



Dr. N. MANIGANDAN

#Concrete #Microstructure

ORCID: 0000-0002-5894-0914.

#Cementchemistry #Low-CO₂-Cements

Tamil Nadu, India.

Email & Phone: authormanigandan@gmail.com & +91 9942926726.

CAREER OBJECTIVES

- To start my career in a reputed research laboratory or institute while maintaining absolute integrity over all the works assigned to me.
- To act as a team player with uniqueness in the research field of low-carbon cements.

EDUCATION

DOCTOR OF PHILOSOPHY – Civil Engineering (*Recognition*)

Topic: Supplementary Cementitious Blend of Metakaolin and Nanosilica with Ferrochrome Slag as Fine Aggregate in Concrete.

Duration: Full Time - 2019-2024.

Supervisor: Dr. V. Ponmalar, Professor, College of Engineering Guindy, Anna University, Chennai.

Dissertation Short Presentation: <https://youtu.be/ud2T4taL8es?si=-PUmg87HbYoxydHr>

MASTER OF ENGINEERING

Degree: Construction Engineering and Management.

Topic (Project): Construction Risk Management - Hilly Terrain.

Institution: Sri Ramakrishna Institute of Technology, Coimbatore, India. **Duration:** 2014-2016. **CGPA:** 7.93.

BACHELOR OF ENGINEERING

Degree: Civil Engineering.

Topic (Project): A study on replacement of Msand, Eco-sand, and Foundry sand in concrete.

Institution: Kalaivani College of Technology, Coimbatore, India. **Duration:** 2010-2014. **CGPA:** 7.41.

SCHOOLING

Institution: Vidhya Vikaas Boys Hr. Secondary School, Thiruchengode, India.

Percentage: HSC - 74.33%; SSLC - 80%.

RESEARCH INTEREST

- Sustainable Materials (*Cement & Fine aggregate*)
- Net-zero CO₂ binders and Pozzolans (including *LC₃* and *decarbonising concrete*)
- Processing and Activating the SCMs (*Crystalline to Amorphous*)
- Morphology of Concrete
- Durability of Concrete
- Life Cycle Analysis (*LCA*) and Life Cycle Costing (*LCC*)
- Leaching Study on Concrete

SKILLS

Robust Professionalism	Strong Research Ethics	Flexibility	Manuscript writings
Creativity	Oration		

JOURNAL PUBLICATIONS

1. **Manigandan N*** & Ponmalar V, “M100 concrete probing on quinary cementitious matrix incorporated with industrial ferrochrome slag sand” (2024), *Construction and Building Materials* (**Q1**) (I.F:7.4) <https://doi.org/10.1016/j.conbuildmat.2024.135478>
2. **Manigandan N** & Ponmalar V*, “Some Investigation on Ternary Powder (Binder) Technology Incorporated with Ferrochrome Slag as Fine Aggregate in Concrete” (2023), *Journal of Material Cycles and Waste Management*. (**Q2**) (I.F:3.579) <https://doi.org/10.1007/s10163-023-01710-y>
3. **Manigandan N** & Ponmalar V*, “M5 investigation on ternary binder incorporated with ferrochrome slag aggregate in concrete” (2022), *Applied Nanoscience*. (**Q2**) (I.F:3.869) <https://doi.org/10.1007/s13204-022-02615-2>
4. **Manigandan N*** & Ponmalar V, “Ferrochrome slag and manufactured sand as fine aggregate replacement in concrete and mortar-a brief review” (2020), *Indian Journal of Science and Technology* <https://doi.org/10.17485/IJST/v13i26.526>
5. **Manigandan N***, Jerin CF & Rajesh KA, “A review paper on investigation of risk assessment in construction project - hilly terrain” (2016), *International Research Journal of Engineering and Technology* <https://www.irjet.net/archives/V3/i5/IRJET-V3I5285.pdf> (During masters).

PATENT

Manigandan N* & Ponmalar V, “A method of producing Ferrochrome slag based solid block” (2023).

Patent No. IN 202341004469A

Country: India.

CONFERENCES

1. **Manigandan N** & Ponmalar V, “Ferrochrome Slag Sand as Fine Aggregate in Fly ash Cementitious System - A Dissertation” (2024), *National Institute of Technology Trichy* along with **RILEM** and **ICI**. (Abstract - Accepted SEC2024).
2. **Manigandan N** & Ponmalar V, “Hierarchy Star Rating on Durability (HSRD) using Ferrochrome slag Concrete - Methodology and Justification by Microstructure” (2024), *Indian Institute of Technology Madras* along with **RILEM** and **ICI**. (Abstract - Accepted CONSEC2024)
3. Ponmalar, V Jegan, GK **Manigandan, N*** & Archana, K, “High Performance Concrete using Metakaolin and Ceramic waste sand – A Dissertation” (2024), (*ASCE and ACSGE2024*), **Birla Institute of Technology and Science (BITS), Pilani Rajasthan**. February 26-28. (Accepted in Springer Book series)
4. **Manigandan N** & Ponmalar V, “Affordable Solid block (SB) using Industrial waste Fly ash binder and Ferrochrome slag fine aggregate” (2023), conducted by *National Institute of Technology, Surathkal (SIIOC'2023)* along with **G20**. (Accepted in Springer Book series)

5. **Manigandan N**, Ponnmalar V, Archana K & Ranjith K, “Mechanical and Thermal Study of Msand with FeCr and Ceramic Wastes as Fine Aggregates in Concrete” (2020), conducted by *Adithya Institute of Technology (SMIG3.0)*.

AWARDS

1.	Best Paper	”High Performance Concrete using Metakaolin and Ceramic waste sand – A Dissertation”. (ASCE and ACSGE2024), Birla Institute of Technology and Science (BITS), Pilani Rajasthan . February 26-28. (1st Prize).
2.	Finalist	Young Research Symposium’2024 – International best Ph.D. Thesis award in the name of Dr. Surendra P. Shah on 28 th January 2024. (TLC ₂) IIT Madras, RILEM & ICI .
3.	The Best Technical Paper	“Affordable Solid block (SB) using Industrial waste Fly ash binder and Ferrochrome slag fine aggregate”, (G20 and SIIOC’2023), National Institute of Technology, Surathkal .
4.	Anna Centenary Research Fellow	Centre for Research, Anna University , from 2019 to 2021
5.	Best Paper	“Mechanical and Thermal Study of Msand with FeCr and Ceramic Wastes as Fine Aggregates in Concrete”, (SMIG3.0’2020).

MEMBER

RILEM: Registered User: 45624 (Since 2023).

WORK EXPERIENCE

Position: Project Engineer

Firm: KKM construction, Krishnagiri, India.

Duration: 07/2016 - 01/2019

Project Handled:

- Luxury Villa Construction (10nos).
- Bitumen Road work for 12 km.
- Govt. School Building work.
- Water Tank and Box-culverts.

Reference: Mr. M. Idayakumar M.B.A. (M.D), +91 9787331738.

TEACHING EXPERIENCE

Position: Laboratory Handler

Institution: CEG, Anna University, Chennai. **Duration:** 2019 – 2023.

- Advance Concrete Laboratory (P.G)
- Construction Materials Laboratory (U.G)
- Strength of Materials Laboratory (U.G)

SOFTWARES

Origin	Image-J	Ms-Office	SPSS
NCSS	Primavera	Ms-Project	

PERSONAL DETAILS

Father Name: A. C. Nagarajan

Date of Birth: 04/04/1992

Address: s/o A.C. Nagarajan, 1/4 Anchoor Village and Post, Krishnagiri - 635203.

Email & Phone: authormanigandan@gmail.com manigandan.civil.phd@gmail.com & +91942926726.

ORCID: 0000-0002-5894-0914

REFERENCES

1. **Dr. V. Ponmalar M.E. Ph.D.** Professor, College of Engineering Guindy, Anna University, Chennai.
Email & Phone: ponmalar_v@annauniv.edu & +91 941236796.
2. **Dr. K. Nandhini Ph.D. PDF.** Assistant Professor, College of Engineering Guindy, Anna University, Chennai.
Email & Phone: knandhini@annauniv.edu & +91 9597975215.
3. **Dr. P. Chandru Ph.D. PDF.** Assistant Professor, National Institute of Technology Calicut (NITC), Kozhikode, Kerala - 673601.
Email & Phone: chandru@nitc.ac.in & +91 8870211979.

DECLARATION

Hereby I declare the above the details are true up to my knowledge.

Date:

Place:

Sincerely,

[N.MANIGANDAN]