

MANU SANTHANAM

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Date of Birth: May 1, 1973

Academic Background

B. Tech	IIT Madras	Jul 1994
M. S.	Purdue University	May 1996
Ph.D.	Purdue University	Aug 2001

Work Experience

Senior R&D Chemist	Sika Corporation, USA	May 1996 – Nov 1998
Instructor	Purdue University, USA	May – Aug 2001
Assistant Professor	IIT Madras	Oct 2001 – Mar 2009
Associate Professor	IIT Madras	Mar 2009 – July 2013
Professor	IIT Madras	July 2013 onwards

Professional Affiliations

Life member of Indian Concrete Institute
Member of ACI
Senior Member and Fellow of RILEM
Member Editorial Board for Cement and Concrete Composites
Member Editorial Board for Advances in Cement Research
Associate Editor for ASCE Journal of Materials in Civil Engineering
Associate Editor for Journal of Sustainable Cement Based Materials
Associate Editor for Indian Concrete Journal

Awards Received

1. Indian Concrete Institute – Prof. V. Ramakrishnan Award for Outstanding Young Researcher in Concrete Technology, 2006.
2. Indian National Academy of Engineering (INAE) Young Engineer Award 2008
3. Indian Concrete Institute – Tamil Nadu Centre Ultratech Award for Outstanding Young Concrete Engineer 2011.
4. Corps of Engineers Prize from Institution of Engineers (India), 2011.
5. Indian Concrete Institute – Fosroc Award for Outstanding Concrete Technologist 2018.
6. IIT Madras Institute Research and Development Award – Mid-Career Grant 2020.

Research Supervision

No.	Scholar Name	MS / PhD	Topic	Status
1	A. K. Kasthurba	PhD	Characterization of Kerala Laterite and Study of Weathering Mechanisms Co-guide: Prof. M. S. Mathews	Completed 2006
2	C. Ramesh Babu	PhD	Long Term Effects of Acceleration of Strength Gain in Concrete	Completed 2008
3	A. Sivakumar	PhD	Influence of Hybrid Fibre Combinations on Toughness and Early Age Shrinkage of High Performance Concrete	Completed 2007
4	N. Prakash	PhD	Rational Mixture Design of Self-Compacting Concrete	Completed 2009
5	R. Sathia	PhD	Investigation of Geopolymer Concrete Co-guide: Prof. K. Ganesh Babu, Ocean Engg.	Completed 2011
6	N. Shajil	PhD	Smart Concrete for Structural Applications Co-guide: Prof. M. S. Sivakumar, Applied Mechanics	Completed 2013
7	S. Ashok Kumar	MS	Study of Damage in Concrete Using Non-Destructive Investigations	Completed 2007
8	B. Srinath	MS	Evaluation of fresh concrete using Non-Destructive Investigations Co-guide: Prof. K. Ganesh Babu, Ocean Engg.	Completed 2007
9	G. Rakesh	MS	Evaluation of Shrinkage Reducing Admixtures for Concrete Co-guide: Prof. Ravindra Gettu	Completed 2010
10	S. Divya Rani	MS	Studies on Permissible Temperature in FBR Vault Concrete	Completed 2012
11	B. Sanish	MS	Monitoring concrete properties using impedance spectroscopy and ultrasonic methods	Completed 2013
12	Mohammed Haneefa	PhD	Microstructural evaluation of liquid sodium – concrete interaction Selected for ICI-Best PhD Thesis Award in 2014	Completed 2014
13	Bahurudeen	PhD	Performance Evaluation of Sugarcane Bagasse Ash as Supplementary Cementing Material in Concrete Selected for ICI-Best PhD Thesis Award in 2015	Completed 2015
14	Dhanya B S	PhD	Evolving Performance Specifications for Concrete in India Selected for ICI-Best PhD Thesis Award in 2016	Completed 2016
15	Abul Khalid	MS	Influence of binder type on abrasive properties of concrete	Completed 2016
16	Murugan M	PhD	Enhanced porosity concrete with nanomaterials for water filtration applications	Completed 2017
17	Saarthak Surana	MS	Evaluation of the influence of curing methods on durability parameters Co-guide: Dr. Radhakrishna Pillai Selected for ICI-Tamil Nadu Centre Best MS Thesis Award in 2018	Completed 2017
18	M S Hemalatha	PhD	Evaluation of reactivity of mineral admixtures	Completion in Dec 2022
19	Fathima Suma	PhD	Influence of specimen size on sulphate	Completion

			attack	in Dec 2022
20	Ramaswamy K P	PhD	Acid attack of concrete	Completed 2018
21	D Yuvaraj	PhD	Hydration characteristics of ternary blended cementitious systems involving limestone	Completed in Sep 2020
22	Nithya Nair	MS	Rheological behavior of ternary blended cementitious systems involving limestone	Completed 2018
23	Divya Rani	PhD	Investigations on lime mortars for heritage structures	Completion in Dec 2022
24	Swathy Manohar	PhD	Assessment of deterioration of masonry units in heritage structures	Completed in Jul 2020
25	A V Rahul	PhD	Concrete 3D printing – mixture design and rheology	Completed in Mar 2020
26	Shantanu Bhattacharjee	PhD (PMRF)	Optimization of 3D printed concrete	Started in Jul 2018
27	Asha B	PhD	Use of lower grade limestones in concrete	Started in Jul 2019
28	Ramesh G	PhD	Ultrasonic imaging of concrete	Started in Jan 2018
29	Anupama V A	PhD (PMRF)	Investigations on heritage materials – long term performance	Started in Jan 2020
30	M Nilakanmani	PhD (PMRF)	Low energy pathways for utilization of biomass ashes Main guide: Prof Piyush Chaunsali	Started in Jan 2020
31	Pratik Gujar	PhD	Interfacial studies on cement and coating Co-guide: Prof Pijush Ghosh, Applied Mechanics	Completion in Jul 2022
32	Amitkumar Chauhan	PhD	Use of Low Grade Limestone in Concrete	Started in Jul 2021
33	V Haripan	PhD (PMRF)	Mineralization of fines from C&D waste by carbonation Main guide: Prof Ravindra Gettu	Started in Jul 2021

Projects

No.	Title	Sponsoring agency	Duration and cost
Sponsored Projects			
1	Damage Assessment in High Performance Concrete	IIT Madras	Nov 2003 – Oct 2005 Rs. 4,76,000/-
2	Study of design and performance of Self Compacting Concrete	DST (Fast Track Award)	Jun 2003 – Sep 2006 Rs. 3,60,000/-
3	Strength and durability studies of laterite as an alternative building material – strategies to conserve world heritage monuments in laterite (As Co-Investigator)	MHRD (Thrust Areas in Technical Education)	Dec 2003 – Dec 2005 Rs. 10,00,000/-
4	Heat Evolution in High Performance Concrete and Its Effects on Long-Term Durability	DST (Indo -South African Joint Project)	July 2004 – July 2007 Rs. 7,67,000/-
5	Long Term Effects of Acceleration of Strength gain in Concrete	AICTE (Career Award for Young Teachers)	Jan 2006 – Jan 2009 Rs. 10,50,000/-
6	Characterization of structural wall concrete used in fast reactors for structural / shielding purposes	IGCAR	Apr 2006 – Feb 2009 Rs. 16,74,000/-
7	Investigation of compatibility issues between Indian cements and water-reducing chemical admixtures	DST	Apr 2007 – Dec 2010 Rs. 39,10,000/-
8	Studies on Permissible Temperature in FBR Vault Concrete	IGCAR	Sep 2008 – Sep 2010 Rs. 24,60,000/-
9	Development of stabilized compacted soil blocks for rural housing; Residential Construction with Stabilized Compacted Soil Blocks – A Feasibility Study	Rural Technology Action Group	Oct 2005 – Dec 2007 Mar 2011 – Mar 2012 Rs. 3,56,000/-
10	Advanced material characterization techniques (at EPFL, Switzerland)	DST BOYSCAST Fellowship	Mar 2007 – Dec 2007 Rs. 9,82,000/-
11	Performance Testing and Evaluation of Sodium Resistant Concretes	IGCAR	Dec 2009 – Dec 2011 Rs. 33,00,000/-
12	Laboratory for the study of long term performance of concrete (As Co-investigator)	Lafarge	Feb 2011 – Feb 2014 Rs. 93,87,000/-
13	Development of Performance Specifications for Concrete Construction in India	DST	May 2012 – May 2016 Rs. 50,00,000/-
14	Performance Evaluation of Limestone Calcined Clay Cement	EPFL, Switzerland	Jun 2014 – Jun 2017 Rs. 2,00,00,000/-
15	LC3 – Phase II	EPFL, Switzerland	Jun 2017 – Jun 2020 Rs. 84,00,000/-
16	Towards Durability Specifications with Recycled Aggregate Concrete	SPARC	May 2019 – May 2021 Rs. 67,78,585/-
17	Development of Acoustic Pulse Based Testing System for Concrete	UAY	Feb 2019 – Feb 2022 Rs. 67,70,000
18	Enhancing the Durability and Sustainability of Concrete Structures in Emerging Economies (As Co-Investigator)	SPARC	Jul 2019 – Jul 2021 Rs. 71,27,645
19	National Centre for Safety of Heritage Structures (As Co-Investigator)	MHRD	Feb 2014 – Feb 2019 Rs. 12,00,00,000
20	Development of Pre-Packaged Grout (As Co-Investigator)	MHRD Imprint	Mar 2017 – Sep 2019 Rs. 40,36,000/-
21	3D Printing of Concrete (As Co-Investigator)	IIT Madras and L&T	47,50,000 Mar 2017 – Jun 2019
22	Polymer Coating on Setting Cement Surface (As Co-Investigator)	DST	Nov 2015 – Mar 2019 Rs. 59,03,000/-
23	Utilization of Low-Grade Limestone in Concrete	DST SERB	Dec 2021 – Dec 2024 Rs. 53,00,000/-
Major Consulting Projects			
1	Development of plaster cement	Ultratech	2 years Rs. 20,00,000/-
2	Development of metakaolin as cement replacement material	English India Clays Limited	2 years Rs. 7,20,000/-
3	Development of polycarboxylate superplasticizers	Clariant Produkte,	2 years

		Germany	EUR 29100
4	Chennai Airport Mix Design and Quality Control	CCCL, AAI	2 years Rs. 9,25,000/-
5	Performance Evaluation of Ultrafine Slag for Concrete (As Co-Investigator)	Ambuja Cements Ltd.	12 months Rs. 16,54,500/-
6	Study of Concrete Durability Under Different Environmental Conditions (As Co-investigator)	Lafarge	4 years Rs. 23,00,000/-
7	Performance evaluation of superplasticizers	Sika AG, Switzerland	12 months CHF 29000
8	Alternative additives for cement / lime plaster	St Gobain Research Institute	2 years Rs. 29,00,000

Publication Details

Refereed international journals

1. Santhanam, M., Cohen, M. D., and Olek, J., "Sulfate Attack Research: Whither Now," *Cement and Concrete Research* Vol. 31, **2001**, pp. 845 – 851.
2. Jallad, K., Santhanam, M., Cohen M. D., and Ben Amotz, D., "Chemical mapping of thaumasite formed in sulfate-attacked cement mortar using near-infrared Raman imaging microscopy," *Cement and Concrete Research*, Vol. 31, **2001**, pp. 953 – 958.
3. Santhanam, M., Cohen, M. D., and Olek, J., "Modeling the Effects of Solution Temperature and Concentration During Sulfate Attack on Cement Mortars," *Cement and Concrete Research* Vol. 32, **2002**, pp. 585 – 592.
4. Santhanam, M., Cohen, M. D., and Olek, J., "Mechanism of Sulfate Attack: A Fresh Look; Part I – Summary of Experimental Results," *Cement and Concrete Research*, Vol. 32, No. 6, **2002**, pp. 915 – 921.
5. Santhanam, M., Cohen, M. D., and Olek, J., "Effects of gypsum formation on the performance of cement mortars during external sulfate attack," *Cement and Concrete Research*, Vol. 33, No. 3, **2003**, pp. 325 - 332.
6. Santhanam, M., Cohen, M. D., and Olek, J., "Mechanism of Sulfate Attack: A Fresh Look; Part II – Proposed Mechanisms," *Cement and Concrete Research*, Vol. 33, No. 3, **2003**, pp. 341 - 346.
7. Jallad, K., Santhanam, M., and Cohen M. D., "Stability and reactivity of thaumasite at different pH levels," *Cement and Concrete Research*, Vol. 33, No. 3, **2003**, pp. 433 – 437.
8. Kasthurba, A.K., and Santhanam, M., "Laterite as a Prime Material for Architectural Applications in Malabar Region, Western India," *International Journal for Housing Science and Its Applications*, Vol. 30, No. 3, **2006**, pp. 183 – 194.
9. Santhanam, M., Cohen, M.D., and Olek, J., "Differentiating Seawater and Groundwater Sulfate Attack on Portland Cement Mortars," *Cement and Concrete Research* Vol. 36, No. 12, **2006**, pp. 2132 – 2137.
10. Kasthurba, A. K., Santhanam, M., and Mathews, M. S., "Investigation of Laterite Stone for Building Purposes from Malabar Region, Kerala State, SW India: Part I – Field Studies and Profile Characterization," *Journal of Construction and Building Materials*, Vol. 21, No. 1, **2007**, pp. 73 – 82.
11. Sivakumar, A. and Santhanam, M., "A Quantitative Study on the Plastic Shrinkage Cracking in High Strength Hybrid Fibre Reinforced Concrete", *Cement and Concrete Composites* Vol. 29, No. 7, **2007**, pp. 575 – 581.
12. Sivakumar, A. and Santhanam, M., "Mechanical Properties of High Strength Concrete Reinforced with Combinations of Steel and Non-Metallic Fibres", *Cement and Concrete Composites* Vol. 29, No. 8, **2007**, pp. 603 – 608.
13. Prakash Nanthagopalan, Michael Haist, Manu Santhanam, and Harald S. Müller, "Investigation on the influence of granular packing on the flow properties of cementitious suspensions," *Cement and Concrete Composites* Vol. 30, No. 9, **2008**, pp. 763 – 768.
14. Kasthurba, A. K., Santhanam, M., and Achyuthan, H., "Investigation of Laterite Stone for Building Purposes from Malabar Region, Kerala State, SW India – Chemical Analysis and Microstructure Studies," *Journal of Construction and Building Materials*, Vol. 22, No. 12, **2008**, pp. 2400 – 2408.
15. Prakash Nanthagopalan and Manu Santhanam, "Experimental investigations on the influence of paste composition and content on the properties of Self-Compacting Concrete," *Construction & Building Materials*, Volume 23, No. 11, **2009**, pp. 3443-3449.

16. Prakash Nanthagopalan and Manu Santhanam, "A New Empirical Test Method For The Optimization of Viscosity Modifying Agent in Self Compacting Concrete," *Materials and Structures*, Vol. 43, **2010**, pp. 203 - 210.
17. Manu Santhanam and Pradeep Kumar, "Assessment of Concrete's Resistance to Chloride Penetration," *International Journal of 3 R's*, Vol. 1, No. 1, **2010**, pp. 42 - 48.
18. A. Sivakumar and M. Santhanam, "Cracked Permeability of Hybrid Fibre-Reinforced Concrete", *Proceedings of the ICE – Construction Materials*, Vol. 163, Issue 1, **2010**, pp. 45 – 50.
19. Mark G. Alexander, Manu Santhanam, and Yunus Ballim, "Durability Design and Specification for Concrete Structures – The Way Forward," *International Journal of Advances in Engineering Science and Applied Mathematics*, Vol. 2, No. 3, **2010**, pp. 95 – 105.
20. Manu Santhanam, "Ultrasonic Characterization of Damage in Concrete," *Journal of Structural Longevity*, Vol. 3, No. 2, **2010**, pp. 111 – 125.
21. Prakash Nanthagopalan and Manu Santhanam, "Fresh and Hardened Properties of Self-Compacting Concrete Produced with Manufactured Sand," *Cement and Concrete Composites*, Vol. 33, No. 3, **2011**, pp. 353 – 358.
22. Manu Santhanam, "Effect of Solution Concentration on the Attack of Concrete by Combined Sulphate and Chloride Solutions," *European Journal of Civil Engineering* Vol. 15, No. 7, **2011**, pp. 1003 – 1015.
23. Prakash Nanthagopalan and Manu Santhanam, "An Empirical Approach for the Optimisation of Aggregate Combinations for Self-Compacting Concrete," *Materials and Structures*, Vol. 45, **2012**, pp. 1167 – 1179.
24. S. Divya Rani and Manu Santhanam, "Influence of Moderately Elevated Temperatures on Engineering Properties of Concrete used for Nuclear Reactor Vaults", *Cement and Concrete Composites*, Vol. 34, No. 9, **2012**, pp. 917 – 923.
25. N. Shajil, S. M. Srinivasan, and M. Santhanam, "Self-centering of shape memory alloy fiber reinforced cement mortar members subjected to strong cyclic loading," *Materials and Structures*, Vol. 46, No. 4, **2013**, pp. 651 – 661.
26. K. Mohammed Haneefa, M. Santhanam, and F C Parida, "Review of Concrete Performance at Elevated Temperature and Hot Sodium Exposure Applications in Nuclear Industry," *Nuclear Engineering and Design* 258, **2013**, pp. 76– 88.
27. Sanish K. B., Narayanan Neithalath, and Manu Santhanam, "Monitoring the Evolution of Material Structure in Cement Pastes and Concretes Using Electrical Measurements," *Construction and Building Materials* 49, **2013**, pp. 288 – 297.
28. K. Mohammed Haneefa, M. Santhanam, and F C Parida, "Performance characterization of geopolymer composites for hot sodium exposed sacrificial layer in fast breeder reactors," *Nuclear Engineering and Design* 265, **2013**, pp. 542 – 553.
29. K. Mohammed Haneefa, M. Santhanam, R. Ramasamy, and F C Parida, "Hot sodium-triggered thermo-chemical degradation of concrete aggregates in the sodium resistant sacrificial layers of fast breeder reactors," *Nuclear Engineering and Design* 265, **2013**, pp. 654 – 667.
30. K. Mohammed Haneefa, M. Santhanam, and F C Parida, "Deterioration of limestone aggregate mortars by liquid sodium in a fast breeder reactor environment," *Nuclear Engineering and Design* 275, **2014**, pp. 287 – 299.
31. A. Bahurudeen, A. V. Marckson, Arun Kishore, and M. Santhanam, "Development of sugarcane bagasse ash based Portland pozzolana cement and evaluation of compatibility with superplasticizers," *Construction and Building Materials* 68, **2014**, pp. 465 – 475.
32. A. Bahurudeen and Manu Santhanam, "Influence of different processing methods on the pozzolanic performance of sugarcane bagasse ash", *Cement and Concrete Composites* 56, **2015**, pp. 32 – 45.

33. N. Shajil, S. M. Srinivasan, and M. Santhanam (2015), "An experimental study on self-centering and ductility of pseudo-elastic shape memory alloy (PESMA) fiber reinforced beam and beam-column joint specimens," *Materials and Structures* DOI 10.1617/s11527-015-0538-1.
34. A Bahurudeen, Deepak Kanraj, V Gokul Dev, and Manu Santhanam, "Performance Evaluation of Sugarcane Bagasse Ash Blended Cement in Concrete," *Cement and Concrete Composites* 59 (2015), pp. 77 – 88.
35. Bahurudeen, A., Wani, K., Basit, M., and Santhanam, M. (2015). "Assesment of Pozzolanic Performance of Sugarcane Bagasse Ash." *ASCE J. Mater. Civ. Eng.* 10.1061/(ASCE)MT.1943-5533.0001361.
36. M Y J Liu, U J Alengaram, M Santhanam, M Z Jumaat, K H Mo, "Microstructural Investigations of Palm Oil Fuel Ash and Fly Ash Binders in Lightweight Aggregate Foamed Geopolymer Concrete," *Construction and Building Materials*, 120 (2016), pp. 112 - 122.
37. Y K Ramu, I Akhtar and M. Santhanam, "Use of Adiabatic Calorimetry for Performance Assessment of Concretes," *Advances in Cement Research* Vol 28, No 8 (2016), pp 485 - 493.
38. M. Murugan, M. Santhanam, S. Sen Gupta, T. Pradeep, and S P Shah, "Influence of 2D rGO Nanosheets on the Properties of Cement Paste," *Cement and Concrete Composites*, Volume 70, (2016), pp 48-59.
39. B S Dhanya, M. Santhanam, "Performance Evaluation of Rapid Chloride Permeability Test in Concretes with Supplementary Cementitious Materials," *Materials and Structures* (2017), DOI:10.1617/s11527-016-0940-3
40. K. P. Ramaswamy and Manu Santhanam, "A Study of Deterioration of Cement Paste Due to Acid Attack Using X-ray Computed Microtomography," *Advances in Cement Research* (2018), Vol. 30, No. 3, pp. 123 - 138.
41. Yuvaraj Dhandapani and Manu Santhanam, "Assessment of pore structure evolution in the limestone calcined clay cementitious system and its implications for performance," *Cement and Concrete Composites* Vol 84 (2017), pp 36 – 47.
42. S. Mahima, A. Bahurudeen, Manu Santhanam, and K Jayachandran, "Service Life Prediction of Bagasse Ash Blended Concrete in Marine Splash Zone," *Materials Today: Proceedings* 4 (2017), pp. 9664 – 9672.
43. Saarthak Surana, Radhakrishna G Pillai and Manu Santhanam, "Performance evaluation of curing compounds using durability parameters," *Construction and Building Materials* 148 (2017), pp. 538 – 547.
44. S. Deepika, G. Anand, A. Bahurudeen and Manu Santhanam, "Construction Products with Sugarcane Bagasse Ash Binder," *ASCE J. Mater. Civ. Eng.* Vol. 29(10) (2017): 04017189.
45. D. Yuvaraj and M. Santhanam, "Phases Assemblage of the Hydration Products of Trial Blends of OPC, Limestone and Calcined Clay," *Cement International* Vol. 15 (2017), pp. 76 – 79.
46. Yuvaraj Dhandapani, T. Sakthivel, Manu Santhanam, Ravindra Gettu, Radhakrishna G Pillai, "Mechanical properties and durability performance of concretes with Limestone Calcined Clay Cement (LC3)," *Cement and Concrete Research* Vol. 107 (2018), pp. 136 – 151.
47. Murugan Muthu, Manu Santhanam, and S Mathava Kumar, "Pb removal in pervious concrete filter: effects of accelerated carbonation and hydraulic retention time," *Construction and Building Materials* Vol. 174 (2018), pp. 224 – 232.

48. Murugan Muthu and Manu Santhanam, "Effect of reduced graphene oxide, alumina and silica nanoparticles on the deterioration characteristics of Portland cement paste exposed to acidic environment," *Cement and Concrete Composites* 91 (2018), pp. 118 – 137.
49. Suruthi Kamalakannan, Ramya S T, Radhakrishna Pillai and Manu Santhanam, "Factors affecting the performance characteristics of cementitious grouts for post-tensioning applications," *Construction and Building Materials* Vol. 180 (2018), pp. 681 – 691.
50. B S Dhanya, Manu Santhanam, Ravindra Gettu, and Radhakrishna Pillai, "Performance Evaluation of Concretes Having Different Supplementary Cementitious Material Dosages Belonging to Different Strength Ranges," *Construction and Building Materials*, Vol. 187 (2018), pp. 984 – 995.
51. Ruben Snellings, Jacek Chwast, Ozlem Cizer, Nele De Belie, Yuvaraj Dhandapani, Pawel Durdzinski, Jan Elsen, Johannes Haufe, Doug Hooton, Ce'dric Patapy, Manu Santhanam, Karen Scrivener, Didier Snoeck, Laurent Steger, Sui Tongbo, Anya Vollpracht, Frank Winnefeld, Barbara Lothenbach, "Report of TC 238-SCM: Hydration stoppage methods for phase assemblage studies of blended cements - results of a round robin test," *Materials and Structures* (2018) 51:111.
52. Xuerun Li, Ruben Snellings, Mathieu Antoni . Natalia Mariel Alderete, Mohsen Ben Haha, Shashank Bishnoi, Ozlem Cizer, Martin Cyr, Klaartje De Weerd, Yuvaraj Dhandapani, Jose'e Duchesne, Johannes Haufe, Doug Hooton, Maria Juenger, Siham Kamali-Bernard, Sabina Kramar, Milena Marroccoli, Aneeta Mary Joseph, Anuj Parashar, Cedric Patapy, John L. Provis, Sergio Sabio, Manu Santhanam, Laurent Steger, Tongbo Sui, Antonio Telesca, Anya Vollpracht, Felipe Vargas, Brant Walkley, Frank Winnefeld, Guang Ye, Maciej Zajac, Shizhe Zhang, Karen L. Scrivener, "Reactivity tests for supplementary cementitious materials: RILEM TC 267-TRM phase 1," *Materials and Structures* (2018) 51:151.
53. R. Gettu, R. Pillai, M. Santhanam, A. Basavaraj, S. Rathinarajan, B. S. Dhanya, "Sustainability-Based Decision Support Framework for Choosing Concrete Mixture Proportions," *Materials and Structures* (2018) 51:165.
54. Ruben Snellings, Jacek Chwast, Ozlem Cizer, Nele De Belie, Yuvaraj Dhandapani, Pawel Durdzinski, Jan Elsen, Johannes Haufe, Doug Hooton, Ce'dric Patapy, Manu Santhanam, Karen Scrivener, Didier Snoeck, Laurent Steger, Sui Tongbo, Anya Vollpracht, Frank Winnefeld, Barbara Lothenbach, "RILEM TC-238 SCM recommendation on hydration stoppage by solvent exchange for the study of hydrate assemblages," *Materials and Structures* (2018) 51:172.
55. M. S. Hemalatha and Manu Santhanam, "Characterizing Supplementary Cementing Materials in Blended Mortars," *Construction and Building Materials* 191 (2018), pp. 440 – 459.
56. Murugan Muthu, Cr Krishnan, Manu Santhanam, Murali Rangarajan and Mathava Kumar, "Heavy Metals Removal and Leaching from Pervious Concrete Filter: Influence of Operating Water Head and Reduced Graphene Oxide Addition," *ASCE Journal of Environmental Engineering* 145 (9) (2019): 04019049.
57. C. Siva Teja, V. Yamuna, A. Bahurudeen, Manu Santhanam, Athira Gopinath, Durability of Concrete with Agro Waste - A Local Approach to Sustainability, *ICE Journal of Green Materials* 7(2) (2019), pp. 84 – 96.
58. Radhakrishna G. Pillai, Ravindra Gettu, Manu Santhanam, Sripriya Rengaraju, Yuvaraj Dhandapani, Sundar Rathnarajan, Anusha S. Basavaraj, "Service Life and Life Cycle Assessment of Reinforced Concrete Systems with Limestone Calcined Clay Cement," *Cement and Concrete Research* (2019), Vol. 118, pp. 111 – 119.
59. A V Rahul, Manu Santhanam, Hitesh Meena, Zimam Ghani, "3D printed concrete: mixture design and test methods," *Cement and Concrete Composites* 97 (2019), pp. 13 – 23.

60. Quoc Huy Vu, Gabriel Pham, Alain Chonier, Eric Brouard, Sundar Rathnarajan, Radhakrishna Pillai, Ravindra Gettu, Manu Santhanam, Frederico Aguayo, Kevin J Folliard, Michael D Thomas, Ted Moffat, Caijun Shi, Anup Sarnot, "Impact of different climates on the resistance of concrete to natural carbonation," *Construction and Building Materials* 216 (2019), pp. 450 – 467.
61. S. Divya Rani, Manu Santhanam, and Sangeeta Bais, "Historic Incised Plasterwork of India – Characteristics and microstructure," *Construction and Building Materials* 221 (2019), pp. 253 – 262.
62. K. Mohammed Haneefa, S. Divya Rani, R. Ramasamy, and Manu Santhanam, "Microstructure and geochemistry of lime plaster mortar from a heritage structure," *Construction and Building Materials* 225 (2019), pp. 538 – 554.
63. Swathy Manohar, Manu Santhanam, and Naresh Chockalingam, "Performance and microstructure of bricks with protective coatings subjected to salt weathering," *Construction and Building Materials* 226 (2019), pp. 94 – 105.
64. A V Rahul, Manu Santhanam, Hitesh Meena, Zimam Ghani, "Mechanical characterization of 3D printable concrete," *Construction and Building Materials* 227 (2019), 116710.
65. Yuvaraj Dhandapani, Manu Santhanam, Investigation on the microstructure-related characteristics to elucidate performance of composite cements with limestone-calcined clay combination, *Cement and Concrete Research* 129 (2020), 105959.
66. Swathy Manohar, Karpagam Bala, Manu Santhanam, and Arun Menon, "Characterization and Deterioration Mechanisms in Coral Stones Used in a Historical Monument in a Saline Environment," *Construction and Building Materials* 241 (2020), 118102.
67. A V Rahul, Abhishek Sharma Govind Sharma, and Manu Santhanam, "A descriptivity-based approach for the assessment of phase separation during extrusion of cementitious materials," *Cement and Concrete Composites* 108 (2020), 103546.
68. A V Rahul and Manu Santhanam, "Evaluating the printability of concretes containing lightweight coarse aggregates," *Cement and Concrete Composites* 109 (2020), 103570.
69. Pu Yang, Yuvaraj Dhandapani, Manu Santhanam, and Narayanan Neithalath, "Simulation of chloride diffusion in fly ash and limestone calcined clay cement concrete and the influence of damage on service life," *Cement and Concrete Research* 130 (2020), 106010.
70. Athira G., Bahurudeen A. Sahu P K, Santhanam M., Nanthagopalan P, Lalu S, "Effective utilization of sugar industry waste in Indian construction sector: A geospatial approach," *Journal of Material Cycles and Waste Management* Vol 22, No. 3, (2020), pp 724 – 736.
71. A V Rahul, Atul Narayan S P, N Neithalath and Santhanam M., "A thermodynamic framework for modelling thixotropic yield stress fluids: application to cement pastes," *Journal of Non-Newtonian Fluid Mechanics* 281 (2020), 104318.
72. S A O Nair, S Panda, M. Santhanam, G. Sant and N Neithalath, "A critical examination of the influence of material characteristics and extruder geometry on 3D printing of cementitious binders," *Cement and Concrete Composites* 112 (2020), 103671.
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Patents filed or granted

File No.	Title	Type	Application No.	Filing Date	Status
1530	Low cost, high strength and fire resistant instant concrete housing using slag, fly ash and bagasse ash blended geopolymers for inaccessible locations; Inventors: A Bahurudeen, S Anand Kumar, Athira G, and M. Santhanam	PATENT	201741018782	2017-05-29	Pending - External
1845	Flowable, pre-blended cementitious grout with resistance to bleeding and the formation of soft grout for structural and geotechnical applications; Inventors: R.G. Pillai, M. Santhanam, R. Gettu and M.K. Mohan.	PATENT	201941021719	2019-05-31	Pending - External

Miscellaneous

Member of Editorial Board for

Advances in Cement Research

ASCE Journal of Materials in Civil Engineering (Associate Editor)

Journal of Sustainable Cement Based Materials

Journal of Cement and Concrete Composites

Indian Concrete Journal

Reviewer for

Cement and Concrete Research

Cement and Concrete Composites

Construction and Building Materials

Materials and Structures

ACI Materials Journal

ASCE Journal of Materials in Civil Engineering

Waste Management

Indian Concrete Journal

Indian Concrete Institute Bulletin

Indian Journal of Engineering and Materials Sciences

Sadhana

Current Science

Committee involvement

RILEM TC-211 Performance in aggressive environments

RILEM TC-230 Performance Based Specifications and Control of Concrete Durability

RILEM TC-238: Supplementary Cementitious Materials in Concrete

RILEM TC-251: Sulfate resistance testing
RILEM TC-267: Tests for reactivity of supplementary cementitious materials
RILEM TC-CCL: Calcined Clays as Supplementary Cementitious Materials (Secretary)
ICI Technical Committee on Chemical Admixtures
ICI Technical Committee on Durability (Secretary)
Contributor for *fib* Model Code 2020