



Qualification

- **Ph.D.** in Structural Engineering, Indian Institute of Technology Madras, Chennai, 2012-2017
- **M.E.** in Structural Engineering, College of Engineering Guindy, Anna University, Chennai 2009-2011
- **B.E.** in Civil Engineering, Alagappa Chettiyar Government College of Engineering and Technology, Karaikudi 2005-2009

Research Interests

- Earthquake Resistant Design of Structures
- Steel – Concrete Composite Structures
- Development of New Alternate Materials
- Fire Engineering
- Stability of Steel Structures

Experience

From	To	Designation	Organisation
September 2022	Ongoing	Assistant Professor – Grade I	National Institute of Technology Tiruchirappalli (NITT)
March 2018	September 2022	Assistant Professor – Grade II	National Institute of Technology Tiruchirappalli (NITT)
May 2017	March 2018	Assistant Professor (Sr.)	Vellore Institute of Technology (VIT), Vellore
January 2017	May 2017	Institute Post – Doctoral Fellowship	IIT Madras
November 2011	June 2012	Assistant Engineer	Rural Development and Panchayat Raj Department, Govt. of Tamil Nadu
July 2011	October 2011	Management Trainee Engineer	Afcons Infrastructure Ltd

International Journals

1. M. G. Sreelakshmi, Uma Chandru, **R. Senthilkumar** (2023), "Strengthening Stainless Steel Tubular Beams using Fibre-reinforced Concrete incorporating Sugarcane Bagasse Ash", *Journal of Constructional Steel Research*, DoI: <https://doi.org/10.1016/j.jcsr.2023.108197>
2. Uma Chandru, A. Bahurudeen, **R. Senthilkumar** (2023), "Systematic comparison of different recycled fine aggregates from construction and demolition wastes in OPC concrete and PPC concrete", *Journal of Building Engineering*, DoI: <https://doi.org/10.1016/j.jobee.2023.106768>
3. Sanjana S Kumar, R. Rithuparna, **R. Senthilkumar**, A. Bahurudeen (2023), "Cleaner production of waste-derived alkali activators from industrial and agricultural by-products for sustainable alkali activated binders", *Construction and Building Materials*, DoI: <https://doi.org/10.1016/j.conbuildmat.2023.131824>
4. Divya Mohan, Arun Krishna, **Senthilkumar R** (2023), "Numerical studies on the behavior of cold-formed double-channel shear connector", *Structural Concrete*, DoI: <https://doi.org/10.1002/suco.202200579>
5. Divya Mohan, **Senthilkumar R**, Prince George, Jayabalan P, Bahurudeen A, Konstantinos Daniel Tsavdaridis (2023), "Development of Novel Shear Connectors for Cold-Formed Steel Concrete Composite Beams", *Construction and Building Materials*, DoI: <http://dx.doi.org/10.2139/ssrn.4371102>
6. **R Senthilkumar**, Pradeesh K and Uma Chandru (2023), "Progress and challenges in double skin steel-concrete composite walls: a review", *Innovative Infrastructure Solutions*, DoI: <https://doi.org/10.1007/s41062-022-00973-y>.
7. KS Teja, **Senthilkumar R**, Athira G., and Bahurudeen A., (2022), "Reuse of Uncontrolled Burnt Bagasse Ash from Sugar Industry with Waste Rubber Powder in Construction: A Waste to Wealth Approach for Sugar Mills", *Sugar Tech, an International Journal of Sugar Crops and Related Industries*, Vol.43, <https://doi.org/10.1007/s12355-022-01140-4>.
8. **Senthilkumar R**, Chinchinada Praveen Akhil Sai Kumar, R Saravanakumar, Dasari Prem Kumar, (2022), "Numerical Study on Restrained Thermal Elongation of Cold-Formed Steel Column Subjected to Non-Uniform Thermal Loading under Transient State", *Fire Safety Journal, Elsevier*, Vol. 131, pp 103608.
9. SN Chinnu, SN Minnu, A Bahurudeen and **Senthilkumar R** (2022), "Influence of palm oil fuel ash in concrete and a systematic comparison with widely accepted fly ash and slag: A step towards sustainable reuse of agro-waste ashes", *Cleaner Materials, Elsevier*, 5, 100122
10. **Senthilkumar R**, Divya M, Divya Roy S, Bahurudeen A, Siva Avudaiappan and Konstantinos Daniel Tsavdaridis (2022) "Behaviour of cold-formed steel-concrete composite columns under axial compression: Experimental and numerical study", *Structures, Elsevier*, 44, 487-502
11. **Senthilkumar R**, Divya M and Jayabalan P. (2022). "Push Out Tests on Various Shear Connectors Used for Cold-Formed Steel Composite Beam", *Steel and Composite Structures, Techno press*, Vol 42(3).
12. S.N.Chinnu, S.N.Minnu, A.Bahurudeen and **Senthilkumar R**, (2021) "Reuse of industrial and agricultural by-products as pozzolan and aggregates in lightweight concrete", *Construction and Building Materials, Elsevier*, 302,124172
13. **Senthilkumar R** and Dasari prem Kumar (2021), " Numerical studies on restrained cold-formed steel column subjected to transient thermal loading", *Structures, Elsevier*, Vol. 32, pp. 161-169
14. S.N.Chinnu, S.N.Minnu, A.Bahurudeen and **Senthilkumar R**, (2021) "Recycling of industrial and agricultural wastes as alternative coarse aggregates: A step towards cleaner production of concrete", *Construction and Building Materials, Elsevier*, Vol.287, 123056.

15. T Shanmugapriya and **Senthilkumar R** (2020). “Flexural behaviour of reinforced concrete beams with silica fume and processed quarry fines” *Advances in Concrete Construction*, Techno press, 10, pp. 161-169.
16. **Senthilkumar R** and Satish Kumar S R. (2020). “Seismic Performance of Semi-Rigid Steel Concrete Composite Frames”. *Structures*, Elsevier, Vol. 24, pp. 526-541.
17. Prafulla P. S., Jittin V., Bahurudeen A., Athira G., **Senthilkumar R** (2019), “International Perspectives on Industrial Concrete Flooring and the Way Forward in India”, *Indian Concrete Journal*, pp 59-75.
18. M Suneel Kumar, **Senthilkumar R**, L Sourabha (2019), “Seismic Performance of Special Concentric Steel Braced Frames”, *Structures*, Elsevier, Vol. 20, pp 166-175.
19. **Senthilkumar R**, Sunil T S, P Jayabalan (2019) , “Buckling Behaviour of Hollow Flange Channel Beam Sections in Bending”, *International Journal of Steel Structures*, Springer, Vol.19, pp 1454-1464.
20. **Senthilkumar R** and Satish Kumar S R (2017), “Design of Semi-Rigid Steel Concrete Composite Frames for Seismic Performance”, *Journal of Structural Engineering (SERC)*, Vol.44 (2), pp 136-147.

International/National Conference Proceedings

1. Tribhuvan Shubham, **Senthilkumar R**, Tamizharasi G - "Seismic performance of RC SMRF building with open ground storey" - 3rd European Conference on Earthquake Engineering & Seismology - 2022 at Bucharest, Romania.
2. Shahim A, **Senthilkumar R**, Tamizharasi G - "Seismic performance of Dual system (Reinforced Concrete Frame with Shear walls) Buildings" - 3rd European Conference on Earthquake Engineering & Seismology - 2022 at Bucharest, Romania.
3. Rahul Kumar Sonker, **Senthilkumar R**, Sanjana S Kumar - "Behaviour of glass fiber reinforced polymer (GFRP) structural profiles under axial compression" - International Conference on Additive Manufacturing and Allied Technologies - 2022 at NIT Trichy.
4. Aarthi S, **Senthilkumar R** – “Bioclimatic design variations of french colonial buildings and its relevance to its context” – An International Virtual Conference on “Smart and Sustainable Development of Urban Green Infrastructure in India and Canada – 2022” at NIT, Trichy.
5. Divya M, **R Senthil Kumar** – “Behavior of self-tapping screws under various assembly pattern” - An International Virtual Conference on “Smart and Sustainable Development of Urban Green Infrastructure in India and Canada – 2022” at NIT, Trichy.
6. Divya M, **R Senthil Kumar** – “State of the art on shear connectors suitable for cold formed steel concrete composite system” - An International Virtual Conference on “Smart and Sustainable Development of Urban Green Infrastructure in India and Canada – 2022” at NIT, Trichy.
7. Cibi Chakravarthy A, Prashant Kumar Dwivedi, R Haripriya, E Spandana Neelakanteswari, **R Senthil Kumar** – “Structural optimization and embodied energy analysis of an institute building” - An International Virtual Conference on “Smart and Sustainable Development of Urban Green Infrastructure in India and Canada – 2022” at NIT, Trichy.
8. **Senthilkumar R**, Divya M and Prince George – “Behaviour of Self Tapping Screws Under Shear” – Indian Structural Steel Conference – 2020 at IIT Hyderabad.
9. Ajit Sahu , **Senthil Kumar R** – “A Study on Structural Behaviour of Hot rolled Steel Compression Members Under Thermal Loading” - Indian Structural Steel Conference – 2020 at IIT Hyderabad.

10. **Senthilkumar R**, Karthikeyan M, and Sneha Liya George – “Finite Element Modeling of Double Plate Flat Composite Shear Wall under Lateral Load” - Indian Structural Steel Conference – 2020 at IIT Hyderabad.
11. R Arvindh Raj , **Senthilkumar R**, T Ashok kumar, S Ramkumar (2019). Retrofitting Methods for Shear Strengthening of RC Beams Using CFRP, *Structural Engineering and Construction Management 2019 (ICSECM 2019)*, Kandy, Srilanka
12. Divya M, **Senthilkumar, R.** and Jayabalan P. (2018). Prediction of flexural capacity of cold formed steel-concrete composite beam, *Structural Engineering Convention 2018, Jadavpur University*
13. Dasari Prem Kumar and **Senthilkumar, R.** (2018). Studies on Buckling of Cold-Formed Steel Compression Members under Fire, *Structural Engineering Convention 2018, Jadavpur University*
14. **Senthilkumar, R. and Mahesh** (2018). Impact of Masonry Infill Walls on the Seismic Response of the RCC Buildings, *Structural Engineering Convention 2018, Jadavpur University*
15. **Senthilkumar, R.** and Satish Kumar, S.R. (2015). Design guidelines of Semi-Rigid Steel Concrete Composite Frames, *Advances in Structural Engineering and Mechanics (ASEM15)*, Incheon, Korea.
16. **Senthilkumar, R.** and Satish Kumar, S.R. (2014). Seismic Performance of Semi-Rigid Steel - Concrete Composite
17. Multi-Storey Frames, *Frontier Applications in Civil and Environmental Engineering (FACEE, 2014)*, CIT Coimbatore
18. **Senthilkumar, R.** and Satish Kumar, S.R. (2014). Performance based Seismic Design of Semi-Rigid Steel Concrete Composite Frames, *Structural Engineering Convention (SEC 2014)*, IIT Delhi.

Book Chapter & Monographs

1. **Senthilkumar R** and Satish Kumar S R. “*Advances in Structural Dynamics*”, Vol. Two, Springer India, 2015 ISSN/ISBN No: 978-81-322-2192-0
2. Jithin V, Athira G, A Bahurudeen and **Senthilkumar R.** “ *Sustainable Construction and Building Materials*”, Springer India, 2018 , ISSN/ISBN No: 978-981-13-3316-3

Patents

1. **Senthilkumar R**, Divya M, Bahurudeen A and Jayabalan P “Cold-formed steel-concrete composite beam with a prefabricated shear connector and method thereof “, Indian Patent, No. 202241021753, filed on 12/04/2022.
2. Bahurudeen A, Jittin V, Anand and **Senthilkumar R** “An apparatus for determining gas permeability of concrete and method thereof”, Indian Patent, No. 201911008791, filed on 06/03/2019

Research Project

1. “Emerging Alternative Construction Technology for the Affordable Lightweight Housing in Seismic Prone Areas”, Rs. 21.46 Lakhs, Principal Investigator, funded by SERB, Core Research Grant (Ongoing).
2. “Research on Waterproofing and Retrofitting of Structural Members”, Rs. 5.75 Lakhs, Principal Investigator, funded by M/s. DYNARM (Ongoing).

3. “Buckling Behaviour of Cold-Formed Steel Compression Members under Thermal Loading”, Rs.5.00 Lakhs, Principal Investigator, SEED Grant, National Institute of Technology: Trichy (Completed).

Teaching Experience in NIT Trichy

- Basic Steel Structural Elements [UG]
- Advanced Steel Structural Elements [UG]
- Basic Reinforced Concrete Design [UG]
- Analysis of Indeterminate Structures [UG]
- Natural Disaster Mitigation and Management [UG]
- Engineering Mechanics [UG]
- Construction Materials [UG]
- Surveying [UG]
- Basic Civil Engineering [UG]
- Survey Laboratory [UG]
- Strength of Materials Laboratory [UG]
- Building Planning and Drawing Laboratory [UG]
- Structural Dynamics [PG]
- Seismic Design of Structures [PG]

Ph.D. / M.Tech. / B.Tech. Projects Guided in NIT Trichy

Ph.D. Supervision

SI No	Name	Title	Status
1	Divya M	Behaviour of Cold Formed Steel Concrete Composite Beam	Completed
2	Sharmila	Light Weight Concrete	Ongoing
3	Saravanakumar R	Behaviour of Composite Columns under Thermal Loading	Ongoing
4	Uma Chandru	Light weight Steel-Concrete composite walls	Ongoing
5	Rajiv Gandhi	Behaviour of Thin-walled compression members under Thermal loading	Ongoing
6	Shreekanth Birgonda	Replacement of aggregate in concrete using IFS	Ongoing
7	Vivek T	Performance based seismic design of eccentrically braced frames	Ongoing

M.Tech. Supervision

SI No	Name	Title	Year
1.	Mohit L B	Seismic Performance of Eccentrically Steel Braced Frames	2017-2018

2.	Aakash R B	Non-linear Response of Regular Steel Frames for Different Column to Beam Strength Ratios	2017-2018
3.	Mahesh G P	Impact of the Infill Masonry Wall on the Seismic Response of the RC building	2017-2018
4.	Souraksha D	Lateral Load Evaluation of Precast Shear Wall	2017-2018
5.	Sarvesh V	Lateral Torsional Buckling of Non-Prismatic Beams	2017-2018
6.	M Aman	Experimental Investigation on Bond Behaviour of a Precast Connection	2017-2018
7.	Dasari Prem Kumar	Analysis of Cold-Formed Steel Column Subjected to Thermal Loading	2018 – 2019
8.	Karthikeyan M	Behaviour of Cold Formed Steel Concrete Composite Shear Wall Under Lateral Load	2018 – 2019
9.	Kolla Surya Teja	Strength Characteristics of Bagasse Ash Blended Concrete	2018 – 2019
10.	Divya Roy S	Experimental and Numerical Investigations on The Axial Load Behaviour of Cold-Formed Steel-Concrete Composite Columns	2019 – 2020
11.	Prince George	Development of Novel Shear Connectors for Cold-Formed Steel Concrete Composite Beam	2019 – 2020
12.	Rahul Kumar Sonker	Behaviour of GFRP Structural Profiles Under Compression	2019 – 2020
13.	Sneha Liya George	Experimental and Numerical Studies of Profiled Steel-Concrete Composite Shear Wall	2019 – 2020
14.	Sahu Ajit Kumar	Numerical Analysis of Hot-Rolled Steel Columns Subjected to Thermal Loading	2019 – 2020
15.	Arun Krishna VS	Numerical analysis of cold-formed channel shear connector under push-out test	2020 – 2021
16.	Chinchinada Praveen Akhil Sai Kumar	Numerical analysis on cold formed steel column subjected to non-uniform thermal loading	2020 – 2021
17.	Chinnu S Nair	Service Life Prediction of Rice Straw Ash Blended Concrete	2020 – 2021
18.	Sanjana S Kumar	Behaviour of alkali activated concrete filled FRP tube under axial compression	2021 – 2022
19.	Sreelakshmi M G	Flexural behaviour of sugarcane bagasse ash blended fiber reinforced concrete filled stainless steel tubular beam	2021 – 2022
20.	Shahim Asad K	Seismic performance of dual system building	2021 – 2022
21.	Shubham Shirish Tribhuvan	Seismic performance of RC SMRF Building with Open Ground Storey	2021 – 2022
22.	Arunkumar H	Behaviour of Flat and Profiled composite shear walls with Boundary elements under combined loading	2022 – 2023
23.	Akhil Thomas G	Development of connection between Precast Double Skin Composite Shear wall and slab	2022 – 2023
24.	Bramhanjai Krushna Vijay	Experimental and Numerical analysis of Cold-formed steel Column with web holes subjected to Thermal loading	2022 – 2023

Awards/Recognition

- Awarded for Best Performer in Faculty from National Institute of Technology Tiruchirappalli, 2023
- Awarded for Best Innovator from National Institute of Technology Tiruchirappalli, 2023
- Received Shastri Conference and Lecture Series Grant (SCLSG) from Shastri Indo-Canadian Institute (SICI), February, 2022
- Received International Travel Support (Grant) from SERB, Department of Science and Technology (DST), Government of India on 2022
- Awarded for Best Performer in Faculty from National Institute of Technology Tiruchirappalli, 2020 and 2021
- Awarded for Institute Postdoctoral Fellowship from IIT Madras, Jan 2017 – May 2019
- Awarded HTRA Fellowship by MHRD, August 2009- May 2011
- Awarded for Best Placement Ambassador from College of Engineering, Guindy, 2011

Notable Consultancy Projects

List of Project Implementation	Sponsoring agency	Year
Structural Audit of Income tax office building, Nagapattinam	CPWD Trichy	2022-2023
Structural design for Production Department Annex building at NIT Trichy - Principal Investigator	CPWD Trichy	2022-2023
Design Vetting and Structural Auditing at Malappuram, Kerala - Principal Investigator	Pan Pacific Engineering Services Pvt Ltd.	2022-2023
Structural Audit for ESIC buildings in Karnataka – Principal Investigator	ESIC Karnataka	2021-2022
Third-Party Quality Assurance at IIIT, Trichy - Principal Investigator	Teemage Builders Pvt Ltd. Tirupur	2020-2021
Structural Design & Detailing for Aqueduct Over Koraiyar River at LS 60.05 Km - Principal Investigator	P.W.D. WRD, Trichy	2021
Assessment of quality of construction of the project “Construction of 192 tenements at Kalmandhai in Trichy” - Principal Investigator	TNUHDB	2021-2022
Design Vetting for proposed construction of terminal market & weekly market at Mandi, Himachal Pradesh - Principal Investigator	Sonne Infrastructure Pvt. Ltd.	2022
Proof Checking of Design - Principal Investigator	Teemage Builders Pvt Ltd. Tirupur	2021

Vetting of Structural Design - DRDA Krishnagiri, Trichy, Indoor Stadium Hosur - Principal Investigator	Nanda & Associates	2020
Design and Drawings of Steel Bridge - Principal Investigator	The Executive Engineer, TWAD Board, Coimbatore	2020

Academic/Administrative Responsibilities at NIT Trichy

Position	Faculty/Department/Centre/Institution	From	To
Associate Dean (Planning and Development)	NIT Trichy	January 2020	March 2022
PG (Structural Engineering) Coordinator	NIT Trichy	February 2019	May 2022
Core Member for NBA (B.Tech. Civil)	Civil Engineering Department	March 2020	Till Date
Lab In-charge	Strength of Materials, Civil Engineering Department	November 2019	July 2022
Time Table and MIS Coordinator	NIT Trichy	May 2018	November 2019
Common Evaluation Committee Member for B.Tech. Projects	Civil Engineering Department,	January 2019	May 2019
Coordinator for M.S./Ph.D Admission	Civil Engineering Department,	November 2018	December 2019
Evaluation Committee Member for M.Tech. Projects	Civil Engineering Department,	July 2018	July 2021
Department Admission Committee for M.S./Ph.D	Civil Engineering Department,	July 2018	December 2019
Core Member for Officers Club	Institute Level	November 2019	Till Date
Member for Infrastructure Committee of 16th Convocation	Institute Level		November 2020
Member for Medals and Certificates of 15th Convocation	Institute Level		July 2019
Member for Seating and Logistics Committee of 14th Convocation	Institute Level		August 2018

Selected Invited/Guest Lectures Delivered

Sl No	Topic	Programme	College/Organizer
1.	Elastic and Plastic Analysis	Advancement in Concrete Science and Technology” under TEQIP III - Feb 2020	Government College of Engineering Salem, Tamil Nadu
2.	Seismic Analysis of Steel Structures	Faculty Development Programme, Nov 2019	Government College of Engineering Salem, Tamil Nadu
3.	Earthquake Resistant Design of Structures	Guest Lecture, July 2018	VV College of Engineering, Tamil Nadu
4.	Limit State Design	Workshop , September 2019	Solamalai College of Engineering, Tamil Nadu
5.	Design of Shear Walls	Guest lecture, Aug 2018	VIT Vellore

Selected Webinar/Keynote Delivered

- Embodied Energy and Green Buildings
 - SIR M Visveswaraya Institute of Technology, Bangalore, Karnataka, Sep 2020
 - SSN College of Engineering, Chennai, Tamil Nadu, August 2020
 - National Web Conference, Rajalakshmi College of Engineering, Chennai, Tamil Nadu, May 2020
 - CSIR – Online Summer Research Training Programme, CSIR NEIST, July 2020
- Seismic Analysis of Structures
 - AICTE Sponsored Six Days Online STTP on “Life Cycle Assessment and Structural Health Monitoring of Structures” Aarupadai Veedu Institute of Technology, Tamil Nadu, Dec 2020
 - Guest Lecture, Bannari Amman Institute of Technology, May 2020
 - Panimalar Engineering College, June 2020
- Steel – Concrete Composite System
 - “Advanced Concepts in Materials and Structural Engineering”, SRM and UNIMAS, Nov 2020
 - “Cold Formed steel Structures in Construction Industry”, CIT Coimbatore, Dec 2020

Conferences/Workshops Organized

- Vice Chairperson for International Virtual Conference on Smart and Sustainable Development of Urban Green Infrastructure in India and Canada (SSDUGI), 25 – 26 March, 2022 at National Institute of Technology Tiruchirappalli.

- Organising Secretary for Indian Geotechnical Conference 2021, 16 – 18 December 2021.
- Coordinator for National Workshop on “Self-Compacting Concrete”, 17th Jan 2018 at VIT Vellore
- Coordinator for National Workshop on “Earthquake Resistant Design of Structures”, 17th March 2018 at VIT Vellore

Reviewer for Journals/Conferences

- Engineering Structures
- Structures
- Structural Concrete
- Sugar Tech
- Indian Concrete Journal
- Journal of the Institution of Engineers

Professional Memberships

Member & Chartered Engineer - The Institution of Engineers India (IEI)

Member - Association of Consulting Civil Engineers

Links

- Google Scholar: <https://scholar.google.com/citations?user=votUHRYAAAAJ&hl=en>
- Scopus ID: 57203959751
- Orcid ID: <https://orcid.org/0000-0002-7058-7404>
- Detailed Profile: <https://www.nitt.edu/home/academics/departments/faculty/senthilr.pdf>

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