Dr. T. SAKTHIVEL, Ph.D.

Assistant Professor (Selection Grade)
A-207, Department of Civil Engineering
Dr. Mahalingam College of Engineering and Technology
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EDUCATION BACKGROUND

- **Ph.D., Civil Engineering** **July 2019**
  Indian Institute of Technology Madras, Chennai, INDIA.
  Thesis: Effect of the incorporation of slag, fly ash and limestone calcined clay on the compressive strength, elastic modulus and shrinkage of concrete
  Guide: Prof. Ravindra Gettu & Dr. Radhakrishna G. Pillai
- **M.E., Structural Engineering** **May 2009**
  Annamalai University, Annamalainagar, INDIA.
  Project: Behaviour of fly ash concrete filled steel tubular columns
- **B.E., Civil Engineering** **April 2007**
  Kongu Engineering College, Erode, INDIA.
  Projects: 1. Performance of hollow steel tubular beam in filled with concrete (an experimental study)
  2. Behaviour of concrete filled steel tubular columns

WORK EXPERIENCE

- **Assistant Professor (Selection Grade)** **Since, Nov. 2018**
  Dr. Mahalingam Coll. of Engg. & Tech. Pollachi, TN
  - *Teach B.E., and M.E., (Struct. Engg.) courses*
  - *Programme co-ordinator for M.E., (Struct. Engg.)*
  - *Guide research projects (B.E., & M.E.)*
  - *Curriculum and Syllabus formation*
  - *Struct. Engg. & Mechanics Laboratory i/c*
  - *Mentoring students for several competitions*
- **PhD Research Scholar (Full time)** **July 2011 - Nov. 2018**
  Indian Institute of Technology Madras, TN
  - *Half time teaching and research assistance, MHRD – GoI*
  - *Supported B.Tech., and M.Tech., students on experiments*
  - *Established creep and shrinkage laboratory*
  - *Involved in funded projects (viz., Lafarge, France; LC^3, Switzerland; L&T, India).*
- **Concrete Structural Engineer** **May 2010 –June2011**
  Zenith Consultant, Erode, TN
  - *Involved in concrete mix and R.C. structural elements design*
- **Lecturer** **June 2009 – April 2010**
  Kumaraguru Coll. of Tech., Coimbatore, TN
  - *Taught B.E., and M.E., (Struct. Engg.) courses*

RESEARCH INTEREST

- Effects of mineral and chemical admixtures on concrete
- Durability and long-term performance of concrete
- Development of sustainable construction materials
- Structural performance of RC elements
- Non-destructive testing methods for concrete structures

PUBLICATIONS

Orcid ID: 0000-0002-7313-9420

Refereed Journal Papers (Published)

JP2 **T. Sakthivel,** Ravindra Gettu, and Radhakrishna G. Pillai (2019) "Compressive Strength and Elastic Modulus of Concretes with Fly Ash and Slag" Journal of Institution of Engineers (India): Series A. *https://doi.org/10.1007/s40030-019-00376-w* (ISSN no: 2250-2157 Impact Factor: -)

JP1 Yuvaraj Dhandapani, **T. Sakthivel,** Manu Santhanam, Ravindra Gettu, and Radhakrishna G. Pillai (2018) "Mechanical properties and durability performance of concrete with limestone calcined clay cement (LC^3)" *Cement and Concrete Research,* 107, pp.136-151, (ISSN no: 0008-8846; Impact Factor: 6.21)

Journal Papers (In review)

JP# **T. Sakthivel,** Ravindra Gettu, and Radhakrishna G. Pillai "Calibration and Adjustment of RILEM B4 Model Parameters for Better Prediction of Shrinkage Response of Blended Cement Concrete" *Indian Concrete Journal.*

JP# **T. Sakthivel,** Ravindra Gettu, and Radhakrishna G. Pillai "Effect of Fly Ash and Slag on the Drying Shrinkage Response of Concrete". *Construction and Building Materials.*

JP# **T. Sakthivel,** and Arulraj Karthikaswamy "Influence of ternary blends on the long-term performance of concrete systems", *Arabian Journal for Science and Engineering*

Journal Papers (In Preparation)

#01 **T. Sakthivel** and G.V. Rakesh Senthil Kumar**, "**Effects of Super Absorbent Polymer in Autogenous Shrinkage of Concrete"

#02 **T. Sakthivel,** Ravindra Gettu, and Radhakrishna G. Pillai "Creep Response of blended cement concrete"

Conference Papers (indicate presenter)*

CP7 **T. Sakthivel*,** Ravindra Gettu, and Radhakrishna G. Pillai. "Application of shrinkage models for blended cement concrete systems" 74th RILEM Annual Week and 40th Cement & Concrete Science Conference, 31 August to 4 September 2020, University of Sheffield, United Kingdom

CP6 Ravindra Gettu, Manu Santhanam, Radhakrishna G. Pillai, Yuvaraj Dhandapani, **Sakthivel T.,** Sripriya Rengaraju, Sundar Rathnarajan, Fathima Suma M., Anusha S. Basavaraj and Sanoop Prakasan, "Summary of 4-years of research at IIT Madras on concrete with lime stone calcined clay cement (LC3)" International Conference on

Sustainable Materials, Systems and Structures 2019, Rovinj, Croatia

CP5 Ravindra Gettu, Manu Santhanam, Radhakrishna G. Pillai, Yuvaraj Dhandapani, **Sakthivel T.,** Sripriya Rengaraju, Fathima Suma M., Sanoop Prakasan, Sundar Rathnarajan, and Anusha S. Basavaraj "Recent research on limestone calcined clay cement (LC3) at IIT madras" Conference in Honour of Centennial of Laboratory of Construction Materials and 60th Birthday of Prof. Karen Scrivener (Lausanne, Switzerland), At Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland, 22 Aug 2018, pp. 76-79

CP4 **T. Sakthivel*,** Swathi Shantharaju, Ravindra Gettu and Radhakrishna G. Pillai "Assessment of shrinkage prediction models for fly ash concrete" International Conference on Advances in Construction Materials and Systems, 3rd R. N. Raikar Memorial International Conference and Gettu Kodur International Symposium, Mumbai, India, December 14-15, 2018.

CP3 **T. Sakthivel*,** Ravindra Gettu, and Radhakrishna G. Pillai "Influence of incorporation of fly ash and slag on the shrinkage response of common concretes" International conference on advances in construction materials and systems, 71st RILEM Week and ICACMS, Chennai, India, September 3-8, 2017.

CP2 **T. Sakthivel*,** E. K. Mohanraj, and S. Thiruganasambanam (2011) "Axial Capacity of concrete Filled Steel Tubular Slender Columns", *Proc., International Conference on Emerging Trends in Engineering*, INDIA. 762 - 767.

CP1 S. Thiruganasambandam, **T. Sakthivel*,** and M. Pravin (2009) "Flyash as Fine Aggregate in Polyester Resin Based Polymer Concrete - A Repair Material" *Proc., National Seminar on Disaster Mitigation and Rehabilitation of Structures*, INDIA. 303 – 309

PROJECTS WORKED

1. Study of durability and long-term performance of concrete under different environmental conditions, funded by Lafarge Centre De Recherche, France, (2010 – 2015)
    - *Prepared and executed the testing methodology for fresh and hardened concrete properties*
    - *Established creep and shrinkage laboratory (first of its kind @IITM) and prepared the protocols for long-term testing*
2. Performance of limestone calcined clay clinker cement (LC^3), funded by Swiss Agency for Development and Cooperation (SDC), Switzerland. Jointly worked with EPFL Switzerland, IIT-D, IIT-B, and TARA (2014-2018)
    - *Attended the stakeholders' meetings at Delhi, Mumbai & Chennai and presented the outcomes on the project (with the team)*
    - *Prepared the report mechanical properties of concrete with LC3 (Chapter-5).*
    - *Designed and executed LC^3 FRC concrete slab at IITM campus.*
3. Study of creep and shrinkage of self-compacting concrete funded by L&T constructions, India, (2016-2018)
    - *Organized and attended the stakeholders' meetings at IITM*
    - *Studied the long-term compressive strength, elastic modulus, shrinkage and creep of M50 and M65 grade SCC concrete.*
    - *Assisted project staff in data analysis (MATLAB) and prepared the project report*

COURSES TAUGHT

Dr. Mahalingam Coll. of Engg. & Tech. Pollachi

- 16CET41-Mechanics of Solids II, (B.E., 3 credits)
- 16CET53-Design of RC Elements, *(B.E., 4 credits)*
- 16CET54-Concrete Technology, *(B.E., 3 credits)*
- 16CET63 & 19CECN1502-Design of RC Structures, *(B.E.,4 credits)*
- 16CEE10-Maintenance and Rehabilitation of Structures, *(B.E., 3 credits)*
- 16CEL42-Strength of Materials Lab., *(B.E., 2 credits)*
- 19STEN1205-Design of Industrial Structures *(M.E., 3 credits)*
- 19STCN2101-Advanced Concrete Lab., *(M.E., 2 credits)*
- 19STPN3201-Mini Project with Seminar, *(M.E., 2 credits)*
- 19STPN5301 & 5401-Project I & II. *(M.E., 16 credits)*

Teaching theory and practical (laboratory) courses for 65+ B.E., and 15+ M.E., students. Based on the teaching philosophy and methodology, average subject wise (faculty) and course outcome feedback conveyed by the student was 93/100 and 3.45/4.0 respectively.

Indian Institute of Technology Madras, Chennai

- CE 3420-Concrete Technology (B.Tech)
- CE 5090-Construction Materials Laboratory (M.Tech)
- CE 3410-Construction Materials lab (B.Tech)

Involved in teaching the laboratory courses and assisting (viz., conducting surprise quizzes, periodic assessments) theory course for about two years.

Kumaraguru College of Technology., Coimbatore

- MEC211-Basic Civil and Mechanical Engineering *(B.E.)*
- U07CE502-Basic Structural Design ((Timber, Masonry & Steel)) *(B.E.)*
- SEE401-Advanced Concrete Technology *(M.E.)*
- SEE507-Advanced Design of Concrete Structures *(M.E.)*

Produced on an average of 93% in the university examinations.

INVITED TALKS

1. Delivered a talk on importance of long-term performance of concrete system in a two-day seminar on advanced concrete mix design at KCG College of Technology, Chennai on January 31, 2018.
2. Delivered a talk on sustainable construction materials for better tomorrow in one day national seminar on recent advancement in high performance concrete, at Dr. MCET, Pollachi, September 27, 2019.

STUDENTS GUIDED/SUPERVISED

Graduate

- 08 students (individual project)

Undergraduate

- 32 students (group project)

ADMINISTRATIVE RESPONSIBILITIES

- Project co-ordinator for M.E., structural engineering programme at Dr. MCET since December 2018
- Department co-ordinator for Institution Innovation Cell (IIC) at Dr. MCET since April 2019
- Guided two batch of students for national concrete canoe competition and presented at SRMIST, Chennai.
- Scholar in-charge for durability, creep and shrinkage laboratory at IIT Madras from April 2012- October 2018.
- Student representative member for safety monitoring in civil engineering laboratories at IIT Madras.
- Organising committee member for two international conferences *(2013 and 2017)*, six workshops, and two short-term courses at IIT Madras between July 2011 and October 2018.
- Department councillor for research scholars during the AY:2013-'14.
- Coordinator for research scholar meetings (BT&CM Div.) from June 2013 to December 2014.
- Active volunteer for society for the promotion of Indian classical music and culture amongst youth (SPIC MACAY).

REFERRALS

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