical studies on bearing capacity improvement of soft clay using soil-lime and soil-cement columns.
33. Vilbin Varghese (2015): Experimental studies on factors affecting shear modulus and damping ratio of silty sand using cyclic triaxial test.

34. Bhavik M. Vyas (2014): Geotechnical factors influencing the behaviour of different types of subgrades under cyclic loading conditions.
35. Ketan Bajaj (2014): Seismic hazard mapping of Patna city.
36. Levaku Manohar Reddy (2014): Behaviour of lime and fly ash stabilised clayey subgrade under cyclic loading conditions.
37. Sadanand Kumar Prasad Sahu (2014): Strength and durability assessment of copper slag and fly ash mix as a base material. (Co-guide)
38. Anubhuti Mishra (2013): Factors affecting strength and stiffness characteristics of fly ash-lime mix for use as a base material of flexible pavements.
39. Bilesh Gandhi (2013): Effect of dry density and curing on strength and stiffness characteristics of copper slag - fly ash - lime mixture.
40. Pradeep Kumar Pandey (2013): Geotechnical properties of steel slag–fly ash-lime mixture for its use as pavement material.
41. Sali Augustine K. (2012): Utilization of blast furnace slag-fly ash-dolime mix in base course of flexible pavement and its cost effectiveness.
42. Satish S. Barmade (2012): Stabilization of fly ash with dolime and GBFS for use in subbase layer of flexible pavements and its cost effectiveness.
43. Abhilasha Senapati (2011): Studies on geotechnical properties of copper slag - fly ash - dolime mix for use in pavement construction.
44. Trupti Rekha Naik (2011): Studies on geotechnical properties of steel slag- fly ash-dolime mix for use in pavement construction.
45. Savani Chandresh (2010): Studies of geotechnical properties of Black Cotton soil stabilized with furnace dust and dolomitic lime.
46. Sowmya V. Krishnankutty (2010): Strengthening of slope and retention of earth.

18. Member of Technical Societies

Life Member (No. LM-3270) of Indian Geotechnical Society, New Delhi.

Member (No. M-154361-4) of Institution of Engineers, Kolkata.

Life Member (No. eLM-101525) of Indian Roads Congress, New Delhi.