

CURRICULAM VITAE

1. NAME : MARIYA DAYANA P J

2. DESIGNATION : Scientist

3. OFFICE ADDRESS : Geotechnical Engineering Division
CSIR-Central Road Research Institute
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4. AREAS OF INTEREST : Landslide investigation, Ground improvement techniques, Slope stabilisation, Reinforced slope, Geotechnical investigations, Foundation design

5. EDUCATIONAL QUALIFICATION

Degree	Year	University/ Institute	Subject	CGPA / %
MTech	2016	SVNIT Surat	Soil Mechanics and Foundation Engineering	9.90 / 10
BTech	2014	College of Engineering Trivandrum	Civil Engineering	8.66 / 10
HSC	2010	Kendriya Vidyalaya	Science	93.60

6. PROFESSIONAL EXPERIENCE

Start Date	End Date	Position Held	Organisation
February 2021	Present	Scientist	CSIR-Central Road Research Institute
January 2019	February 2021	Assistant Engineering Manager	Larsen & Toubro
July 2017	Dec 2018	Senior Design Engineer	Transportation Infrastructure
July 2016	July 2017	Post Graduate Engineer Trainee	IC

7. MEMBERSHIP IN PROFESSIONAL BODIES / TECHNICAL COMMITTEES

- Life Member of Indian Geotechnical Society
- Life Member, Indian Geotechnical Society (Delhi Chapter)
- Member, International Geosynthetics Society
- Life Member of Indian Road Congress
- Member, The Institution of Engineers (India)
- Chartered Engineer, The Institution of Engineers (India)

8. HONOURS/ AWARDS/ SIGNIFICANT ACHIEVEMENTS

- Awarded **EPSRC Doctoral Training Partnership (DTP) Scholarship**, for pursuing **PhD** degree at University of Sheffield, United Kingdom (2024-2028).
- Received '**IGS-Forensic Geotechnical Engineering Award 2023**' from the Indian Geotechnical Society (IGS).
- Featured in the list of **75 influential Indian-origin women geotechnical engineers** in the book titled 'Daughters of Indian Soil' by the Indian Geotechnical Society.
- Received **Foundation Certificate** in **Data Science and Applications**, by the Indian Institute of Technology Madras, India in 2023.
- Received '**Special Award**' from L&T for contribution to the construction of a 70m high Reinforced Soil Slope (RSS) at RESA-07 end in Kannur International Airport Ltd., India.
- Awarded **Gold Medal** for scoring highest marks in all semesters in **Post-Graduation**.
- Awarded **School Topper** certificate at the HSC level.
- Awarded a **0.1 certificate** for **Mathematics** from the CBSE board in 2010.
- Awarded **Best Guide** certificate in 2008.

9. PROJECTS HANDLED IN CRRI

a) Research Projects

Sl. No.	Title of the Project	Role	Sponsoring Agency
1.	Development of 'Biodegradable Prefabricated Vertical Drain' by Molding Technique– A Sustainable Solution for Road Construction over Soft Soil	PL	CSIR
2.	Sustainable Geocomposite Drainage-Root Barrier	Co-PL	CSIR
3.	Design, Construction, Supervision and Pavement performance evaluation of road constructed by using red mud	Member	Hindalco Ltd.
4.	Behavior of Red Mud Waste Material Under Cyclic Loading	Member	CSIR-CRRI
5.	Hill Road Widening using Light Weight Geofoam Blocks-An alternative to earth cutting and filling	Member	NHIDCL
6.	Delhi Cluster- "Delhi Research Implementation and Innovation" (DRIIV), Theme Solid Waste Management, WP-6 Use of construction & demolition wastes, incinerated residues in road construction	Member	IIT Delhi

Sl. No.	Title of the Project	Role	Sponsoring Agency
7.	Recycling of Ghazipur Municipal Solid Waste for Road Embankment & Subgrade	Member	EDMC
8.	Utilization of Red Mud for Road and Structural fill applications	Member	Hindalco Ltd.

b) Consultancy Projects

Sl. No.	Title of the Project	Role	Sponsoring Agency
1.	Investigation of Causes of Settlement and Remedial Rehabilitation Measures for the Foundation Settlement at Pier P3 and Visual Inspection of Structural components of Major Bridge at km 24+461 of Galgalia-Bahadurganj of NH-327E (Package-I), Bihar	PL	GRIL
2.	Slope Failure Analysis and Design of Remediation Works for Rehabilitation of Retaining Wall, CRPF Campus, Srinagar	Co-PL	CPWD
3.	Failure Analysis and Design of Remediation Works for Silewani Ghat Hill Road	Co-PL	NHAI
4.	Feasibility Study of Red Mud waste material in the construction of Road and as a Structural fill	Member	M/s Vedanta Ltd.
5.	Feasibility Study for the Construction of Flyover/Underpass/Grade separator at three locations, Surat city, Gujarat	Member	Municipal Corporation of Surat
6.	Utilization of Municipal Solid Wastes for Road and Structural fill applications	Member	SDMC
7.	Quality audit of Six laning of Shamlaji to Motachiloda from km 401.200 to 494.410 (NH-8)	Member	NHAI
8.	Investigation on distressed Kolaghat Bridge in District Shahjahanpur, UP for its restoration	Member	UP State Bridge Corporation Ltd.
9.	Investigation and design of remedial measures for stabilization of soil to protect the Kali Sindh river upstream side slope of Abutment-1, Bridge No. 34 on Kota-Bina rail line	Member	Rail Vikas Nigam Limited (RVNL)
10.	Quality control handbook for roads and bridges	Member	MP PWD
11.	Review the design/drawings of slope stability of deep cut ground (with soil nails/normal slopes) from DFC Ch. 62+200 to DFC Ch. 65+750 (tunnel Portal Starting point P1) for Dedicated	Member	DFCCIL

Sl. No.	Title of the Project	Role	Sponsoring Agency
	Freight Corridor (DFC) track from Rewari to Dadri		
12.	Vetting of Rigid Design Report	Member	M.G. Contractors Pvt. Ltd.
13.	Design and Technical guidance for RCC Box pushing near Farah Railway Station on Mathura-Dholpur Section	Member	RVNL

10. INDUSTRIAL EXPERIENCE

Mariya Dayana previously served as a Geotechnical Design Engineer at L&T TI IC, where she gained 4.5 years of extensive experience across Airport, Railway, Road, and Elevated Corridor projects. Her expertise spans geotechnical investigation planning, data interpretation, pile capacity evaluation, shallow foundation design, slope stability analysis for embankments and deep cuts, reinforced earth wall and soil slope design, soil nail wall design, shoring systems for deep excavations, and liquefaction assessment. She is also proficient in preparing Bills of Quantities (BoQ) for various geotechnical works. In addition, Mariya supervised the construction of a 70m high reinforced soil slope system at KIAL, acting as the design coordinator for 2 years. This project involved managing 1.2 million cubic meters of earthwork. She also oversaw on-site engineering investigations for multiple projects. During the Bangalore International Airport project, she was the lead coordinator for preparing the Operation and Maintenance (O&M) manuals, covering civil, mechanical, electrical, fire fighting, and IT systems, totalling 38 manuals. Her diverse experience and proven leadership in managing complex geotechnical projects underscore her capability to tackle challenging engineering problems and deliver successful outcomes.

❖ **Highway Projects: 10** ❖ **Airport Projects: 03** ❖ **Railway Projects: 03**

a) Major Projects handled

- Kannur International Airport Ltd., Kerala
- Bangalore International Airport Ltd.
- Delhi International Airport Ltd.
- Delhi Vadodara Expressway, Package 22

b) Projects handled during bid stage

- Mumbai-Ahmedabad High-Speed Rail Corridor
- Mauritius Metro Rail Project
- Eastern Dedicated Freight Corridor
- Kalyani-Belghoria Road Project
- Aurangabad Karodi Road Project

- Dwarka Expressway, Package III & IV
- Western Dedicated Freight Corridor
- Pragati-Maidan Road Project
- Mumbai Nagpur Road Project
- Trivandrum Vilikuri Road Project
- Mumbai-Vadodara Road Project
- Delhi-Vadodara Road Project
- Kerala Highway Road packages

11. PAPER PUBLICATIONS

a) Journal Paper

- Bhatt P., Sinha A. K., **Dayana** M. P. J., Parvathi G.S., Hassan M. (2024) Performance Evaluation of Zinc Tailing Waste Materials for Embankment Construction: Experimental and Numerical Investigation. Journal of Mining Environment.
- Dayana** M.P.J., Parvathi G.S., Sinha A.K. (2023) Investigation of Hillslope Failure and Mitigation- A Case Study of Sillewani Ghat, Chhindwara, India. Journal of the Geological Society of India, 99: 621-634. <https://doi.org/10.1007/s12594-023-2363-4>
- Parvathi G.S., Sinha A.K., Havanagi V.G., **Dayana** M.P.J. (2022) Failure analysis and mitigation of Shankumugham beach road, Kerala, India—a case study. Arabian journal of Geosciences, 15:1263. <https://doi.org/10.1007/s12517-022-10536-1>.
- Anbazhagan P., Sheikh M.N., Bajaj K., **Dayana** M.P.J., Madhura H., Reddy G. (2017) Empirical models for the prediction of ground motion duration for Intraplate Earthquakes. Journal of Seismology 21(4):1001-1021.

b) Conference Paper

- Bhatt P., A. K. Sinha, **Dayana** M.P.J., Murtaza Hasan (2023). Strength and Deformation Behaviour of Zinc Tailing Waste Material for Embankment Construction. International Conference on Creative and Innovative Solutions in Civil Engineering, 11 August, MNIT, Jaipur, Rajasthan.
- Parvathi G.S., **Dayana** M.P.J., Sinha A.K., Havanagi V.G. (2022) 3-Dimensional finite element analysis of Shankumugham beach road due to rainfall-induced storm surge. Proceedings of the Indian Geotechnical Conference Volume 7.
- Dayana** M.P.J, Jain B., Sunkavalli S.K., Subramaniam R. (2021) Design and construction demeanor of very high embankment using geosynthetic reinforcement. Advances in Transportation Geotechnics 4:871-887.

- iv. **Dayana** M.P.J., Jose P., Jose T., Jose N. (2014) Study on the Attenuation Capacity of Amended Clay Liner. In: IGS Conference, Kakinada.

12. SOFTWARE SKILLS

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| ▪ MIDAS GTS NX | ▪ Geo5 | ▪ SoilWorks | ▪ MSEW |
| ▪ SLOPE/W, SEEP/W | ▪ Plaxis | ▪ ReSSA | ▪ AutoCAD |

13. FACILITIES ESTABLISHED AT CRRI

- Servo controlled Universal Testing Machine (UTM) of 100kN capacity for Geosynthetic test including wide width tensile test, tear test, grab test, CBR puncture and index puncture tests.
- Servo controlled Universal Testing Machine (UTM) of 50kN with temperature chamber for Geosynthetic Creep test.
- Software's: GTS NX, SoilWorks, MSEW, ZWCAD.

14. LECTURES DELIVERED

- Subsoil investigation and engineering properties of soil. CSIR-CRRI training programme.
- Soil investigations and specifications for rural road construction. NRIDA training programme.
- Demonstration and hands-on practice of test on soils. IAHE Foundation training programme.
- Highway slope management-example/case study. CSIR-CRRI training programme.