

- I. Name** : **Dr. Shubham Raj**
- II. Current Position** : **Scientist**, Rigid Pavement Division
CSIR – Central Road Research Institute (CSIR-CRRI)
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- III. Contact** : +91 94300 72052, shubhamraj.ce@gmail.com
www.shubhamraj.net; [LinkedIn](#); [Google Scholar](#)
[ResearchGate](#); [Scopus](#)

IV. Educational Qualification

Degree	University / Institute	Subject	Grade	Year
Ph.D. + M.S. (Direct Ph.D.)	Indian Institute of Technology (IIT) Madras, Chennai	Building Materials, Civil Engineering	9.63/10	2024
B.Tech.	National Institute of Technology (NIT) Agartala, Tripura	Civil Engineering	9.04/10	2017

V. Areas of Specialization

- Aqueous foam and Lightweight Concrete
- Geopolymer and Alkali-Activated Materials
- 3D Printing / Additive Manufacturing
- Advanced Material Characterization (MIP, SEM, XRD, X-Ray CT, TGA, Calorimetry)
- Rheology & Fresh-State Behaviour
- Technical Consulting
- Academic-Industry Collaboration
- Project Supervision & Technical Mentoring
- Sustainable Material Development
- Agro-Industrial Waste Valorization
- Affordable Housing Technologies

VI. Employment

S. No.	From	To	Organization	Position
1.	27.10.2025	Till date	CSIR-CRRI	Scientist
2.	01.06.2025	14.10.2025	Indian Institute of Technology (IIT) Hyderabad	Post-Doctoral Fellow
2.	30.04.2024	30.05.2025	Indian Institute of Technology (IIT) Hyderabad	Institute Post-Doctoral Fellow
4.	22.08.2017	10.01.2018	Vedanta Limited	Graduate Engineer Trainee

VII. Honours and Awards

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| 1. “Institute Post Doctoral Fellowship (IPDF)” by IIT Hyderabad to carry out Post-Doctoral Research | 2024 |
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2.	“Letter of Appreciation” by M-Fac Solutions Pvt. Ltd. in recognition of excellent consultancy works	2024
3.	“Institute Research Award” by IIT Madras in recognition of exemplary research done during my Ph.D.	2023
4.	“Junior and Senior Research Fellowship (JRF and SRF)” by the Ministry of Human Resource and Development, Government of India, for Ph.D. research	2018-2022
5.	“Certificate of Appreciation” by NIT Agartala in recognition of exemplary service as Management Head of ASIMOV Robotics Club	2016
6.	“Certificate of Appreciation” by the CM of U.P., India, for Best Design of Low-Cost Housing for Rural Areas of Uttar Pradesh in National Design Competition	2016
7.	“Best Fabrication Award” by Technex’ 15, IIT (BHU) and Civil Simplified for best design in Bridge Design Challenge conducted at NIT Agartala	2015

VIII. Consultancy / Sponsored Projects

S. No.	Project / Work detail	Agency / Organization	Amount	Year	Role	Status
1.	Technical Evaluation & Progress Evaluation of Civil Projects for GMR Hyderabad Aerotropolis Limited & GMR Hyderabad Aviation SEZ Limited	R. Subramanian and Company LLP	Rs.40,000/-	2025	PI	Completed
2.	Setting up Materials Testing Laboratory and Building Products Development	M-Fac Solutions Pvt. Ltd.	NA	2024	PI	Completed

IX. Research Output

Patents

1. **Raj, S.**, Subramaniam, K.V.L., and Jain, P.K. (2025). “Fire-Resistant Composite Material Incorporating Excalating Carbon Forms in Foamed Concrete.” *Indian Patent. Published on 24.10.2025.*
2. Aidhen, I.S., Subramanyam, A., **Raj, S.**, and Ramamurthy, K. (2024). “Unsaturated anacardate based foaming agent(s) for the preparation of foam concrete.” *India Patent No. 530064. Granted on 25.03.2024.* (Main inventor)

Journal Publications

1. **Raj, S.** and Ramamurthy, K. “Valorization of Cashew Industry Waste into Anacardate-Based Green Foaming Agents for Foam Concrete Applications.” *Journal of Materials in Civil Engineering.* (Under review)
2. Paritala, S., **Raj, S.**, Singh, P.R., and Subramaniam, K.V.L. (2025). “Designing 3D Printable Concrete by Integrating the Influence of Aggregate Characteristics.” *Materials and Structures.* Vol. 58, 267. <https://doi.org/10.1617/s11527-025-02782-y>

3. **Raj, S.** and Ramamurthy, K. (2024) "Classification of surfactants and admixtures for producing stable aqueous foam." *Advances in Colloid and Interface Science*. Vol. 331, 103234. <https://doi.org/10.1016/j.cis.2024.103234>
4. **Raj, S.** and Ramamurthy, K. (2023). "Physical, hydrolytic, and mechanical stability of alkali-activated fly ash-slag foam concrete." *Cement and Concrete Composites*. Vol. 142, 105223. <https://doi.org/10.1016/j.cemconcomp.2023.105223>
5. **Raj, S.**, Krishnan, J. M., and Ramamurthy, K. (2022). "Influence of admixtures on the characteristics of aqueous foam produced using a synthetic surfactant." *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. Vol. 643, 128770. <https://doi.org/10.1016/j.colsurfa.2022.128770>
6. **Raj, S.**, Rai, A. K., and Havanagi, V. G. (2018). "Suitability of stabilized copper slag and fly ash mix for road construction." *World Journal of Engineering*. Vol.15, Issue 3. <http://dx.doi.org/10.1108/WJE-08-2017-0220>
7. **Raj, S.**, Mohammad, S., Das, R., and Saha, S. (2017). "Coconut fibre-reinforced cement-stabilized rammed earth blocks." *World Journal of Engineering*. Vol. 14, Issue 3. <http://dx.doi.org/10.1108/WJE-10-2016-0101>

Conference Publications

8. Paritala, S., Singh, P.R., Yadav, S., **Raj, S.**, and Subramaniam, K.V.L. (2024). "Evaluation of the influence of aggregate type and paste rheology on concrete printability." *18th NCB International Conference & Exhibition on Cement, Concrete and Building Materials*, New Delhi, India, Volume 3, pp 427-434.
9. Sivaramnaik, M., **Raj, S.**, and Subramaniam, K.V.L. (2024). "Influence of fly ash-based aqueous nano-silica on strength and phase evolution in cement paste." *18th NCB International Conference & Exhibition on Cement, Concrete and Building Materials*, New Delhi, India, Volume 3, pp 53-61.
10. Tripura, D. D., **Raj, S.**, Mohammad, S., and Das, R. (2018). "Suitability of recycled aggregate as a replacement for natural aggregate in construction." *2nd DSCS Workshop, Moscow, Russia, ACI Symposium Publication*, American Concrete Institute, Volume SP-326, pp 37.1-37.10. <http://dx.doi.org/10.14359/51711019>

Presentations, Posters, and Reports

1. **Raj, S.** (2024). "Engineering Sustainable Foam Concrete: From Aqueous Foams to Cellular Geopolymers" Department of Civil Engineering, IIT Patna, 15th October. (Research Talk)
2. **Raj, S.** and Ramamurthy, K. (2023). "Enhancing the stability of pre-formed aqueous foam for foamed geopolymer production." *TLC2 Young Researchers Symposium*, Chennai, India. (Poster Presentation)
3. **Raj, S.**, Mohammad, S., Das, R., Saha, S., & Tripura, DD (2016). "Low-Cost Housing Models for urban and rural areas using Rammed Earth Technique." *National Design Competition on low-Cost Housing Models for Urban & Rural Areas*, Government of Uttar Pradesh, India. (Technical Report)

X. Professional and Voluntary Engagements

- Reviewer, Cement and Concrete Composites, Elsevier
- Reviewer, Journal of Materials in Civil Engineering, ASCE
- Life Member, Indian Concrete Institute (ICI), Membership no. – 14602
- Associate Member, Institution of Engineers India (IEI), Membership no. - AM1775572