Pavithra Parthasarathy

Assistant Professor
Dept. of Civil Engineering
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Research Interests

- Microstructural characterisation of cementitious materials
- Geopolymer concrete
- Cement hydration
- Lightweight cementitious composite
- Nanomaterials for civil engineering applications

Educational Qualification

Aug 2015-Feb 2019

PhD in Civil Engineering (The Hong Kong University of Science and Technology, Hong Kong)

Thesis Title: "Study on Microstructural Behaviour and Mechanism of Seawater Cementitious Pastes"

Aug 2013-May 2015

Master of Technology in Civil Engineering (Indian Institute of Technology, Bhubaneswar, India)

Thesis Title: "Development and Behavioural Characteristics of Fly Ash based Geopolymer Concrete"

Aug 2009-May 2013

Bachelor of Technology in Civil Engineering (SRM University, Chennai, India)

FYP Title: "Effect of Multiwalled Carbon Nanotubes on Mechanical Properties of Concrete"

Research Work

- **Post-Doctoral Researcher**
  Institute of Applied Physics and Materials Engineering, University of Macau, Macau
  Duration: July 2019 – Dec 2019
  Project: "Innovative traffic monitoring system with cement-based piezoelectric sensors for smart city"

- **Researcher**
  Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Hong Kong
  Duration: Aug 2015 – Dec 2018

  Responsibilities: Working on the mechanism of interaction of ions present in seawater on the hardened cement paste and supplementary cementing materials (fly ash, slag) and studying its microstructural behaviour and properties through serious of experiments (Mechanical strength, XRD, TGA, SEM, TEM, FTIR, NMR & BET) and molecular dynamics simulation.

- **Research Master Student**
  School of Infrastructure, Indian Institute of Technology Bhubaneswar, India
  Duration: Aug 2013 – May 2015

  Responsibilities: Worked on the effect of different alkaline solution to binder ratio of fly ash based geopolymer concrete on its mechanical and durability properties. Successfully proposed a new mix design procedure of designing and developing low calcium fly ash based geopolymer system.

Academic Experience

- **Assistant Professor (Teaching)**
  School of Civil Engineering, REVA University, Bangalore
  Duration: Aug 2021 to May 2022
  Responsibilities:
  Conducting lecture classes, tutorial sessions, marking and grading examination papers and assignment for various courses at undergraduate level (Renewable Energy and Structural Analysis)

- **Teaching Assistant (PhD Candidate)**
  Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Hong Kong
  Duration: Aug 2015 to Dec 2018
  Responsibilities:
  Managing tutorial sessions, conducting laboratory sessions and grading home works and examination papers for various courses at undergraduate level (Construction Materials (CIVL2810) and Structural Analysis (CIVL3310))

- **GATE Scholarship Assistant (Research Master Studen**t)
  School of Infrastructure, Indian Institute of Technology Bhubaneswar, India
  Duration: Aug 2013 to May 2015
  Responsibilities:
  Holding the tutorial sessions and lab classes for undergraduate students (Advanced Structural & Geotechnical lab and Concrete Technology lab) and assisted them in final year project.

Industrial Experience

- **Internship Trainee**
  Engineering Design & Research Centre, Larsen & Toubro Constructions, Chennai, India
  Duration: March 2019 to June 2019
  Responsibilities:
  Analysing and design of Cricket stadium in Ahmedabad for different load conditions.

Publications

Peer-Reviewed International Journal Publication:

1. **P. Parthasarathy**, A. Hanif, Z. Li, Early-age properties of Cementitious paste made with seawater, Mat. Today: Proceedings, 65 (2) (2022), pp. 707-714.

2. **P. Parthasarathy**, M.S. Reddy, P. Dinakar, B.H. Rao, B. Satpathy, A. Mohanty, A mix design procedure for geopolymer concrete with fly ash, J. Clean. Prod. 133 (2016), pp. 117-125.

3. A. Hanif, **P. Parthasarathy**, H. Ma, T. Fan, Z. Li, Properties Improvement of Fly Ash Cenosphere Modified Cement Pastes Using Nano-Silica, Cem. Concr. Compos. 81 (2017) 35–48.

4. A. Hanif, **P. Parthasarathy**, Z. Lu, M. Sun, Z. Li, Fiber - Reinforced Cementitious Composites Incorporating Glass Cenospheres - Mechanical properties and Microstructure, Constr. Build. Mater. 154 (2017) 529-538.

5. A. Hanif, **P. Parthasarathy**, Z. Li, Utilizing Fly Ash Cenosphere and Aerogel for Lightweight Thermal Insulating Cement-Based Composites, Int. J. Civ., Env., Struc., Const. Arch. Engg., 11 (2) (2017) 84-90.

6. A. Hanif, Z. Lu, M. Sun, **P. Parthasarathy**, Z. Li, Green Lightweight Ferrocement Incorporating Fly Ash Cenosphere Based Fibrous Mortar Matrix, J. Clean. Prod. 159 (2017) 326–335.

7. Z. Lu, A. Hanif, G. Sun, R. Liang, **P. Parthasarathy**, Z. Li, highly dispersed Graphene Oxide electrodeposited Carbon Fiber reinforced cement-based materials with enhanced mechanical properties, Cem. Concr. Compos. 87 (2018) 220–228.

8. Z. Lu, X. Li, A. Hanif, B. Chen, **P. Parthasarathy**, J. Yu, Z. Li, Early-age interaction mechanism between the graphene oxide and cement hydrates, Constr. Build. Mater. 152 (2017) 232–239.

9. T.Ch. Madhavi, **P. Parthasarathy**, S.B.Singh, S.B.V. Raj, S. Paul, Effect of Multiwalled Carbon Nanotubes on Mechanical Properties of Concrete, Int. J. Scientific Research, 2(6) (2013) 166-168.

Peer-Reviewed International Conference Publications:

1. **P. Parthasarathy**, A. Hanif, H. Shao, Z. Li, Microstructural and Morphological Studies of Ordinary Portland Cement Paste and Fly Ash based Geopolymer in the presence of Chloride ions, in: 71st RILEM Week ICACMS 2017 - Int. Conf. Adv. Constr. Mater. Syst. Chennai, India 3 - 8 Sept. 2017, 2017.

2. A. Hanif, **P. Parthasarathy**, Z. Li, Utilizing Fly Ash Cenosphere and Aerogel for Lightweight Thermal Insulating Cement-Based Composites, in: ICGBMCE 2017 19th Int. Conf. Green Build. Mater. Civ. Eng. United Kingdom Febr. 16 - 17, 2017, 2017

3. **P. Parthasarathy**, M.S.Reddy, P.Dinakar, B.H. Rao, B. Satpathy, A. Mohanty, Effect of the Na2SiO3/NaOH Ratio and NaOH Molarity on the synthesis of Fly Ash-based Geopolymer Mortar, Geo-Chicago 2016, 272 GSP, p.336-344, 15 – 18 August 2016, 2016.