

## Prashanth V P, Assistant Professor, JSSSTU, Mysuru.



**Name** : PRASHANTH V P

**Designation** : Assistant Professor, Research Scholar in IITH.

**Department** : Construction Technology and Management, SJCE, Mysuru.

**Date of Joining** : 24 Aug 2012. PhD- Jan 2017.

I have been involved in teaching, research and continuing education activities of the department from 24<sup>th</sup> Aug 2012. I got an opportunity to perceive **Ph.D in IIT, Hyderabad**. Under the guidance Dr. Amirtham Rajgopal and Dr. G.P. Chandradhara for the academic year Jan – 2017-18. Course work completed with B+ (75%-80%).

### **Research Details:-**

**Title:** Understanding the interaction between Interface and crack behavior of Recycled Aggregate Concrete

### **Objectives:**

1. A study on Characterization of Recycled aggregate (RA) in terms of physical and mechanical properties with conventional aggregate to use as filler in conventional concrete. (IS 383, IS 2386, ASTM).
2. To study the Fracture Behaviour of RAC under flexure loading with pre-defined crack. The study will investigate fracture parameters of RAC. Such as fracture energy, length of fracture process zone, CMOD Relation for crack initiation, crack propagation for different grades of RAC. The experimental results will be calibrated using DIC measurement.
3. To study the influence of size on fracture parameters of RAC in flexure. This will included self-similar RAC specimens and specimens having interphase with conventional concrete along its longitudinal section. A detailed parametric study. The experimental results will be calibrated using DIC measurements.
4. Calibration of experimental work with numerical results obtain by performing non liner FEM analysis using commercial software.

#### **Research Interest:**

- Interface behaviour of concrete
- Recycled Aggregate concrete
- Fracture behaviour of Special concrete.
- Fatigue behaviour of RAC.

#### **Invited Lectures**

- Invited for the Technical talk on **“Building services practical approach and challenges in construction Projects”** on the three days Faculty Development Program titled **“Future of Construction Technology and Green Buildings”** organized by the department of civil engineering, CMR institute of Technology, Bangalore
- Invited for the Technical talk in **“One week workshop on Advances in Construction Project Management”** and presented in the filed of **“Building services- Currents needs and Trend”** Organized by JNNCE, Shivamogga , 23<sup>rd</sup> to 27<sup>th</sup> July 2018.

### **Journal / Book Chapter / Researches Papers**

- Prashanth V P, G P Chandradhara Published paper Entitled “**A study on influence of GGBFS as binder on bond strength behavior of Reinforced concrete**” in Springer Nature Singapore Pte Ltd. 2021  
[https://link.springer.com/chapter/10.1007%2F978-981-15-6828-2\\_5](https://link.springer.com/chapter/10.1007%2F978-981-15-6828-2_5)
- D.B. Nirmala, Prashanth V P “Feasibility study on locally available bamboo as Structural reinforcement in conventional RCC structural member ” IJSR, Vol.05, Issue 11, ISSN .No 2277-8179,IF : 3.508 , IC Value : 69.48.  
[http://www.worldwidejournals.com/international-journal-of-scientific-research IJSR\)/file.php?val=November\\_2016\\_1477991214\\_224.pdf](http://www.worldwidejournals.com/international-journal-of-scientific-research-IJSR/file.php?val=November_2016_1477991214_224.pdf)
- Sandesh N U & Prashanth V P (2014) A study on engineering properties of textile ETP sludge based cement concrete, IJIET, Vol 4, Issue 4. <http://ijiet.com/wp-content/uploads/2015/01/43.pdf>
- Prashanth, V P., Dharshan K. (2013), “Evaluation Of Room Comfort Characteristics In An Existing Educational Building to Consider Sustainability” , International journal of engineering research and Technology, Vol. 2 issue 8 ,August-2013. ISSN: 2278-0181.  
<http://www.ijert.org/browse/volume-2-2013/august-2013-edition>

### **Inter National and National Conference publications**

1. Prashanth V P, Vishwananth K Dalawai Presented a paper on “*A study on influence of dilution of alkaline to binder rations on fresh and harden behaviour of Geopolymer mortar*” in International conference National Seminar on Geopolymer Concrete Applications: Challenges and Opportunities on 9<sup>th</sup> Feb. 2020 in DSCE, Bangalore.
2. Prashanth V P, and G.P. Chandradhara, “ A study on the influence of internal voids structure on bond strength characteristics of Integral SAP based self curing concrete” International Conference Emerging challenges in GULF Countries – 2019 ( ICECIG 2019), on 05<sup>th</sup> November , Organized by Institute of Engineers , KUWAIT.

3. Prashanth V P, Adarsh S R, G.P. Chandradhara, “ Appraisal of energy level in the Existing Residential Building and Implementing sustainable measure without influencing the comfort conditions” International Conference Emerging Trends in Civil Engineering (ESCE 2018), JNNCE, Shivamogga , 27th & 28th September 2018.
4. Adarsh S R, Prashanth V P, Rabinandan J, “Smart Helmet” International Conference Emerging Trends in Civil Engineering during (ESCE 2018), JNNCE, Shivamogga 27th & 28th September 2018.
5. Prashanth V P, Dharshan K, P S Raghuprasad (2017), “Experimental Investigation on the Influence of Natural and Commercial available Absorbents as Internal Curing agent on cement mortar”, National Conference on Novel Polymeric Materials” , POLYCON – 17, 15th & 16th September-2017.
6. Prashanth, V. P, Madan Kumar L , Mahender Kumar H M, “Study on Influence of Alkalis on the consistent and other Properties of Sun-Dry Cured Geo Polymer Mortar”, International Conference on Composite Materials and Structures, ICCMS-17, IIT, Hyderabad, 27-29 December 2017.
7. Dharshan.K, Prashanth.V.P and. Raghuprasad P.S., “Experimental studies on compressive strength of Soil-cement mortar”. National conference on contemporary construction engineering practices and techniques - concept 2016, MIT, Manipal, pp. 102-109, 26-27, August 2016.
8. Prashanth.V.P, Dharshan.K and. Raghuprasad P.S., “Assessment and evaluation of comfort conditions in an existing hospital building – a case study in Mysuru”. National conference on contemporary construction engineering practices and techniques – concept 2016, MIT, Manipal, pp. 59-65, 26-27, August 2016.
9. Prashanth V P, Varun K and Raghu K, “ Utilization of Recycled Paper Mill Sludge as a Partial Replacement for Cement in Manufacture of Solid Concrete Blocks” National Conference On Emerging Trend in civil engineering, Bangalore -2013

10. Sandesh K, Prashanth V P. and D.B Nirmala, “An experimental investigation on textile ETP sludge as a partial replacement for cement in concrete” National Conference on Innovations in Civil Engineering, Bangalore-2013.
11. Sandesh N U & Prashanth V P (2014) A study on engineering properties of textile ETP sludge based cement concrete, IJJET, Vol 4, Issue 4.
12. Prashanth .V.P, Dharshan.K and Raghuprasad P.S. “ASSESSMENT AND EVALUATION OF COMFORT CONDITIONS IN AN EXISTING HOSPITAL BUILDING – A CASE STUDY IN MYSURU” Proceedings of National Conference on Contemporary Construction Engineering Practices and Techniques - ConCEPT 2016, 26th-27th, August 2016, MIT, Manipal. pp. 59-65.
13. Dharshan.K, Prashanth .V.P and Raghuprasad P.S. “EXPERIMENTAL STUDIES ON COMPRESSIVE STRENGTH OF SOIL-CEMENT MORTAR” ” Proceedings of National Conference on Contemporary Construction Engineering Practices and Techniques - ConCEPT 2016, 26th-27th, August 2016, MIT, Manipal. pp. 102-109
14. Raghuprasad P.S., Dharshan.K and Prashanth V.P. “EFFECT OF MATERIALS MANAGEMENT ON THE COST OF THE PROJECT– CASE STUDIES” Proceedings of International Conference on Energy, Environment and Engineering ICEEE-2016, Coimbatore Institute of Technology, Coimbatore, Tamilnadu, 29th Feb. -2nd March, pp.153.
15. RajathSingh S, and Prashanth V P “Evaluation and Consideration Of Sustainable Measures For Educational Building” National Conference On Recent Advances In Civil Engineering – Race 2013.

**Achievement:**

- Awarded a Funding for the student Project through TEQUIP III, for the inter disciplinary works Smart Helmet.
- Perceiving PhD in IIT Hyderabad, course work completed.

- Secured Second state Rank in Post-Graduation , VTU.
- Served 5. 6 years in construction industry handing responsibly of Assistant Project Manager. Worked for RMZ Corp, ICG Hotels, Sobha Developers. Award as Best outstanding Site Engineer in SOBHA Developers.

### **Summary of current Research work:**

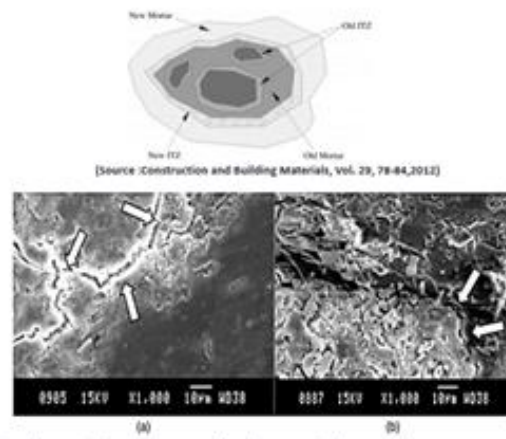
The Concrete is mankind stone materials where aggregates are embedded in the cement matrix. Concrete is quasi brittle material. Concrete construction is assumed to be monolithic in nature, but actual practice it is not possible to construct structure in one time, due to practical challenges. In the construction of some important structure like dams, nuclear construction, cooling towers, bridges, piers and in Mass concrete structures application concrete works done in phases. The joint created between harden old concrete to new concrete are inevitable and is called as interface in concrete. These joints between successive layer (old and new layer) are potential site for crack formation and propagation.

The performance structure is strongly depend on the interphase behavior and is important for the safety and durability of the repaired structures. Research involving concrete-concrete interface along across the specimen can provide very useful information in the field of interfacial fracture mechanics of concrete. The present study is mainly focus on the study of fracture behavior concrete to concrete interface through Size-effect method (SEM).

Globally, 480 CUMT of solid waste produces from construction industry. In India , almost 48 Million tones per annum , solid waste produces, which compresses of 60- 70 % by the aggregates. The use of Recycled Aggregate (RA) in construction promotes sustainability in two ways, hence it is planned to consider RAC for the concrete to concrete interface material study.

The present work is planned to study the fracture behaviour of Recycled Aggregate Concrete (RAC) and its interfaces under flexure loading with pre-defined crack for self-similar specimen. The study will investigate non-linear fracture parameters of RAC through work fracture method and size effect method. Parameters such as fracture energy, length of fracture process zone and CMOD for single material and bi-material interface for distinct grades of RAC shall be found and validated with digital image co-relation techniques (DIC).

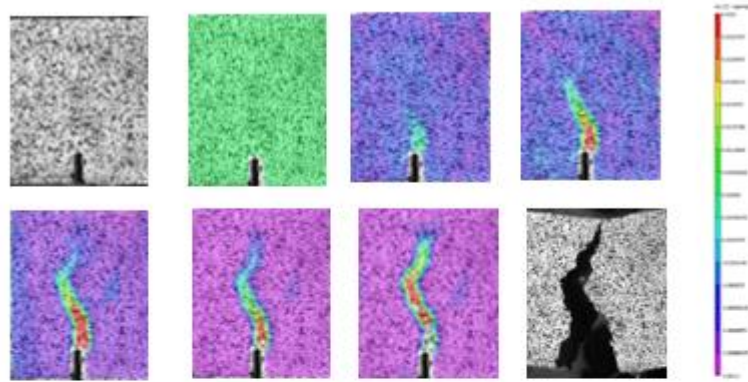
## The interface in Concrete Recycled aggregate



Cracks in the remaining mortar attached to a typical recycled aggregate specimen.

## Strain Distribution along pre-crack in bending for CAC & RAC using DIC.

Conventional aggregate Concrete (CAC): Small Series ( D- 76 mm, S/D – 2.5, a/D- 0.2)



Recycled aggregate Concrete (RAC) : Small Series ( D- 76 mm, S/D – 2.5, a/D- 0.2)

