

Brief CV

M.Chakradhara Rao (M.Tech., Ph.D. IITKGP)

Associate Professor & Head

Civil Engineering Department, Institute of Technology

Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur - 495009 (C.G.), India

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Research Interests/Expertise: Sustainable Construction Materials, Static and Impact Testing of Concrete, Microstructural Analysis of Concrete

Educational Qualifications:

Ph.D. from IIT Kharagpur in Structural Engineering, 2010

M.Tech. from NIT Surathkal in Structural Engineering, 1999

B.Tech. from Nagarjuna University in Civil Engineering, 1997

DCE from MVGR Govt. Polytechnic, AP in Civil Engineering, 1993

SSC from Govt. High School, AP, 1988

Teaching and Research Experience

- *Associate Professor in the Dept. of Civil Engg., IT, GGV from May 2012 to Till date*
- *Professor in the Dept. of Civil Engg., GIT, GITAM University, Visakhapatnam since March 2011 to April 2012*
- *Professor & Head, Civil Engg.Dept. Bapatla Engineering College, Bapatla, Andhra Pradesh during September 2010 to March 2011*
- *Project Associate, Dept. of Civil Engg., IIT Kharagpur from January 2007 to December 2009*
- *Assistant Professor from March 2005 to January 2007 and Lecturer during July 1999 to March 2005 in the Dept. of Civil Engg. at Bapatla Engineering College, Bapatla, Andhra Pradesh*

Books Authored:

Title: **Systematic Approach of Characterisation and Behaviour of Recycled Aggregate Concrete**

Publishers: **Springer**

ISBN: 978-981-10-6686-3

Year: 2017

Authors: **M Chakradhara Rao**, S.K.Bhattacharyya, Sudhirkumar V Barai

Research Projects Completed:

- 1) Title: Normal and medium strength concrete with 100% recycled coarse aggregate
Funding Agency: CSIR, New Delhi, India

Amount: 13.75 Lakhs

Sanctioned in 2013 (3 years)

PI: Dr.M.Chakradhara Rao

2) Title: Size-effect and characterization of fracture parameters for crack propagation in concrete

Funding Agency: UGC, New Delhi, India

Amount: 13.86 Lakhs

Sanctioned in 2013 (4 years)

PI: Prof. Shailendra Kumar and Co-PI: Mr.R.K.Choubey & **Dr.M.Chakradhara Rao.**

Research Guidance

M.Tech: 01

Ph.D. (03) ongoing

Research Publications

National & International Journals: 14

National & International Conferences: 12

International/National Journal

- **Chakradhara R Meesala**, Nikhil K Verma, Shailendra Kumar (2019)Critical review on fly-ash based geopolymer concrete. Structural Concrete, (fib Wiley), pp. 1 – 16, DOI: 10.1002/suco.201900326.
- **Chakradhara R Meesala** (2019). Influence of different types of fibre on the properties of recycled aggregate concrete. Structural Concrete,(fib Wiley), pp. 1 – 14, DOI: 10.1002/suco.201900052.
- **Chakradhara Rao M.** (2018). Properties of recycled aggregate and recycled aggregate concrete: Effect of parent concrete. Asian Journal of Civil Engineering (Springer) 19 (1): 103 - 110
- Choubey R.K., Kumar S. and **Rao M.C.** (2017). Numerical evaluation of simplified extreme peak load method for determining the double - K fracture parameters of concrete. International Journal of Engineering and Technology 9 (3): 2097 – 2110.
- **Chakradhara Rao**, M., Bhattacharyya,S.K., Barai,S.V. (2017). Influence of different demolished old structures concrete as aggregate on properties of concrete. Indian Concrete Journal (ICJ) 91 (1): 68 – 85. ISSN: 00194565,January
- Choubey R.K., Kumar S. and **Rao M.C.** (2016).Modeling of fracture parameters for crack propagation in recycled aggregate concrete. Construction and Building Materials (**Elsevier**) 106: 168-178. IF: 3.169; ISSN: 0950-0618. SCI March 2016
- Choubey R.K., Kumar S. and **Rao M.C.** (2014). Effect of shear-span/depth ratio on cohesive crack and double-K fracture parameters. Advances in Concrete Construction (**Technopress**) 2 (3): 229-247. ESCI, SCOPUS, ISSN:2287-5301, Online (2287-531X)

- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Interfacial Transition Zone, Strength and Chloride Penetration of Recycled Aggregate Concrete. *Indian Concrete Journal (ICJ)*, 89 (11), 54 – 65, November 2015.
- **Chakradhara Rao, M** and Arun, K. Influence of Superplasticiser on Properties of Recycled Aggregate Concrete. *Asian Journal of Civil Engineering (BHRC)*, 16 (7), 1001 – 1023, May 2015. ISSN: 1563-0854 (Print), 2522-011X (online), Springer,
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Properties of Recycled Aggregate Concrete using Non-destructive Testing. *International Journal of Structural Engineering and World Congress*, 2012.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. *Influence of Field Recycled Coarse Aggregate on Properties of Concrete. Journal of Materials and Structures, RILEM (Springer), 44 (1), 205 – 220, 2011.* ISSN: 1359-5997 January 2011
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. *Behaviour of Recycled Aggregate Concrete under Low velocity Impact. Journal of Construction and Building Materials (Elsevier), 25 (1), 69 – 80, 2011.* January 2011
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. *Recycled Coarse Aggregate and its Use in Concrete. Indian Concrete Institute Journal.*
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Microstructure of Recycled Aggregate Concrete. *Journal of Structural Engineering*, 38 (1), 75 – 83, 2011. ISSN: 0970-0137

International/National Conferences

- **Chakradhara Rao, M.,** Ramanarayan. *Effect of the quality of recycled aggregate on compressive strength of recycled aggregate concrete. Proceedings of 2nd International Seminar On “Utilization of Non-Conventional Energy Sources for Sustainable Development of Rural Areas ISNCESR’16 17th & 18th March 2016.*
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Compressive Strength and Durability of Recycled Aggregate Concrete. *International conference on Sustainability Challenges and Advances in Concrete Technology*, 188-196, 2 - 4th May 2012, PSG College of Technology, Coimbatore, Tamil Nadu, India
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. *Recycled aggregate concrete: A sustainable built environment. International conference on Sustainable built environment – The state of the art.* 12-14th December 2010, Kandy, Srilanka.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Microstructure of Recycled aggregate concrete. *Proceedings of the Seventh Structural Engineering Convention, SEC-2010, Annamalai Univeristy, Tamilnadu, 8-10th December 2010.*
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Recycled aggregate concrete: A sustainable built environment. *International conference on Sustainable built environment – The state of the art.* 12-14th December 2010, Kandy, Srilanka.

- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Influence of Recycled Aggregates on Mechanical Properties of Concrete. The 5th Civil Engineering Conference in the Asian Region and Australasian Structural Engineering Conference 2010. Sydney, Australia, 8 – 12th August 2010.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Recycled Aggregates: A sustainable Construction Material. The National Conference on “Sustainable Development of Urban Infrastructure” VNIT Nagpur, 18 – 19th June 2010.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Towards Waste to Wealth: Construction and Demolition (C&D) Waste as Aggregate in Concrete. International Seminar on “Waste to Wealth” “Green Building Materials and Construction Technologies using Agricultural and Industrial Waste”. New Delhi, 12-13th November 2009
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Characterisation of Recycled Aggregate Concrete Prepared with Recycled Coarse Aggregate obtained from Two Different Sources. International Conference on Advances in Concrete, Structural and Geotechnical Engineering, Pilani, 25-27th October 2009.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Influence of Different Sources of Recycled Coarse Aggregate on Properties of Concrete. Proceedings of First International Conference on Recycling and Reuse of Materials (ICRM 2009), Kottayam, Kerala, 17-19th July 2009.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Characterisation of Recycled Aggregate Concrete. Proceedings of the Sixth Structural Engineering Convention, SEC-2008, Chennai, 18-20th December 2008.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Preliminary Test Results of RCA based Concrete. Proceedings of International Conference on XXXVI World Congress on housing Sector, Kolkata, 3-7th November 2008.

Lecture Notes

1. “Recycled Aggregate Concrete” A QIP Short term course on “**Pavement, Materials, Design and Evaluation**” Organized by **Civil Engineering Department, IIT Kharagpur, 2009.**
2. “Recycling of Construction and demolition Waste” AICTE Sponsored Staff Development Program organized by **GMRIT, RAJAM, 30th May to 11th June 2011.**

Workshops/Refresher Courses Conducted/Organised

- A five day Short term course on “Repair, Rehabilitation and Strengthening of Concrete Structures using high performance cement based materials” under GIAN (MHRD) during 13-02-2018 to 17-02-2018.
- A three week refresher course on “Advances in Engineering and Technology” during 5th June 2017 to 24th June 2017, Sponsored by UGC/MHRD, at UGC-HRDC, GGV, Bilaspur
- A one day workshop on awareness programme of NPTEL for students of IT

Professional Memberships

- Life member of The Indian Concrete Institute
- Life member of ISTE

Consultancy Works completed at Civil Engineering Department, GGV Bilaspur

Internal Consultancy Works: Structural Design / Vetting/proof checking for various Building Projects of Guru Ghasidas Vishwavidyalaya, Bilaspur

Total Projects Cost: 7174 Lakhs

External Consultancy Works: Structural Design / Vetting for various Building/Bridge/Sump well Projects for private/Govt organizations such as Nagar Palik Nigam, Bilaspur; CPWD; Sandeep Singh Bhatia, TEC, Raipur, etc.

Total Cost of Projects: 2086.10 Lakhs

Administrative Responsibilities at GGV

- Holding the position of Head, Civil Engineering Department w.e.f. 28-06-2017
- Administrative Warden, New Boy's Hostel A (19-09-2018 to April 2019)
- Member, Committee for Ordinance for Transparency in Examinations (01-11-2018)
- Member, Committee for Rules and Regulations for study leave/leave under QIP for faculty in SoS, Engg.&Tech. (12-10-2018)
- Convener, MOOCs Lab Committee w.e.f.21-12-2018
- Member, VRET-2018-19 Ph.D. admission brochure committee w.e.f.07-08-2.18
- Working as a member of Advisory & Executive Committee for Unified Consultancy Services SoS, Engg. & Tech. w.e.f. 03-11 -2012
- Working as a Member of CEC-CMC
- Working as a Member of Academic Council w.e.f. 15-9-2012
- Working as a member of Standing Committee of the Academic Council
- Working as the Nodal Officer of the GIAN and MOOCs of the GGV
- Working as Chairman, BoS, Civil Engineering
- Worked as Member, BoS, Civil Engineering, during 2012-17
- Worked as UE during 2012-13
- Coordinator, AICTE related works during 2015-2017
- Worked as DRC Member for Mechanical, IPE, CSE during 2013-2016

- Worked as a DRC member Civil Engg, during 2-13-2016
- Chairman, DRC, Civil Engineering since June 2017
- Convener, VET/VRET OMR Evaluations for 2013-14 & 2014-15

Administrative Responsibilities in the Past

- Head, Civil Engineering Department, Bapatla Engineering College since 03-09-2010 to 12-03-2011
- Chief Centre Superintendent, B.Tech. (Exams IV Sem) at GITAM University during 2011-12